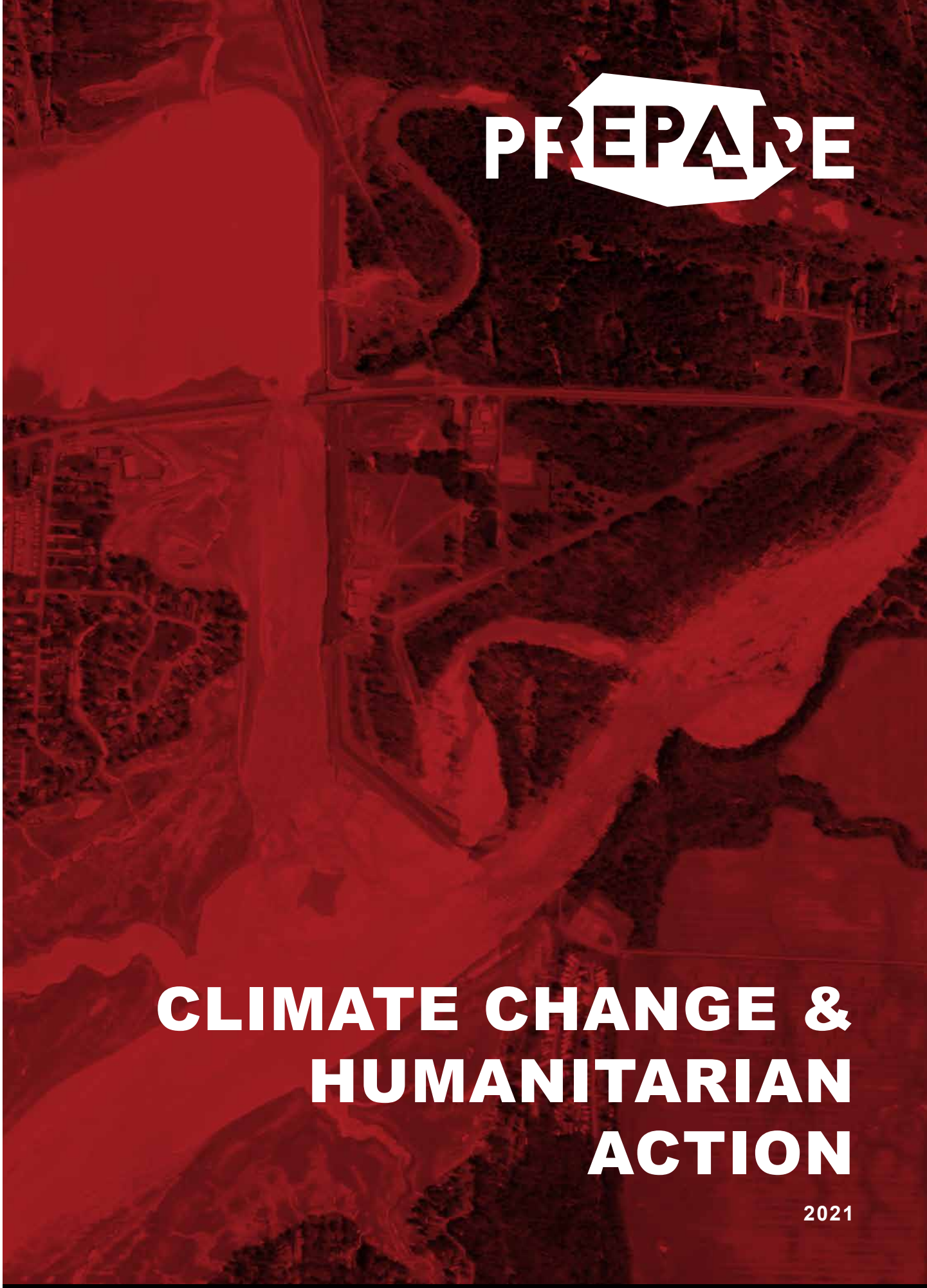

PREPARE

CLIMATE CHANGE & HUMANITARIAN ACTION

2021

PAUL KNOX CLARKE

Cover photo: EDENVILLE DAM COLLAPSE, Midland, Michigan, May 20, 2020, Skysat from planet.com
After days of heavy rainfall, the Edenville Dam on the Tittabawassee River collapsed on May 19, 2020. This image shows the site of the dam on the morning and afternoon of May 20, 2020 (SkySat). The post-failure images show water flowing out of Wixom Lake, through the breached dam, and down the Tittabawassee River. The bright appearance of the water in the morning is from sun reflecting off the turbulent surface directly into the satellite's sensor.

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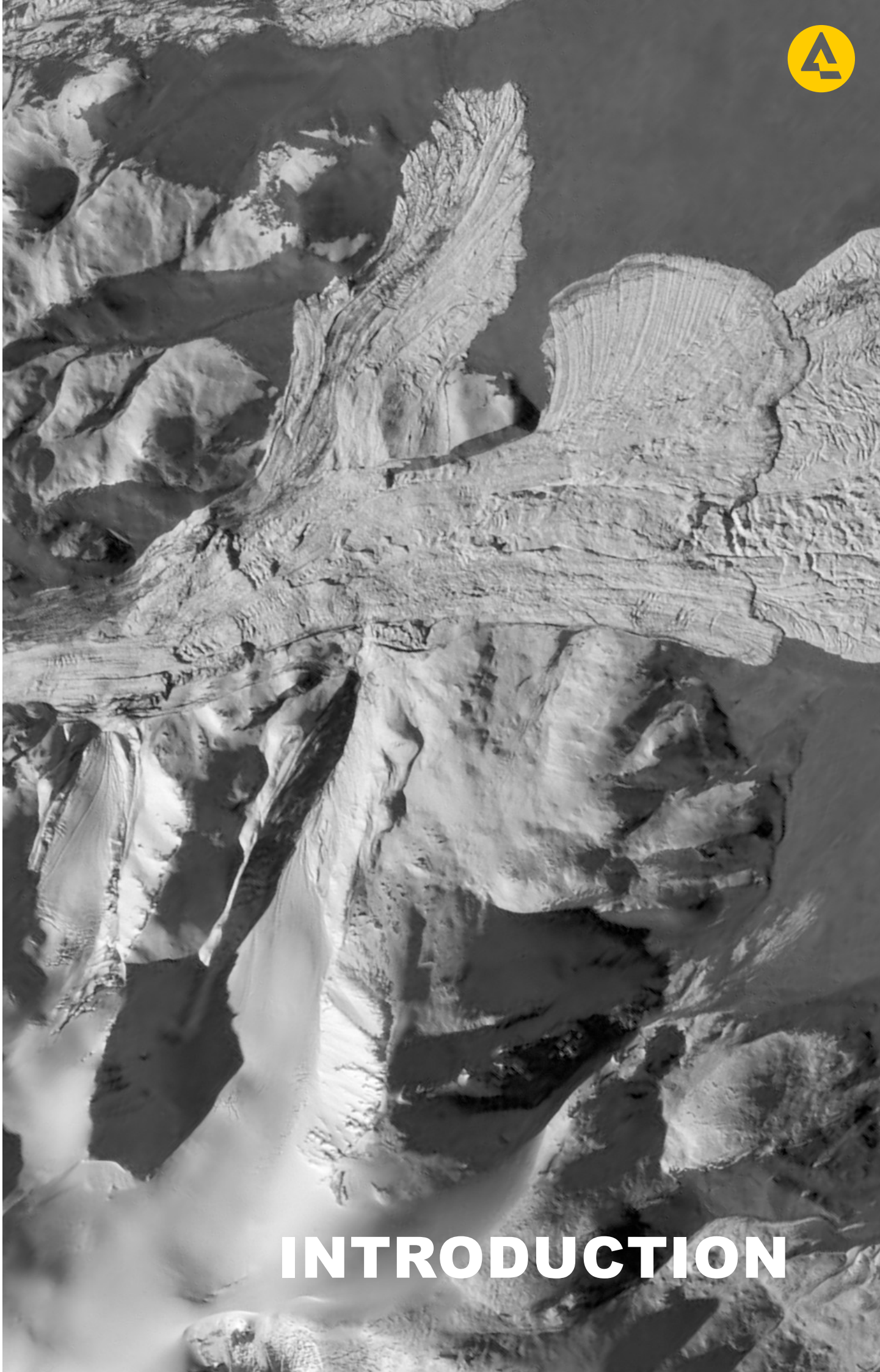


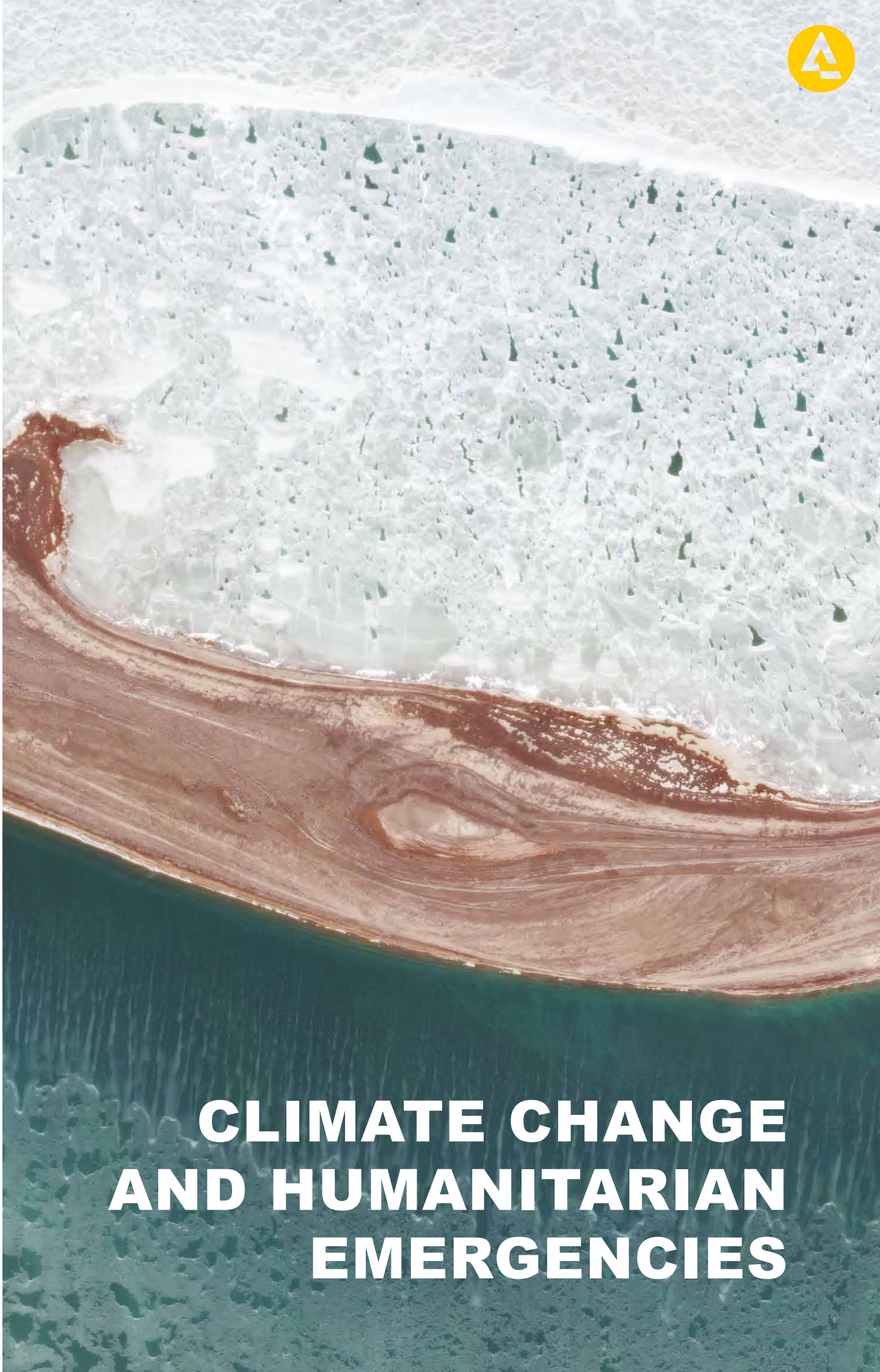
INTRODUCTION

GLACIER DEBRIS FLOW, TIBET, China, Sep 14, 2016, PlanetScope
In September 2016, this glacier lost contact with its bed and collapsed, traveling at speeds of up to 240 kilometers per hour downhill towards Aru Co. A Dove satellite captured these before and after near-infrared images.

This report considers the relationship between climate change and humanitarian action. It asks how climate change will affect humanitarian needs; outlines the current state of readiness to meet these needs; proposes changes that are required to improve readiness and response capacities; and suggests a series of activities that would support these changes.

The report is based on a literature review of peer-reviewed and other high-quality documents, and on two consultation meetings and over 70 interviews with a range of disaster management, humanitarian and climate experts and practitioners.

The main focus of the report is the 'humanitarian system': the loose structure of organisations that provide support to people affected by 'natural disasters and other emergencies'[1] when the emergency is 'beyond the response capacity' of a country's own government.[2] It was this system and its activities that were the focus of the literature review. However, as responding to disasters and crises related to climate change[3] is a task well beyond the scope of the international humanitarian system alone, interviews and consultations were also conducted with representatives of national-disaster management agencies, development organisations and civil-society groups (including womens' and youth groups) who would not normally be considered or consider themselves as part of the system. Thus, while the recommendations made at the end of the report are primarily directed at formal humanitarian actors, they also have relevance to a broader set of organisations working at local, national, regional and international levels.



CLIMATE CHANGE AND HUMANITARIAN EMERGENCIES

SEA ICE IN THE TYULENIY ARCHIPELAGO, Caspian Sea, Kazakhstan, Dec 6, 2020, PlanetScope
This photo is the last of a sequence of PlanetScope images which shows the growth of ice in the Tyuleniy Archipelago, a small group of islands in the Caspian Sea. The northern section of the sea is exceptionally shallow and relatively fresh, so it freezes more easily than the Caspian's southern reaches. The water around the archipelago is so shallow, in fact that the ice leaves visible scour marks on the sea floor.

Human activity is heating the Earth at an extraordinary rate.[4] Since 1880, the planet's temperature has risen by 0.08° C per decade, with an accelerated rate of warming over the past 40 years.[5] As a result, Earth's average temperature was 1.09°C higher in 2011–2020 than the pre-industrial average.[6] Irrespective of any actions taken today, the planet will continue to heat up over the next twenty to thirty years as a result of 'greenhouse gases' that have already been released into the atmosphere.[7]

This global heating has already had a number of observable effects on the atmosphere, land, oceans and frozen areas of the planet.[8] In particular: periods of extreme heat have become more frequent and intense;[9] rainfall and other precipitation has increased, with more frequent and intense heavy precipitation;[10] tropical storm tracks have moved towards the poles, and, while the evidence does not show that they have become more frequent,[11] it is likely that tropical storms have increased in intensity.[12] Extensive melting of ice, combined with an increase in sea-water temperature, has led to higher sea levels.[13]

These extreme climatic events, coupled with other human activities, are disrupting the planet's ecological systems and leading to a loss of biodiversity that is already impacting the livelihoods of people who depend on biological resources for food security, economic development and pharmaceutical products. The majority of the 17 sustainable development goals of the UN directly depend on biodiversity – from genetic level to ecosystem level – to regulate fundamental processes of nature. Loss of this biodiversity damages agricultural systems, water availability, economic growth and a variety of livelihood options.

CLIMATE CHANGE AND 'NATURAL' DISASTERS

Climate change is already causing increased humanitarian need as a result of more frequent or more violent flooding, storms, heatwaves, wildfires, infectious diseases and food insecurity. These trends will become more and more pronounced, and disasters will also become more unpredictable.

Such profound changes to the environment have consequences for many aspects of human (and other) life on the planet. From a humanitarian perspective, these changes mean an increase in the frequency and intensity of disasters,[14] as well as changes to the locations of crises, and to the ways in which disasters and crises develop. Many of these humanitarian impacts are already visible:

- As a result of climate change, more people have died as a result of extreme heat.[15] From 1990 onwards, populations everywhere have become more vulnerable to heat and heatwaves, which have increased in frequency, intensity and duration,[16] and which are particularly evident in the most densely settled parts of the planet.[17]
- 'Fire weather' has become more common in many parts of the world,[18] greatly increasing the risk of wildfires to people and property.[19] Fire can kill directly, or can lead to increased mortality through smoke inhalation, even among people many miles away.[20]
- The number of storm-related and flood-related disasters has steadily increased in Africa, Asia and Latin America since the 1990s.[21]
- Conditions have become much more favourable for the transmission of diseases and infections, particularly in parts of Africa, South East Asia and the Western Pacific.[22]

“Almost all of the people interviewed for this report suggested that the number or intensity of climate-related disasters had increased”

- Food security has been threatened by damage to crops and decreased crop yields[23] resulting from a number of climatic factors, including increased drought in some areas.[24] This has contributed to increased food insecurity.[25]

Almost all of the people interviewed for this report suggested that the number or intensity of climate-related disasters (particularly flooding and drought) had increased in the areas where they worked, and that these changes appeared to be outside normal year-on-year, or decade-on-decade, fluctuations.

As global temperatures continue to rise, and in the absence of massive economic and physical reengineering programmes, all of these trends – and the deaths and damage associated with them – are expected to become significantly more pronounced.[26] It is also likely that disasters will become increasingly unpredictable – occurring in places or in ways that they have not done before.[27]

CLIMATE CHANGE AND MIGRATION

Climate-related disasters have already contributed to large scale displacement in some places. It is difficult to estimate the number of people who have been displaced globally as a result of climate change or to forecast how many people might be displaced in the future. It is safe, however, to assume that the number of people forcibly displaced will significantly increase.

While the relationship between climate change and weather-related disasters is clear, the relationship between climate change and distress migration is both less direct and more complex. Climate can influence people’s decisions to move in a number of different ways. Acute events such as flooding or cyclones may force people to find shelter elsewhere. Longer-term environmental impacts, such as sea-level rise or increased difficulty in growing crops, may contribute to decisions to move, although academics working on the topic generally emphasise that climate is just one of many factors that influence this type of decision[28] and that the economic impacts of climate change may actually prevent people from moving.[29] Climate change might also lead, indirectly, to displacement in situations where land is taken for climate change mitigation or adaptation activities, such as building reservoirs.[30]

The nature of this movement also differs from one situation to the next. People might move for a short period of time – perhaps until the flood waters have subsided – or for longer periods. They might move within their own local area, their own country, or across an international border. They might move as entire households, or one member of the household might move in order to send remittances home. Movement might be an entirely new and unaccustomed strategy, or – as is the case with many pastoral and agro-pastoral communities – an adaptation of an existing way of life.

As a result, it is difficult to make any broad, quantified statement on the degree to which climate is affecting migration globally. A recent review of the literature on the topic[31] suggests

that there is "no evidence for an upward trend" to date in migration caused by extreme weather events or by the longer-term effects of climate change.[32] Lack of evidence for a global trend does not, however, mean that large-scale displacement is not occurring in specific contexts: in recent years drought has contributed to over a million people being displaced in Somalia,[33] and cyclones and flooding have led to the displacement of very large numbers of people in South Asia.[34] In general, people moving to escape extreme weather events have tended to stay in their own countries, and the displacement has been temporary,[35] which makes estimating the numbers of people affected more challenging. When it comes to longer term climate change-related migration, numbers are difficult to estimate because there has been very little study of the phenomenon.[36] There are examples from countries such as Bangladesh and Iraq of millions of people moving away from areas that are becoming increasingly unproductive and hazard-prone, and climate change has undoubtedly played a part in their decisions to move.[37] People interviewed for this report gave numerous examples of both short- and long-term population movements that they attributed to climate change.

If it is difficult to put a number to the many people who have already been forced to move as a result of climate change, it is equally difficult to project how many people will be displaced in the future. Projections vary enormously[38] for the definitional reasons outlined above, and because future numbers depend on choices that have still to be made by governments and people around the world. Specifically, the number of people displaced by climate will be determined by the success or otherwise of actions taken to prevent further climate change (mitigation), and of actions taken to protect people from the worst effects of climate change (such as flood defences, changes to agricultural practices, and other adaptation activities).[39] One figure which is often quoted is the one proposed in the 2006 'Stern Report', which estimated that 150–200 million people would be displaced due to climate change by 2050.[40] More recently, the World Bank's 'Groundswell 2' report estimated that by 2050 the world could expect an additional 216 million migrants as a result of climate change, but that 80% of this migration could be prevented by effective climate change mitigation and adaptation.[41] Essentially, we can be almost certain that we will see very large numbers of people displaced for reasons related to climate change in the near future,[42] but it is not possible to say with any certainty how large these numbers will be.

CLIMATE CHANGE AND CONFLICT

Countries affected by conflict are particularly vulnerable to the effects of climate change. The combination of conflict and climate change magnifies crises and increases suffering, while decreasing the ability of government and civil society to prepare for future disasters.

"where countries enduring conflict are also affected by climate change, the two interact to make suffering much worse"

“Climate change is affecting poor and marginalised people first and worst.”

The relationship between climate change and conflict is also unclear. Some studies suggest a statistically significant link between changes in climate and increased incidence of conflict,[43] and interviewees gave a number of examples of conflicts that they thought were related to climatic issues. However, the academic consensus appears to be that climate factors alone do not lead directly to conflict, although climate can contribute indirectly to conflict by exacerbating existing social tensions and so making conflict more likely.[44]

Conflict also makes it more difficult for people to survive the crises of climate change. Conflicts (and particularly internal conflicts) can decrease the resources, attention, access and legitimacy that governments need to successfully engage in programmes to develop resilience or prepare for climate-related crises.[45] Conflicts also serve as a disincentive for external donors to invest in programmes to reduce the deadly impacts of climate change,[46] and make communities and households more vulnerable to these impacts by decreasing access to services, and making it more difficult to earn a living or build up reserves, even in ‘good’ years.[47]

In short, where countries enduring conflict are also affected by climate change, the two interact to make suffering much worse. These destructive interactions are common in the places where humanitarians work. Over two thirds of the countries experiencing conflict in 2021[48] – including three of the five largest humanitarian crises[49] – are among the most vulnerable in the world to climate change, according to the ND Gain index.[50]

CLIMATE CHANGE AND CASCADING CRISES

Climate change may also cause global cascading crises, with social, economic and political effects around the globe. This sort of crisis is hard to predict or model, but – as has been seen with Covid-19 – can have massive impact.

One further potential impact of climate change that was mentioned by many interviewees was the ‘cascading’ crisis: a situation where a single large-scale weather event (such as a global drought), or multiple events taking place at the same time, affected global supply chains and other economic infrastructure to create a severe, global, humanitarian and political crisis. As yet, the world has not experienced a crisis of this type that can be attributed to climate change (although the chance of ‘compound events … at multiple locations’[51] has increased, and there is some evidence that poor harvests globally in 2010 and 2011 were a factor in catalysing the ‘Arab Spring’, and subsequent political unrest).[52] The experience of COVID-19 has, however, sensitised people to the potential for this type of cascading event to occur. It has also highlighted how difficult it is to anticipate and prepare effectively for complex global crises because their extremely broad geographical and sectoral impacts are very hard to model.[53]

VULNERABILITY TO CLIMATE-RELATED EMERGENCIES

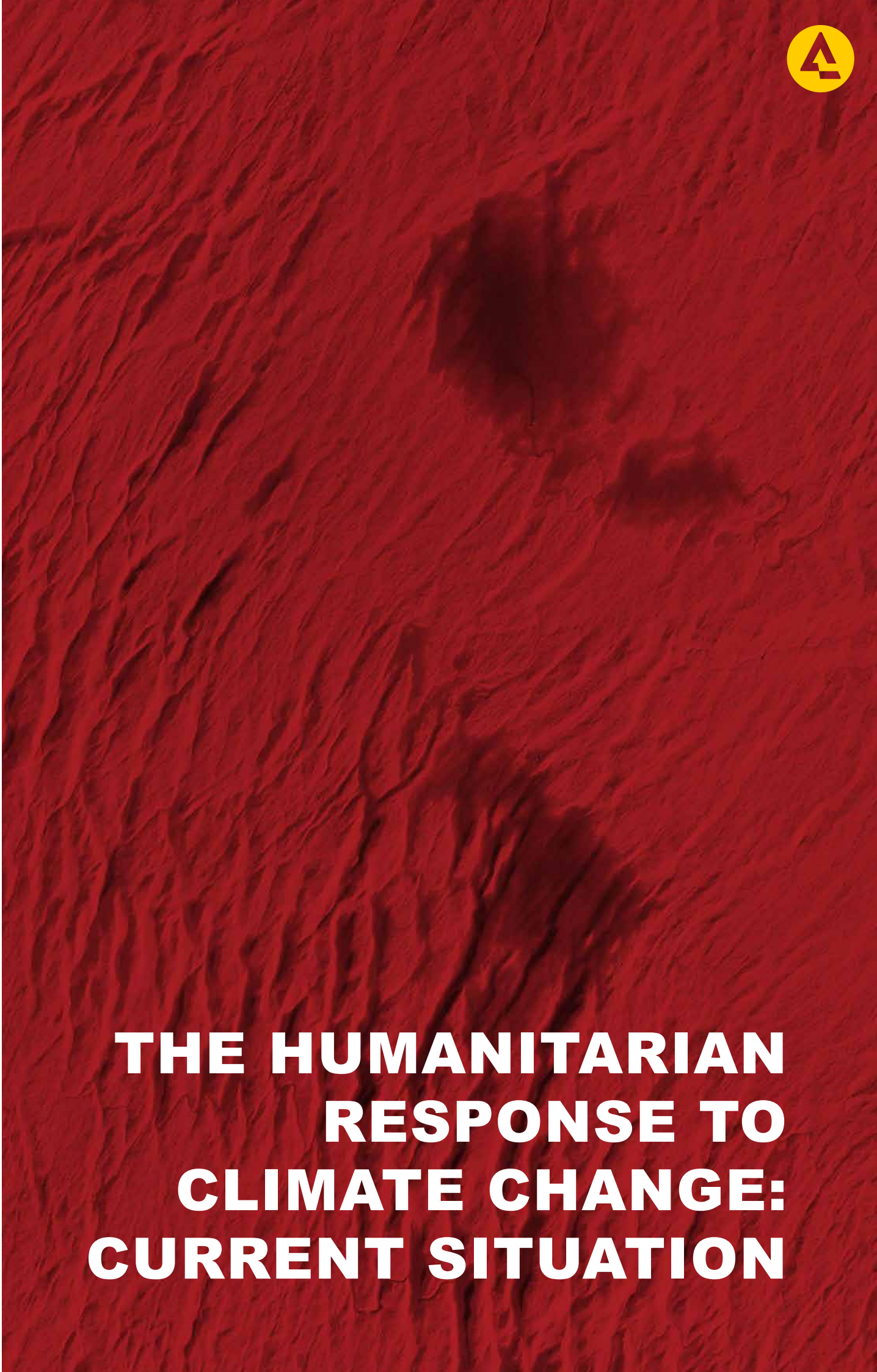
Climate change is affecting poor and marginalised people first and worst. These people are more exposed to the risks of climate change, less able to cope with these risks, and more likely to die when risk becomes disaster.

Climate change is a global reality, which will affect the lives of everyone on earth. The nature and severity of these effects, though, will differ according to where a person lives, and their economic and social status. In general, poor and marginalised people will be worst affected[54] and the impacts will be magnified hugely if they live in lower-income countries. These countries often start at a higher level of risk than the rest of the world. They are disproportionately exposed to the negative effects of climate change (such as droughts and tropical storms): two thirds of the countries most exposed to climate change are classified as low income.[55] Africa, a continent with a particularly high proportion of LICs, is expected to see more flooding,[56] more drought, and lower crop yields[57] as global heating continues. These risks are then compounded by economic factors. The economic systems of many low-income countries – which often have a high reliance on agriculture – are particularly vulnerable to weather events, and, as they have more limited resources for Disaster Risk Reduction (DRR) and other adaptation activities, these countries are also less able to take action to reduce their vulnerability. And when disaster strikes, people in these countries are far more likely to die than people in richer states.[58] This problem is only going to get worse, as the populations of many low-income states are expected to increase significantly in coming decades,[59] at the same time as the effects of climate change become increasingly severe.

Evidence from humanitarian disasters demonstrates that when disasters occur in these countries, people who are already economically and socially marginalised are likely to be most severely affected.[60] Patterns of marginalisation differ from one place to another, but across multiple contexts, women and girls are consistently noted as being among the most vulnerable elements of the population to climate-related disasters.[61]

The loss of biodiversity will also adversely impact those who are already vulnerable. Marginalized populations, many of whom are dependent on rainfed agriculture or marine systems for food security, will see significant changes to the ecosystems that support them. Local extinctions of species that are fundamental to food webs, pest and disease control, soil formation, etc., will significantly impact those who are most immediately dependent on ecosystems for their livelihoods.

One particular concern expressed by many interviewees was that climate change is not only increasing the risks that poor people face, but it is also already having a disastrous effect on their ability to survive future shocks. Faced with successive bad years, high prices and poor harvests, many people are unable to build up the reserves that would have previously enabled them to survive a crisis. Climate change is not only ensuring that there will be more disasters – it is also destroying people's ability to survive these disasters when they occur.



THE HUMANITARIAN RESPONSE TO CLIMATE CHANGE: CURRENT SITUATION

MELTWATER ON PETERMANN GLACIER, Greenland, Jun 26, 2019, Skysat from planet.com
Description: Even the northernmost parts of Greenland were well above freezing during a summer 2019 heatwave. Meltwater on the Petermann Glacier formed bright blue lakes and rivers on the heavily-crevassed surface of the ice.

“nothing is being done right now that will avert the scale of crisis that’s coming”

Climate change is already having significant humanitarian impacts, although the link between these impacts and climate change is not always immediately visible. In the (near) future, climate change will make existing crises worse, as well as leading to more, larger, increasingly frequent and more destructive disasters. Some of these may be hard to predict or may develop in ways that are unexpected or hard to model.

It has been suggested that the cumulative impact of these trends will lead to a doubling of the number of people in need of humanitarian assistance.[62] While it is not possible to determine the impacts of climate change on humanitarian need with any accuracy,[63] an increase of this order seems entirely possible. What, then, is the humanitarian system doing to respond in the present, and prepare for the future?

HUMANITARIAN ENGAGEMENT WITH THE ISSUE OF CLIMATE CHANGE

Despite the evident threat, many humanitarian actors have not engaged with the impact that climate change is having, and will increasingly have, on humanitarian activities. Among those actors who are aware of the challenge, many are not clear how humanitarian programmes can best address climate issues.

Interviewees for this study suggested – and demonstrated – a wide range of engagement with the topic of climate change. Some humanitarian organisations (notably the Red Cross movement, but also a number of UN agencies and NGOs) have been focussed on this issue for some time.[64] In areas that are already feeling the effects of climate change – such as Bangladesh, the Pacific and the Sahel – climate issues are also more widely discussed and considered in humanitarian programming. There has also been a notable increase of interest within the sector in the last three years, possibly mirroring an increase in media attention and public engagement with issues related to climate change.[65] A number of reports have been produced,[66] the IASC has agreed on a ‘common narrative on the climate emergency and humanitarian action’,[67] the IASC Principles have made a common statement on climate[68] and the Red Cross has developed a climate and environment charter,[69] which has received support from a large number of organisations.

Despite this progress, many humanitarian actors have not engaged with the scale of the climate threat and the impact that climate change will increasingly have on humanitarian needs and operations. Interviewees gave a number of reasons for this: a perception that financial support is not available from donors for climate change issues (until recently, many donors have seen climate change as a ‘developmental’ rather than a humanitarian issue); a sense that climate change is a specialised topic, rather than a global reality that affects core areas of humanitarian work; an understanding of climate change as a distant, rather than an immediate threat (supported by the tendency in the climate change literature to use phrases such as ‘by 2050’ and ‘in the next century’); and pure pressure of work – an existing humanitarian caseload that does not allow for consideration of threats and challenges beyond those that they are already addressing. Several interviewees noted that more attention was being paid to climate issues at the policy level than in practice: as one said: “the more operational people are, the less they see it has to do with them”. They also suggested that climate issues were often ignored in humanitarian

programmes that address conflict[70] (despite the relationship between climate and conflict outlined above). This is possibly a reflection of binary distinctions between 'natural' and 'man-made' disasters and a sense that climate issues belong to the 'natural' disaster category of response, and are not relevant – or are even somehow in competition for resources – in conflict-affected states. A number of interviewees said that the interview was the first time that they had considered the humanitarian impacts of climate change, and that, now they had done so, they would be interested to learn more.

Among (the majority of) interviewees who had considered the impacts of climate change on their work, a large number felt that they were "at a loss as to what to do" in practical terms to adapt their work and organisations to meet the threat, complaining that there was "no road map" and that they were "fumbling in the dark".

Part of the problem here seems to be understanding the nature of the humanitarian challenge. For a number of interviewees, climate change is primarily a multiplier of need, and so the challenge is one of scale. Climate change may cause more flooding, or stronger typhoons, but "the needs will be the same and the response will be the same" – although bigger and more frequent. For others, climate change, as well as increasing needs, will also change the *nature* of needs and of the operational environment and so require broader changes to humanitarian operations, systems and structures. Interviewees talked about new or previously unusual types of disasters, such as heatwaves, for which humanitarians would need new responses. They also talked about a need to fundamentally restructure the system to address cascading and systemic crises, and the fact that in many parts of the world, climate change was creating "a permanent crisis without an endpoint".

Overall, many interviewees agreed that a combination of a lack of interest on the part of some humanitarians, and a lack of clarity on how to address climate issues on the part of others, meant that "nothing is being done right now that will avert the scale of crisis that's coming."

PROGRAMMATIC APPROACHES TOWARDS CLIMATE CHANGE IN THE HUMANITARIAN SYSTEM

Humanitarian organisations are responding to climate change in a variety of ways, from decreasing their own contribution to global heating, through building resilience and reducing risk, to providing support to people caught up in 'natural' disasters. More evidence is needed on which approaches work under which circumstances. As none of the approaches are a 'magic bullet', humanitarian programmes should use a variety of different approaches in combination.

As the humanitarian challenge posed by climate change becomes increasingly clear, more organisations are attempting to determine what this might mean for strategy and programming: the 'So what?' discussed by many interviewees.

Emerging humanitarian policy tends to advocate for a shift of emphasis from 'reactive' response activities that occur after a disaster event to 'upstream' approaches that reduce the risks of climate-related crises occurring and the vulnerability of people to these crises when they do occur.[71] Acting earlier is expected to be both cheaper and more effective than post-disaster response.[72] However, evidence in support of these claims is limited, largely because of the relatively small number of activities that have been conducted and evaluated (see below).

Humanitarian actions in response to climate change sit on a spectrum. At one end, many organisations are working to decrease their own contribution to climate change (generally as part of broader activities to reduce their environmental impact). Through these efforts, organisations hope, among other things, to decrease humanitarian risks, such as more extreme heat events and increased rainfall. These activities, while important, are beyond the scope of this report.

Further along the spectrum are activities which recognise that, whatever progress occurs

on climate change mitigation, many people will inevitably be exposed to risk and so it is important to make them less vulnerable to risks when they occur. These approaches fall under the general heading of 'adaptation' in climate change discussions, but are more commonly thought of as resilience building, Disaster Risk Reduction and preparedness activities by humanitarians. Some activities, such as income generation or provision of healthcare, aim to make people more resilient in general, and more able to survive multiple, different types of risk. Others, further along the spectrum, aim to make people more able to survive specific shocks: projects to strengthen flood defences or to introduce drought- resistant cultivars are examples of this type of more targeted activity.

Decreasing risk and vulnerability will not, however, be enough to shield all people from all of the effects of climate change. There will still be very large numbers of people who suffer the direct impacts of disasters and are unable to cope without support. This means that – further still along the spectrum – come activities to save lives and protect livelihoods in situations of disaster: through preparedness activities before an event occurs (such as developing response plans with community organisations or pre-positioning relief supplies); response activities immediately before an event (such as evacuation), in the early phases of an event (preserving economic assets in the early phases of a drought), or after an event has occurred.

These various types of activity often overlap in practice and are conducted by a wide variety of actors who use different terms to refer to the same activity. As a result, there is some confusion over terminology, and over the differences between 'adaptation', 'resilience', 'DRR', 'preparedness' or 'early action'.[73]

In the humanitarian literature, these related activities are also regularly described as being in opposition to one another, and in competition for funding.[74] This is unfortunate, because none of the approaches offers a 'magic bullet' solution to the challenge of climate-related crises. As outlined below, all of the approaches have both potential and drawbacks, and experts suggest that they should be used in combination, to prevent people from 'falling through the cracks'.[75]

HUMANITARIAN APPROACHES TO BUILDING RESILIENCE

One approach to addressing climate-related emergencies is to support people, households and communities to become more resilient. The objective here is to build up people's resources – income and savings, productive assets or social networks – so that they are more able to survive any challenges or disasters in the future.

Over the past decade, there has been a steady growth in the amount of humanitarian programming designed to address people's underlying vulnerability to shocks,[76] although funding for these activities is still hard to obtain and longer-term, resilience related objectives in Humanitarian Response Plans are consistently under-funded.[77]

Many of these resilience activities are small-scale and local, conducted by a single organisation and not joined to larger initiatives or national plans.[78] They often concentrate on income generation or livelihood-diversification activities.

There is only limited evidence available on the effectiveness of these activities.[79] Those evaluations and reviews that are available suggest that humanitarian resilience initiatives can have multiple benefits, particularly improving income[80] and food consumption.[81] However, the evaluations considered for this report do not provide evidence that these activities are

"none of the humanitarian approaches to climate change offers a magic bullet"

“Resilience and DRR work tends to be less effective for poorer members of the community”

effective in building the ability of people to survive successive shocks, such as can be expected as a result of climate change.[82] The only (limited) exceptions to this are where humanitarian resilience work is conducted as part of a larger national programme.[83]

This general failure to build resilience through income generation results from the scale of the challenge. Increasing incomes alone is unlikely to be a successful route to building resilience: the people most vulnerable to disasters are too poor, and the increased income that would be required too great.[84] In the contexts where humanitarians work, addressing the underlying vulnerability of people to the shocks and crises that will result from climate change will require massive economic, cultural and structural changes.[85] This sort of change is beyond the capabilities of humanitarian organisations working alone,[86] although it has been achieved by governments[87] and may be possible in combination with groups of large development actors.[88] The requirement to work with governments or development actors is one reason why this type of activity has not generally been successful in conflicts,[89] where governments are generally less able or willing to provide social services, and where development actors are often absent.

The literature also suggests that the provision, or continued provision, of basic welfare services (such as health, social protection and education) may be a more effective way for humanitarians to strengthen household resilience than income-based approaches.[90] Similarly, support to migration may also be an effective approach, as migration has, in many cases, been shown to be one of the few ways to significantly increase income and diversify risk at the level of the household.[91] There are also suggestions in some evaluations that the project process can be as important as the output: by supporting programmes that bring communities together to design and implement activities, resilience programming (as well as DRR and preparedness programming discussed below) can strengthen relationships and resilience within communities.[92]

HUMANITARIAN APPROACHES TO DECREASING VULNERABILITY TO SPECIFIC RISKS

As the effects of climate change become increasingly felt, people and governments are adapting to meet the specific risks that are most present in their area: raising or relocating houses which are threatened by regular flooding,[93] or adapting seasonal planting patterns and introducing new crop varieties to make agriculture less vulnerable to drought.[94] While it is not certain that these adaptations will be sufficient to address accelerating climate change in the future,[95] humanitarian activities that support and build on these types of activities have often been evaluated as successful[96] (although, once again, there is not a huge amount of evaluative evidence).[97]

As with approaches that aim to support general, ‘all hazard’ resilience, however, this work is harder to conduct successfully in the fragile and conflict-affected situations where many humanitarian operations occur.[98] And, as with the more general resilience work, it tends to be less effective for poorer and more marginalised members of the community: the people who are most at risk.[99] This is largely because these people have fewer assets and less capital, and so fewer options to build on. It can also be because governments and development actors plan to avoid the greatest financial losses and

so overlook losses in the poorest areas and communities, which have lower dollar values, but are more devastating to the people involved.[100]

HUMANITARIAN ACTIVITIES TO PREPARE FOR, ANTICIPATE AND ACT EARLY IN EMERGENCIES

Humanitarian organisations also regularly engage in activities to be better prepared to respond to disasters, including those resulting from climate change. These activities include: pre-positioning supplies; preparing infrastructure (such as airstrips); training staff; and working with communities to develop response plans and to ensure they have the resources to implement these plans. Preparedness activity has often been conducted at the level of individual agencies – more recently, there have been moves to develop 'whole of system' preparedness for known risks (such as El Niño).[101] Preparedness work can reduce costs and response time,[102] improving the quality of responses as a whole.[103] However, these activities are not a 'magic bullet': they don't work in every case.[104] In order to be effective, the specific activities chosen need to be grounded in the specific country context[105] and to engage with communities.[106]

Where agencies have taken a community-based approach – providing training (often in schools) and supporting community disaster-management committees – the activities have generally been evaluated positively.[107] In order to be successful, this sort of activity needs to be designed in collaboration with the community,[108] requires longer term support to ensure sustainability and benefits from being linked to local and national government preparedness planning.[109] Short-duration, stand-alone projects are much less likely to be successful.

Increased concern about mounting humanitarian crises – including those associated with climate change – has recently led to a focus on a specific element of preparedness: early warning and anticipatory action. Early warning systems have been used in disaster management for many years[110] and have contributed to saving millions of lives[111] by allowing action to take place before disasters occurred, or in the early stages of a disaster. Unfortunately, there are also many examples of decision-makers ignoring early warnings, and so failing to act until the emergency is upon them.[112]

In response to these failings, humanitarian organisations have begun to invest in anticipatory systems, where an early-warning mechanism is combined with pre-agreed financing for a pre-agreed plan of activities. Financing and activities are 'triggered' by the early-warning mechanism – either automatically, when a particular indicator or indicators reach an agreed level (a 'hard' trigger) or on the basis of expert decisions based on the indicators (a 'soft' trigger).[113]

Several interviewees were excited by the potential of these systems to enable faster and cheaper responses to crises caused by climate change. There is, however, very little evidence on the effectiveness of these anticipatory systems.[114] This is in part because many of the systems are very new, and, where pilots have been conducted, they have not always been rigorously evaluated. The evaluations that are available often compare early action to not taking action at all - which may demonstrate the value of acting, but does not necessarily demonstrate the value of acting early.[115]

There is more evidence to suggest that early warning and early action provide value for money and are cheaper than responsive action, although these studies are generally based on predictive models that make assumptions about people's behaviour and about prices, rather than on empirical data.[116]

"we should not expect anticipatory action to work perfectly in all situations"

“humanitarians have tended to focus on how they can get better at bringing things in, rather than on how they can support the mechanisms already in place”

While these anticipatory systems have great potential, they will need to address a variety of challenges in order to be effective. The mechanisms are generally designed for a specific type of disaster, and, with many places facing multiple disasters as a result of climate change, they may provide a sense of false security and miss crises for which they were not designed.[117] The indicators chosen to trigger early action need to accurately predict specific outcomes: this can be extremely difficult when those outcomes – conflict, famine, or even the combined effects of tides and rainfall – are the results of the complex interactions of multiple factors.[118] And even if the indicators are reliable, they require information, which can be hard to obtain, particularly in areas of conflict.[119] Given these constraints, we should not expect anticipatory action to work perfectly in all situations: reviews of current early-warning systems suggest that they are accurate between one third and three quarters of the time.[120]

HUMANITARIAN RESPONSE ACTIVITIES

Humanitarian response activities – that is, the provision of assistance and protection after a climate-related disaster or a crisis exacerbated by climate has occurred – are generally effective in meeting the most immediate, life-saving needs.[121] However, humanitarian response has consistently demonstrated a number of shortcomings which are particularly relevant to the scale and nature of the threat posed by climate change.

Where response is not well integrated with preparedness and early warning, it tends to come late – delays of several months are not uncommon.[122] It has also proved difficult, in many cases, to get assistance to all people and areas affected: a problem that appears to be getting worse.[123] In some cases, the inability to get to people in need is a result of insecurity and conflict (a particular concern given the relationship between climate-related crises and conflict outlined above); in others, the constraints are physical: roads and airstrips can be washed away by flooding.[124] Internally displaced people are particularly likely to miss out on assistance, particularly when they move to urban environments and are ‘hard [for humanitarian agencies] to identify’.[125]

The challenges of timeliness and coverage are partly a result of the dominant ‘model’ of assistance in the humanitarian system, in which assistance is brought to a disaster-affected area from outside, by an external (often international) organisation. In many cases, the total amount of assistance provided through this model is less than that being provided by local actors such as neighbours, faith organisations and local government.[126] Despite this, humanitarian donors and organisations have tended to focus on how they can get better at bringing things in, rather than on how they can support the mechanisms already in place. This may be (slowly) changing. The increased use of cash in humanitarian programming[127] – which relies on local markets to source goods, rather than on humanitarians to transport them – emphasises a more local response. Similarly, the move to supporting local humanitarian actors, while uneven and incomplete,[128] may yet produce a system that is more embedded in local and community response.

Two final critiques of humanitarian response

activity are also particularly important in the context of climate change. The first is that it tends to be much more effective in known, well understood crises than in 'novel' crises (such as the West Africa Ebola epidemic of 2014, or the European irregular migration situation of 2015).[129] Unexpected and highly dynamic situations test the ability of donors and operational agencies to adapt their ways of working: a skill which is often lacking in the humanitarian world,[130] but which may be critical in responding to unexpected and cascading crises caused by climate change.

The second critique is that, while humanitarian response is generally effective in providing life-saving assistance, it is much less effective in providing assistance to help people rebuild their lives after the 'emergency phase'.[131] In a context of recurrent climate-related disasters, this approach is unlikely to be effective. At the same time, the gap between response and reconstruction reminds us that the crises of climate change require coordinated responses, including: resilience; DRR; preparedness; early warning and early action; response and reconstruction.

FUNDING FOR CRISES CAUSED BY CLIMATE CHANGE

Current funding for climate-related crises is insufficient to meet needs. In addition to existing humanitarian funding, there is potential for developmental and climate funding to play a greater role, but neither currently targets the countries or people most vulnerable to climate-related emergencies. None of the three types of funding are particularly effective in reaching NGOs or civil society organisations in affected countries.

Funding was a theme which emerged consistently in the interviews conducted for this report. Two questions recurred in numerous interviews: how will the world pay for the increase in DRR, preparedness and response activities that climate change will require? And how can money be made available to the organisations and communities working on the front line of the response?

The funding situation for climate-related disasters is complicated, with different potential sources labelled in various – and often confusing – ways.[132] These potential sources can be differentiated by their objectives ('humanitarian' or 'development' funding, for example); by their mechanism (Bilateral government-to-government funds or Multilateral funds mediated by international organisations such as UN agencies or development banks); and by financing instrument (grants, loans, or insurance mechanisms). The categories overlap – development aid can be bilateral or multilateral, and in the form of grants or loans – and it can be difficult to track what type of funding, or how much funding, is going to any particular activity type, as donors have different definitions or categorisations of activities.[133] This makes it difficult for anyone, including donors, to get a clear overview of the funding situation for climate-related crises.[134]

HUMANITARIAN FUNDING

Humanitarian funding – which stood at $30.9 billion in 2020[135] – has never been sufficient to meet humanitarian needs and has hovered at around 60% of assessed requirements for the past decade.[136] It seems unlikely that

"It seems unlikely that humanitarian funding will be able to meet the massively increased needs caused by climate change"

“One particular challenge related to development financing is the form it takes: an increasing proportion of development finance is in the form of loans”

humanitarian funding will be able to meet the massively increased needs caused by climate change; it didn’t, for example, increase by enough to meet the needs caused by COVID-19 in 2020.[137]

Humanitarian funding is also, to a very large extent, spent on immediate response to crises, rather than on the resilience, DRR and preparedness activities that should be important parts of the overall strategy for climate disasters.[138] Some humanitarians feel that, given the constraints on resources, ‘life saving’ response should be prioritised for humanitarian funding over these other activities.[139] The short-term nature of most humanitarian funding also makes the implementation of resilience and DRR activities, which tend to take place over longer timeframes, difficult.[140]

Another shortcoming of humanitarian funding (albeit one that is shared by development and climate funding) is that a very small proportion goes directly to local organisations and frontline responders.[141] This is a major concern, given the broad consensus that the threat of climate change requires far greater acknowledgement of, and support to, these organisations and communities.

DEVELOPMENT FUNDING

Many of the responses to climate-related crises are developmental in nature: building the economic resilience of communities and protecting development gains through DRR, for example. And 70% of the Overseas Development Assistance that goes to countries experiencing crisis or disaster is in the form of development, rather than humanitarian, financing.[142] This means that development financing is available for, and has a critical role to play in, the response to climate-related crises in the countries where humanitarians work.

While the proportion of development funding that goes to states experiencing humanitarian crises has increased over the past decade,[143] this funding is often not directed to the parts of the country where the crises are occurring.[144] Nor is it directed to the portfolio of activities that are required to prepare for and respond to climate-related disasters. In general, programmatic areas such as DRR and preparedness receive relatively little development aid,[145] and, where they do, it is concentrated in a small number of countries which, while they may be at high risk of climate-related events, are not always the poorest or the most vulnerable.[146]

One particular challenge related to development financing is the form it takes: an increasing proportion of development finance is in the form of loans.[147] In countries experiencing crisis or disaster, this trend has been accelerated by the engagement of multilateral development banks, which have become important donors in many humanitarian contexts.[148] Governments in these countries may, understandably, be unwilling to invest these funds in defending the lives and livelihoods of the most vulnerable communities, as these activities are unlikely to produce significant financial returns.[149]

On a more positive note, development funding has been increasingly used to provide assistance to people affected by crises (including climate-related crises such as drought) through mechanisms such as ‘crisis modifiers’, which

allow a certain proportion of developmental programme funds to be reallocated in the event of a humanitarian emergency. This approach is generally evaluated as an effective way of using development money to address emergencies, although the modifiers tend to be limited in scale and duration.[150] Another use of developmental funding that has been evaluated positively is the World Bank's Crisis Window, which was commended by the World Bank Independent Evaluation Group for good project design and flexibility during implementation.[151]

CLIMATE FUNDING

A third potential source of funding to address climate-related crises is the climate financing to which states have committed under the UN Framework Convention on Climate Change. Climate finance could be particularly important in preparing for future crises because it is, in theory, more reliable than other sources.[152] Unlike humanitarian funding, which is discretionary (governments can choose whether to contribute and how much to provide), climate funding can be understood as a treaty obligation, based on collective commitments. The Convention recognises the responsibilities of all countries to address climate change on the basis of "common but differentiated responsibility and respective capacities"[153] In the case of richer countries, these respective capacities include the ability to provide financial assistance. However, as with humanitarian and development funding, there are currently constraints to the use of climate financing in addressing the humanitarian needs caused by climate change.

The first constraint is that the commitment by developed countries to mobilise $100 billion per year in climate finance by 2020 – which was made in 2009 – has not been met.[154] The original commitment that this should be "new and additional funding", over and above existing ODA, has also been dropped, and, as a result, funding that is being programmed is coming from existing development budgets. The total figure, if achieved, would still be totally insufficient to meet all climate-related needs,[155] and the majority of the funding that is available goes to actions to mitigate climate change (that is, to prevent increased global heating), rather than to actions to adapt to the effects of climate change (including the adaptations required to prepare for disasters and crises).[156] The Glasgow Climate Pact, which was the main output of the COP26 climate change negotiations in November 2021, recognises "with deep regret"[157] that the $100 billion target has not yet been met, and urges developed countries to "fully deliver"[158] this financing. It also emphasises the importance of "significantly increasing support for developing country Parties, beyond USD 100 billion per year".[159] It remains to be seen whether these statements will lead to significantly increased funding flows.

Looking at the finance that is available for adaptation – which often overlaps with DRR and preparedness – this funding does not, at the moment, go to the most vulnerable countries,[160] or to fragile states which are often less able to design and prepare the 'shovel ready' projects that are favoured by donors.[161] Existing mechanisms are also very focussed on large-scale expenditure through central governments; excluding many frontline organisations:[162] a point made by a number of interviewees, who see the funding as cumbersome, and not meeting real and identified needs.

Finally, adaptation financing as currently understood in the UNFCCC is not available to respond to humanitarian needs once a disaster occurs. In climate change terms, humanitarian response actions – addressing needs that can't be prevented through adaptation activities such as DRR – are thought of as 'loss and damage' activities. Within the UNFCCC, loss and damage issues are addressed by the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts; but despite calls from many delegates at COP25, which intensified at COP 26, this Loss and Damage Mechanism does not yet have a dedicated finance facility to fund response activities and compensate people and governments for loss. The Glasgow Climate Pact goes no further than urging developed countries and international organisations to "provide enhanced and additional support"[163] in the area of loss and damage. Again, it is not clear what

this will mean in practice. Overall, interviewees suggested that the talks around the topic of loss and damage are extremely politically contentious and progress slowly; a number of non-humanitarian interviewees were surprised that humanitarian actors did not seem to be engaged in the issue.

DISASTER RISK FINANCING

One area that has seen increased interest from the humanitarian community generally, and from humanitarians concerned about climate change in particular, is disaster risk financing. This is an approach that releases an agreed amount of funding in the event of a particular circumstance, such as a drought or flood, taking place, and so increases the predictability of funding and the speed at which funds are disbursed.[164]

Depending on the nature of the threat, and the way in which funding is structured, disaster risk financing can be released either before an event occurs or at the early stages of an event (after the failure of rains, but before the failed harvest season, for example) allowing anticipatory or early action, or it can be released when an event occurs, or after the event, to fund response or reconstruction activities.[165] As a result, it can be related to humanitarian, development or climate budgets.

The best known form of disaster risk financing is insurance: here, the likelihood of an event (such as a drought or flood) occurring is quantified, and this allows the insurer to sell the promise of a fixed payment in return for a specified premium. As the insurer is covering multiple clients against multiple risks (many of which will not come about) insurance allows any individual policy-holder to share their risk with other policy holders. With respect to climate-related crises, policies can be held by states[166] (as with the catastrophic risk insurance held by many Caribbean and Pacific islands against cyclones), by humanitarian actors on the behalf of states or vulnerable populations (such as the ARC replica fund held by the START Network for Senegal) or by individual households.

Insurance, of course, does not bring any new money into the system: rather, it smoothes out risk over time.[167] It also has some drawbacks in a world with a changing climate: as risks increase, particularly in certain areas, the market may not be prepared to bear the risk, and insurance may become either prohibitively expensive or unavailable.[168] In some situations development banks have made contingency funding available (that is, specific funds released on the basis of a specific trigger, but without the premium payment) where markets would not provide insurance.[169] Disaster risk finance, relying, as it does, on the ability to identify and quantify risk, is also not a good solution for the new or previously unusual types of risk that will arise in many areas as a result of climate change.[170] As such, disaster risk finance is a useful tool in the armoury against climate-related disasters, but it will not work always or everywhere, and may be best used as part of a layered approach to financing, which includes other financial tools.[171]

COOPERATION AND COLLABORATION

Responding to the crises of climate change requires a high level of collaboration between different humanitarian actors and between the humanitarian system and governments, civil society, academia and the private sector. This level of collaboration is not evident within the sector or between the sector and other stakeholder groups.

“as risks increase, insurance may become either prohibitively expensive or unavailable”

"Working across organisational boundaries will be central to an effective response to climate change."

Working across organisational boundaries will be central to an effective response to the humanitarian challenge of climate change. As outlined above, addressing humanitarian vulnerability and needs requires a portfolio of programmes that combines development, DRR, preparedness and response activities. In addition to the need to bridge the 'humanitarian development divide', interviewees suggested that the nature and scale of the threat can only be addressed by forging effective working relationships with actors outside the traditional sphere of 'disaster management': academia, civil society and the private sector. These relationships will differ depending on the context, and, in many cases, humanitarian actors will be in a supporting, rather than a lead role.

Unfortunately, one of the most common findings in the literature related to climate change and humanitarian action is that the field is fragmented, and that different organisations and groups work in 'silos'.[172] The humanitarian system itself is famously atomised, with different organisations competing for visibility and funding.[173] There are also long-standing divisions – enhanced by organisational and funding structures,[174] operational priorities,[175] procedures for programme assessment and design,[176] and cultural differences – between humanitarian and development organisations. Interviewees confirmed that these divisions existed both between, and in some cases within, organisations that they knew or worked with.

These divisions have been evident for many years, and there have been repeated systemic efforts to address them. Many of these efforts gained impetus after the 2016 World Humanitarian Summit. In particular, there has been work in two areas: the 'triple nexus', an approach that brings humanitarian, development and peace actors closer together at a country level to work towards joint outcomes; and localisation, which aims to ensure "more support and funding tools for local and national responders" to ensure that responses are "as local as possible"[177] (see also next section). While both areas can demonstrate some successes, neither have yet led to broad systemic change.[178] Further progress in both will be an important component of improving the response to climate-related crises.

Within – and beyond – the humanitarian system there are many inter-organisational platforms, networks and alliances addressing issues related to climate change. Interviewees were enthusiastic about, and actively engaged in, many of these groups. Typically, they are focussed on a specific approach to climate change (climate-change mitigation and environmental impact; early action and anticipatory programming; or community-based resilience) or on a specific climate threat (such as heatwaves or floods). In 2021 there have also been two inter-organisational activities looking more holistically at climate change and humanitarian action: the IASC Results Group 3 on advocacy produced a common narrative on climate change, and the ICRC/IFRC and ICVA produced a climate and environment charter for humanitarian organisations, which at the time of writing has been signed by over 100 NGOs. Almost all interviewees suggested that there would be value in attempting to build further coordination and joint action around climate-related crises,[179] with some suggesting that the charter could form an organising structure for joint action. Key themes in the interviews were that any joint initiative should be inclusive of different types of stakeholder beyond the 'usual' humanitarian actors, and fully representative of and jointly led by actors from the global south.

MOVING FORWARD

CAMERON PEAK FIRE, COLORADO, Signal Mountain, Colorado, USA, Oct 14, 2020, PlanetScope
The Cameron Peak Fire in the Rocky Mountains west of Denver, Colorado grew about 28,000 acres (11,000 hectares) on October 14, 2020. Long streams of smoke stretching towards the east (left to right)—evidence of the high winds that drove the fire's expansion—were captured that morning by a Dove satellite.

CHANGES IN DISASTER MANAGEMENT AND HUMANITARIAN ACTION

If the humanitarian system is to help address climate-related crises, it has to change in terms of WHO provides aid and WHEN, WHERE and HOW aid is provided. International humanitarians will need to play a more limited, supporting role, while local civil-society groups take on more leadership. Humanitarians will also need to be better at acting before crises, better at responding to crises that are less predictable or that evolve in unexpected ways, and better prepared for crises to be more geographically spread – in both low- and high-income countries.

Climate change will change both the scale and the nature of disasters and crises, with profound effects on many areas of disaster management and humanitarian response. There is an emerging consensus in both interviews and the literature that the world's disaster management systems – including the humanitarian system – will have to make a series of significant transformations to meet the challenges of climate change. These will involve changes to who responds, where, when and how.

With respect to the *who*: there is nothing new in calls to involve people affected by crisis in the design and implementation of responses.[180] Over the past decade, however, there has been increasing recognition of the role and agency of individuals and communities in responding to 'their' emergency. The scale of the climate threat and, in some places, the almost perpetual nature of disasters are beyond the ability of external agents to address: international agencies will not be able to deploy everywhere, all the time. In many cases, they will also be challenged by a lack of access because of conflict, or because the infrastructure they rely on has been swept away. Climate-related crises cannot be solved from outside. Nor can they be solved exclusively by the governments of affected states: while government has a key role to play in creating structures, setting direction and allocating resources, COVID-19 has demonstrated the importance of individual behaviour and of civil society organisations in crisis response. The crises of climate change will require a 'whole of society' approach, with a greater role being taken by civil society.[181]

Climate change will also mean that disasters become more widespread and occur in places where they have not done so previously. The IPCC forecasts that hot extremes will increase in 41 of 44 geographic zones around the world, and heavy precipitation in 19 – in both cases, many G20 countries will be affected.[182] Richer countries will experience more disasters in the form of flooding, wildfires and heatwaves, which can be expected to cause serious damage, despite increased investment in adaptation activities.[183] What this will mean for the global pattern of disaster management and response is not yet clear. It may disrupt existing flows of funding (with more being spent on domestic disasters in wealthy countries, and less going on ODA). It may also reroute skills transfers, with a greater recognition of the experience and expertise of organisations in the global south in dealing with the effects of climate change.

As we have seen, humanitarian actors expect that they (or their development partners) will need to change *when* they act: increasing the

"The crises of climate change will require a 'whole of society' approach, with a greater role being taken by civil society."

“Action beats policy. The focus of any work should be in catalysing action on the ground”

emphasis on activities that take place before disasters strike, rather than focussing exclusively on responding once a disaster has occurred.[184] In the first instance, this transition requires much more research and evidence into ‘what works’.[185] In the longer term, it will mean a rethinking of skills and procedures across the humanitarian sector.

Finally, the lack of certainty around climate-related crises – the fact that they are occurring in conditions that have not existed previously and so may be hard to forecast or model – has implications for *how* humanitarian agencies work. In order to respond to the unexpected, or to adapt responses as circumstances change, response agencies will need to develop much greater levels of agility than they currently possess. This will require changes to mindsets, but also to funding, information management, procurement and HR approaches.[186]

Any one of these transformations would be significant. Taken together, they are a huge shift for governments, disaster-management and civil-defence agencies and for the international humanitarian system. They will require changes at all levels in all organisations.

THE APPROACH TO CHANGE

The humanitarian system needs to make major transformations in a very short time. But it has repeatedly shown itself to be resistant to change. To make the changes required, it will need to abandon the ‘top-down’, policy-led approaches that it has used in the past and focus instead on funding, structures and – critically – action on the ground.

The humanitarian system has proved itself to be resistant to change: despite widespread and vocal support for change in many areas, movement has tended to be slow and piecemeal.[187]

It is entirely possible that the inability to change in the face of climate-related disasters will lead to the existing humanitarian system being ‘overwhelmed’ and replaced by alternative models for addressing crises. In the last five years, bilateral agreements around refugees, the engagement of international development banks in conflict situations and increased involvement of states such as China in disaster contexts have all offered alternative models to that of ‘traditional’ humanitarianism.[188]

At the same time, the humanitarian system does have experience of being changed by external forces: information technology and New Public Management approaches, for example, have had transformational (if not always positive) impacts on the sector.[189] There have also been some limited successes for changes that were initiated by the sector itself, such as coordination and the use of cash.[190] These offer lessons that may be useful if the humanitarian system wishes to transition and become part of new architectures for addressing disasters and crises. Interviewees also provided a fairly consistent set of ideas as to how their organisations and the wider system could most effectively change.

The first lesson is that funding is important. Attempts to address the challenges of climate-related crises will only be taken seriously in many agencies if leaders believe that donor funding (public or private) is available. As current funding structures and approaches are often siloed and work against effective, locally-led, ‘portfolio’

approaches to climate disasters, donor structures and processes may need to change if the climate challenge is to be effectively addressed.

The second lesson is that action beats policy. Most interviewees were clear that the focus of any work should be in catalysing action on the ground, working to transmit the lessons of this action, and scaling up what works. Policy is important, but it should be built on experience, and not the other way around. Policy activities should focus in the first instance on those areas that have a direct influence on operations. For some interviewees, the Sphere standards and CHS were good examples of this sort of operation-oriented policy work.

The third lesson – and the one that was most frequently repeated in interviews and in the two consultations held in 2020 – is that existing structures (and particularly existing power structures) will generally recreate the status quo, rather than creating something new. Any joint initiatives should go beyond the existing humanitarian sector to include other stakeholders: government agencies, development actors, civil society groups and academics. New people at the table create new conversations and new possibilities, as well as helping humanitarians better appreciate their (possibly quite marginal) place in the bigger picture. Authority and decision-making should be broader than at present, with more people from the global south, women and young people in leading roles.

The fourth lesson is to avoid silos and competition, and to build on what already exists. As noted above, current approaches are sometimes presented in competition with one another (anticipation as an alternative to response, for example) when they are, in fact, complementary. Similarly, it is important that climate issues are not seen as a specialised or peripheral silo in humanitarian action, with a set of policies and guidelines that are 'bolted on'; or even as a threat to the 'real work' of humanitarians. Climate change does not mean that all other drivers of crisis are going to disappear. It does mean that the core work of humanitarian actors is going to increase, and in some cases look very different. Given this, many changes can best be achieved by supporting, working with and bringing together existing improvement and change initiatives.

AREAS FOR COMMON ACTION

Climate change creates a new reality for humanitarians. Changes will be required at all levels of the global disaster response architecture and in all organisations. Many of the changes required are already happening. Beyond these, interviewees for this report identified broader, sector-wide activities that can support transformation. The activities fall in seven areas: bringing organisations together across silos; raising awareness of the issue and possible responses in the humanitarian system; utilising the knowledge of frontline responders, and making knowledge available to them; integrating climate issues into humanitarian strategy and planning; advocating for more funding; making funds available to national and local organisations for climate-related response; and supporting change-management activities.

"it is important that climate issues are not seen as a specialised or peripheral silo in humanitarian action"

Climate change creates a new landscape of disasters and crises. It will require change at all levels of the global disaster response architecture, and in all organisations. Many of the changes that are required (greater localisation, for example, or better early warning) are already the focus of collaborative action across and beyond the humanitarian system. These efforts become doubly important in the context of a changing climate.

In addition to these efforts, the great majority of experts and practitioners interviewed for this study believe that there is a role for common and collaborative action around climate change and emergencies. When asked for concrete examples of the sort of collaborative action that would be helpful to them in preparing for the crises of climate change, interviewees – while recognising the difficulty of identifying any actions that would be sufficient to the scale of the challenge – suggested the following areas and activities:

1. Convening. Providing space for the organisations, platforms and alliances doing work related to climate change and humanitarian/emergency response to come together in a formal and structured way, allowing more opportunities for them to envisage how their work connects, and providing support to initiatives such as the climate and environment charter and the localisation agenda. Activities might include roundtables and open invitation meetings.
2. Awareness raising. Raising the issue of climate change among humanitarian and NDMA staff and decision-makers, and outlining approaches that they can take to address the issue. Activities to raise awareness might include:

- Development of a short film, or series of short films
- Development of training materials for inclusion in existing leadership development activities
- Identifying and providing speakers for annual planning/strategy meetings.

3. Knowledge management. Identifying knowledge gaps and needs, identifying knowledge of 'what works' from existing programmes, 'translating' scientific knowledge to be more accessible to humanitarian and NDMA staff, and providing expert knowledge to assist programme development. Some interviewees were sceptical about this type of activity, and particularly about the use of websites and online libraries, and of 'global' information that might not be relevant in any specific location. They emphasised the importance of person-to-person information exchange and a strong operational focus. Knowledge management activities might include:

- After-action reviews – in particular by civil society organisations and NDMAs – to reflect on activities and capture learning
- Peer-learning activities between organisations engaged in climate-change related disaster programming
- Synthesis and 'translation' of research – possibly on a regular (monthly?) basis
- A helpdesk function, where smaller organisations could access expertise to support programme design.

4. Planning. Supporting planning and strategy-development exercises to help them consider the potential impact of climate change on emergency strategies and plans. These activities might include:

- Development and use of approaches to support NDMA/local government contingency planning
- Development and use of approaches to consider climate in broader 'triple nexus' planning exercises
- Development and use of scenarios and table-top exercises to help international organisations consider how to include climate concerns in strategy and planning.

5. Advocacy. Joint advocacy, particularly around the financing of climate-change related disaster programming, and the allocation of financing to frontline organisations.

6. Funding for implementation. Provision of financial and technical support to organisations developing or scaling up climate-change related disaster programming –with a focus on national and local government and civil society organisations.
7. Change-management support. Provision of change-management expertise to support organisational and systemic programmes of change related to climate change. These activities might include:

- Development and provision of change-management training for staff in disaster-management organisations
- Maintenance of a roster of change-management professionals
- Funding specific change-management activities.

The PREPARE initiative intends to work with partners to support and implement these activities.

ANNEX 1 - NOTES

[1] The wording is from UN General Assembly Resolution 46/182, which is the effective basis of international humanitarian action (United Nations, 1991).

[2] A more comprehensive definition is given by ALNAP: “the network of interconnected institutional and operational entities that receive funds directly or indirectly from public donors and private sources to enhance, support or substitute for in country responses in the provision of humanitarian assistance and protection to a population in a crisis” (ALNAP, 2018, p.31).

[3] In this report, the term ‘natural’ disaster is used to refer to the effects of natural events related to weather – floods, heatwaves, tropical storms, etc. The term ‘crisis’ is generally used for humanitarian situations involving conflict and large-scale migration. The two are differentiated, because while there is a fairly clear causal relationship between climate and ‘natural’ disasters, the relationship between climate, conflict and migration is less clear. To prevent continual repetition of ‘crisis’ and ‘disaster’, the two types of emergency are sometimes referred to as ‘crises of climate change’. Many readers will object to the term ‘natural’ in respect of disasters, as very few disasters are actually caused exclusively by natural events: the event may have natural causes, but the degree to which people are affected by an event is largely determined by the other human factors that make these people vulnerable. However, ‘natural disaster’ is an expression commonly understood to denote the type of disaster that is specifically related to climate change, and so the term is used here, in quotation marks.

[4] IPCC, 2021.

[5] Dunn et al., 2021.

[6] IPCC, 2021.

[7] IPCC, 2021.

[8] IPCC, 2021.

[9] Ibid

[10] Ibid, note that this is over land: “Globally averaged precipitation over land has likely increased since 1950, with a faster rate of increase since the 1980s (medium confidence): The frequency and intensity of heavy precipitation events have increased since the 1950s over most land area for which observational data are sufficient for trend analysis” (IPCC, 2021).

[11] Allen et al., 2012.

[12] IPCC 2021 “It is likely that the global proportion of major (Category 3–5) tropical cyclone occurrence has increased over the last four decades” (IPCC, 2021).

[13] IPCC, 2021.

[14] IPCC, 2014.

[15] IPCC, 2014.

[16] Romanello et al., 2021.

[17] Lancet: “human populations are concentrated in the areas most exposed to warming, experiencing a mean summer temperature change that is four times higher than the global average” (Watts et al., 2019).

[18] Jones, Matthew W. et al., 2020.

[19] Romanello et al., 2021.

[20] Delfino et al., 2009; Künzli et al., 2006.

[21] Romanello et al., 2021. Note though that while the increasing trend is statistically significant, the latest IPCC report suggests only medium confidence in the finding that human influence has led to compound flooding in some locations.

[22] Romanello et al., 2021.

[23] IPCC, 2014.

[24] IPCC 2021 notes "Human-induced climate change has contributed to increases in agricultural and ecological droughts in some regions due to increased land evapotranspiration (medium confidence)".

[25] Brown & Funk, 2008; El Bilali et al., 2020.

[26] IPCC, 2014, 2021; Romanello et al., 2021.

[27] For examples, see de Geoffroy et al., 2021.

[28] Peters, 2020, p. 23 also Jayawardhan, 2017; McAdam, 2014; Warren et al., 2018.

[29] ICRC, 2020.

[30] Biermann & Boas, 2010; Bronen et al., 2018; Selby & Daoust, 2021.

[31] Which considered high and medium quality academic journal articles, plus expert studies by climate change and migration research organisations and by development and non-governmental organisations (Selby & Daoust, 2021).

[32] Selby & Daoust, 2021, p.58.

[33] UNDRR, 2019.

[34] Pandey, 2017 in IASC, 2021, p. 21.

[35] Selby & Daoust, 2021.

[36] "Among our pathways, long-term climatic and related changes potentially have the largest and most wide-ranging implications for migration. However, we have identified no studies of global climate change-induced sea-level rise affecting present-day migration levels, though coastal hazards (e.g. flooding, erosion, storm surges, salinisation) do contribute to migration pressures. Only a small number of studies examine existing impacts of long-term temperature and precipitation changes on migration." (Selby & Daoust, 2021, p.ii)

[37] Bronen et al., 2018; ICRC, 2020; Jayawardhan, 2017; Selby & Daoust, 2021.

[38] Selby & Daoust, 2021.

[39] Biermann & Boas, 2010; IPCC, 2014; Romanello et al., 2021.

[40] Stern, 2007.

[41] Clement et al., 2021.

[42] IPCC, 2014.

[43] Hsiang et al., 2013.

[44] Bodhi Global Analysis Ltd, 2021; ICRC, 2020; IPCC, 2014; Peters, 2020.

[45] ICRC, 2020; IPCC, 2014; Poole et al., 2020.

[46] ALNAP, 2018.

[47] ICRC, 2020; IPCC, 2014; UNDRR, 2019; Wagner & Jamie, 2020.

[48] According to the World Bank list of Fragile and Conflict Affected situations, FY 2022 (World Bank, 2021).

[49] By humanitarian expenditure – the three countries are: Yemen, DRC and Somalia (Development Initiatives, 2021a)

[50] Of 22 countries, 9 are in the bottom 20% for *exposure* to climate change; 14 are in the bottom 20% of the ND Gain index for *vulnerability* to the effects of climate change (a combination of exposure, sensitivity to this exposure and ability to adapt) and 19 are in the bottom 20% of the *overall* ND Gain Index (which combines vulnerability with the ability to leverage investment and use it for adaptation). The ICRC report presents these data slightly differently: "sixty per cent of the twenty countries considered to be most vulnerable to climate change, by the ND-Gain Index, are sites of armed conflict" (ICRC, 2021, p. 5).

[51] IPCC, 2021, p.33.

[52] Johnstone & Mazo, 2011; Werrell et al., 2013.

[53] While there were many successes in the global response to COVID-19, the pandemic also showed up shortcomings in preparedness actions in many states (in the UK see UK Parliament, 2021; in the USA see Applebaum, 2020; Lewis, 2021; in the EU see Applebaum, 2020; in India see Chetterje, 2020), and in the ability to model

the course of the pandemic and the impact it would have on populations (Egeland, 2020). In many cases, these shortcoming may not have been a result of technical failures, but more of the ability to model extremely complex and dynamic events: an over-confidence on what modelling can achieve.

[54] IPCC, 2014.

[55] 22 of the 36 countries that form the bottom 20% of the ND Gain index for exposure are identified as 'low income'. A further 8 countries are lower middle income. See also Dicker, 2021.

[56] IPCC, 2021.

[57] Clarke & Cruz, 2015; IPCC, 2021.

[58] Allen et al., 2012.

[59] Poole et al., 2020.

[60] Dalrymple & Swithern, 2019; Diwakar, 2019; Jayawardhan, 2017.

[61] Levine & Venton, 2019.

[62] IFRC, 2019.

[63] Partly because of the difficulty of modelling very complex events with very few previous examples from which to extrapolate (see Allen et al., 2012; Tanner et al., 2019) and partly because much will depend on the success of actions taken to stop global heating and to make people less vulnerable to the effects of climate change (IPCC, 2014; Romanello et al., 2021).

[64] The Red Cross Climate Centre was established in 2002

[65] Newsprint coverage of climate change has increased significantly since 2018 – while still remaining significantly lower than it was in 2010 (Boykoff et al., 2021). People in many G20 economies are significantly more concerned about the effects of climate change than they were in 2015 (Bell et al., 2021).

[66] Including Bodhi Global Analysis Ltd, 2021; ICRC, 2020; IFRC, 2020; UKMED et al., 2021.

[67] IASC, 2021.

[68] IASC, 2021b

[69] ICRC, 2021.

[70] An observation that also occurs in the literature: INCAF, 2021.

[71] See for example: IASC, 2021; ICRC, 2021.

[72] IASC, 2021; IFRC, 2020.

[73] Dalrymple & Swithern, 2019; Jaime & Harris, 2019; Klausen et al., 2019; START, 2020, p. 10; Taylor et al., 2017; UNEG Humanitarian Evaluation Interest Group, 2018; Zahmore, 2019.

[74] See for example: IASC, 2021; IFRC, 2020; Tanner et al., 2019.

[75] Allen et al., 2012; Dicker, 2021; Jaime & Harris, 2019; Tanner et al., 2019.

[76] These programmes are not necessarily related to shocks resulting from climate change, but are more general in scope (ALNAP, 2018; Zahmore, 2019).

[77] Zahmore, 2019.

[78] IFRC, 2020; Zahmore, 2019.

[79] Bodhi Global Analysis Ltd, 2021; Dalrymple & Swithern, 2019; DFID, 2011; Zahmore, 2019.

[80] DFID, 2011; Sterret, 2015; WFP & Oxfam, 2016; Zamora et al., 2017.

[81] WFP & Oxfam, 2016.

[82] ALNAP, 2018; Klausen et al., 2019; Levine & Venton, 2019; UNEG Humanitarian Evaluation Interest Group, 2018.

[83] ALNAP, 2018; UNEG Humanitarian Evaluation Interest Group, 2018.

[84] Levine & Venton, 2019.

[85] Allen et al., 2012; Dalrymple & Swithern, 2019; Eriksen et al., 2017; ICRC, 2020; Levine & Venton, 2019; Madajewicz et al., 2013; Sterret, 2015.

[86] Dicker, 2021; ICRC, 2020; Levine & Venton, 2019; UNEG Humanitarian Evaluation Interest Group, 2018.

[87] Diwakar, 2019.

[88] ALNAP, 2018; Dalrymple & Hanssen, 2020; UNDRR, 2019.

[89] ICRC, 2020; IFRC, 2020; UNEG Humanitarian Evaluation Interest Group, 2018.

[90] Diwakar, 2019; IFRC, 2020; Levine & Venton, 2019; Peters, 2020; Zahmore, 2019.

[91] ICRC, 2020; Jayawardhan, 2017; Levine & Venton, 2019; Maharjan et al., 2020; Nguyen Viet Khoa, 2012.

[92] Murphy et al., 2017.

[93] Eg: Nguyen Viet Khoa, 2012.

[94] Eg: Bawakyillenuo et al., 2016; Bhatta & Aggarwal, 2016; Kabir, Cramb, et al., 2017; Kabir, Alauddin, et al., 2017; Kattumuri et al., 2017.

[95] Bhatta & Aggarwal, 2016; Hess et al., 2018.

[96] ALNAP, 2018; DFID, 2011; Dicker, 2021; Peters, 2020.

[97] UNEG Humanitarian Evaluation Interest Group, 2018.

[98] ALNAP, 2018; Peters, 2020; UNDRR, 2019.

[99] Bhatta & Aggarwal, 2016; ICRC, 2020; Motsholapheko et al., 2011; UNEG Humanitarian Evaluation Interest Group, 2018; WFP & Oxfam, 2016.

[100] IFRC, 2020.

[101] IASC, 2018.

[102] Meerkat et al., 2015; Weingärtner et al., 2020.

[103] ALNAP, 2018.

[104] ALNAP, 2018.

[105] Meerkat et al., 2015.

[106] ALNAP, 2018.

[107] Training was seen to be successful in a number of evaluations: Arab European Foundation for Consulting & Training AEF, 2015; IFRC, 2019, 2021a, 2021b; Low et al., 2019; Sarsycki, 2019.

[108] IFRC, 2019; Low et al., 2019; Medway et al., 2020; Sterret, 2015.

[109] Low et al., 2019; Medway et al., 2020; Sarsycki, 2019.

[110] Knox Clarke & Darcy, 2014; Maxwell & Hailey, 2020; Wagner & Jamie, 2020.

[111] ALNAP, 2018; Gros et al., 2019.

[112] Buchanan Smith & Davies, 1995; Hillier & Dempsey, 2012; Levine et al., 2011; Maxwell & Hailey, 2020. While many of the worst examples of failing to respond to EW information are now a decade or so old, the problem has not gone away (Inter-Agency Humanitarian Evaluation, 2019).

[113] IFRC, 2020; Willitts-King et al., 2020.

[114] Tanner et al., 2019; Weingärtner et al., 2020.

[115] Weingärtner et al., 2020; Willitts-King et al., 2020.

[116] ALNAP, 2018.

[117] Harris & Cardenes, 2020; Maxwell & Hailey, 2020; Nyirenda, 2019.

[118] Concern Worldwide, 2017; Feeny, 2017; Gros et al., 2019; Harris & Cardenes, 2020; International Crisis Group, 2016; Tanner et al., 2019; WFP, 2016; Willitts-King et al., 2020.

[119] Feeny, 2017; Gros et al., 2019; Harris & Cardenes, 2020; Knox Clarke & Darcy, 2014; Maxwell & Hailey, 2020.

[120] Maxwell & Hailey, 2020; START, 2020.

[121] ALNAP, 2018; Baker et al., 2020; Inter-Agency Humanitarian Evaluation, 2019.

[122] ALNAP, 2018; Inter-Agency Humanitarian Evaluation, 2019.

[123] ALNAP, 2018.

[124] ALNAP, 2018; Baker et al., 2020.

[125] ALNAP, 2018.

[126] ALNAP, 2018.

[127] ALNAP, 2018; Metcalfe-Hough et al., 2021.

[128] ALNAP, 2018; Charter4Change, 2017; CHS Alliance, 2020; Metcalfe-Hough et al., 2021.

[129] ALNAP, 2018. At the time of writing, it is still too early to assess humanitarian performance in the COVID-19 pandemic.

[130] Obrecht, 2019.

[131] ALNAP, 2018; Baker et al., 2020; Inter-Agency Humanitarian Evaluation, 2019.

[132] Peters, 2020; Poole et al., 2020.

[133] IFRC, 2020.

[134] Jaime & Harris, 2019.

[135] Development Initiatives, 2021a.

[136] Ibid.

[137] Ibid.

[138] Zahmore, 2019.

[139] Taylor et al., 2017.

[140] UNEG Humanitarian Evaluation Interest Group, 2018; Zahmore, 2019– although the proportion of multi-year funding has increased over the past 5 years, and is now 42% of the total (Development Initiatives, 2021a).

[141] 3.2% in 2020 (Development Initiatives, 2021a) The amounts for other funding (climate and development) may however be even lower than this.

[142] Development Initiatives, 2021a.

[143] Development Initiatives, 2021a.

[144] Inter-Agency Humanitarian Evaluation, 2019.

[145] Development Initiatives, 2021a; Dicker, 2021; High-Level Panel on Humanitarian Financing, 2016.Note, however, that the tracking of funding for DRR is poor, and so any figures for how much is spent on DRR will be very approximate.

[146] Development Initiatives, 2021a.

[147] Development Initiatives, 2021b.

[148] Development Initiatives, 2021a.

[149] INCAF, 2021; Poole et al., 2020; Zahmore, 2019.

[150] Dunning, 2020; Inter-Agency Humanitarian Evaluation, 2019.

[151] World Bank, 2019.

[152] Betzold & Weiler, 2018.

[153] United Nations Framework Convention on Climate Change, article 3(1) (UNFCCC, 1992).

[154] Bhattacharya et al., 2020 – which also discusses methodological difficulties in determining whether the target has been met.

[155] Ibid

[156] Alcayna, 2020; Betzold & Weiler, 2018; IFRC, 2020; INCAF, 2021.

[157] UNFCCC, 2021

[158] Ibid

[159] Ibid

[160] IFRC, 2020.

[161] IFRC, 2020.

[162] IFRC, 2020.

[163] UNFCCC, 2021

[164] Willitts-King et al., 2020.

[165] Ibid

[166] In which case they are known as macro insurance – insurance held by individual household is known as micro insurance

[167] Willitts-King et al., 2020.

[168] IPCC, 2014.

[169] Zahmore, 2019.

[170] Poole et al., 2020.

[171] INCAF, 2021.

[172] Dalrymple & Hanssen, 2020; Eriksen et al., 2017; IFRC, 2020; Inter-Agency Humanitarian Evaluation, 2019; IPCC, 2014; Klausen et al., 2019; UNEG Humanitarian Evaluation Interest Group, 2018; Zahmore, 2019.

[173] Barnett & Weiss, 2008; Cooley & Ron, 2002; Cottle & Nolan, 2007; Lancet, 2010; Pallas & Guidero, 2016; Ramalingam & Barnett, 2010.

[174] IFRC, 2020; Poole et al., 2020; UNEG Humanitarian Evaluation Interest Group, 2018; Zahmore, 2019.

[175] Alcayna, 2020; Inter-Agency Humanitarian Evaluation, 2019; Poole et al., 2020; Taylor et al., 2017; Zahmore, 2019.

[176] Klausen et al., 2019; Peters, 2020; Poole et al., 2020; Taylor et al., 2017; Willitts-King et al., 2020; Zahmore, 2019.

[177] UN OCHA, 2016.

[178] Development Initiatives, 2021a; Metcalfe-Hough et al., 2021; Zahmore, 2019.

[179] This was also the conclusion of another research programme by UK Med, HCRI, DEC and Save the Children (UK).

[180] See for example: Harrell-Bond, 1986.

[181] IASC, 2021; ICRC, 2021.

[182] IPCC, 2021.

[183] Hsiang et al., 2017; Lamperti et al., 2019. Government source: Smith, 2021.

[184] IASC, 2021; ICRC, 2021.

[185] de Geoffroy et al., 2021.

[186] Obrecht, 2019.

[187] CHS Alliance, 2020; Knox Clarke, 2017; Metcalfe-Hough et al., 2021; Steets et al., 2016. The Ethiopia Drought evaluation gives a good example of failure to change, despite repeated identification of the changes required, at the operational level (Inter-Agency Humanitarian Evaluation, 2019).

[188] ALNAP, 2018.

[189] Knox Clarke, 2017.

[190] For more on the specific lessons from these and other humanitarian change programmes see Knox Clarke, 2017.

ANNEX 2 - METHODOLOGY

The document review started with a review of the first 200 returns on Google scholar using the tags ("climate change" AND "humanitarian") AND (Strateg* OR Policy OR Financ* OR fund*) with date: 2010–2021. Documents were included where they: related to disasters (hazard events affecting multiple people at one time) that affected human lives and/or livelihoods; had an evaluative component or presented lessons; and provided a full explanation of the methodology used. Twenty-six documents met these criteria. However, a large number of these (15) related to issues of migration, and had been written before the creation of the 2016 Global Compact for Migration. As a result, much of the argument in these documents had been overtaken by events, and so these documents were also excluded. This left eleven documents for review.

The author then conducted a number of secondary searches: In the ALNAP HELP database, using the search parameters: Resource type - 'Evaluation reports' &' Research, reports and studies'; Date – January 2016 to present; Tags; climate. This search returned 23 results, of which seven included a statement of methodology, and so were included for review. The author also looked in the evaluation databases of organisations that had been associated with climate-change programming in the initial literature review. In the WFP evaluation database, filtering by topics 'Climate: Climate change adaptation' and 'Climate: R4 Rural resilience initiative', returned four results which were included for review. In the FAO database, none of the results using the search term 'climate change' were related to humanitarian response. In the IFRC database, the option of searching for evaluations related to climate change was not available.

Next, recognizing that the majority of actions undertaken by humanitarian organisations related to climate change involved resilience programming, DRR, early warning/early action and anticipatory programming, the author undertook a third round of database searches to find examples of evaluations or research that related to these forms of programming in situations which might be related to climate change (particularly floods and droughts). In the ALNAP HELP database, the search Resource Type: 'Evaluation reports'; Tags: 'early warning'; 'DRR'; 'Disaster preparedness'; 'Humanitarian Development Peace Nexus'; 'Resilience'; Dates: January 2016 to present returned 157 results, of which all those addressing multiple countries (16) were included in the review. Searches of the IFRC database using the terms 'Disaster Preparedness' and 'Disaster Risk Reduction' for the same dates returned 12 responses. The author chose four of these (every third result) for inclusion in the review.

'Snowball' searches, using the bibliographies of selected documents, and searches of specific websites (such as Start Network and the Centre for Disaster Protection) provided another 110 documents that met the inclusion criteria and were included in the review. The total number of documents reviewed was 152.

For the interviews, the author and colleagues determined key stakeholder groups who should be represented. These were: UN agencies engaged in humanitarian action; Red Cross/ Crescent organisation; INGOs engaged in

humanitarian action; national/local civil society groups engaged in humanitarian action; National Disaster Management Agencies; academics; and civil society groups engaged in climate-change related activities. The aim of the interviews was to have each group represented by three or more interviewees, and to aim for broadly equal representation of 'northern' and 'southern' organisations. For UN agencies and INGOs, the author and colleagues attempted to speak both the 'headquarters' and 'operational' staff, and to interviewees who specialised in issues of climate change, as well as 'generalist' humanitarian leaders and decision-makers. Within this broad outline, the author largely used a convenience sample of individuals known through previous professional association, individuals referred by this first group, and individuals identified and contacted through LinkedIn. Less than 10% of those contacted declined to be interviewed. A full list of interviewees is given in Annex 3.

ANNEX 3 - INTERVIEWEES

The following experts kindly gave their time to be interviewed for this report:

Aliocha Salagnac, Knowledge Management Specialist, WASH Cluster

Amir Khouzam, Policy Advisor, ICRC

Anaïs Rouveyrol, Pacific Community Advisor for Disaster Risk Management and Community Resilience

Anastasia Maylinda, Information and Communication Manager, YAKKUM Emergency Unit

Andrea H. Cameron, Climate and Environment Policy Advisor, the Pentagon, US Department of Defense

Andrew Harper, UNHCR Special Advisor on Climate Action

Arnell Capili, Deputy Executive Director, the ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre)

Ben Webster, Head of Secretariat, Risk Informed Early Action Partnership, IFRC

Bernard McCaul, Acting Director Programmes, Goal Ireland

Bhupendra Mishra, Founder, The Resilient Foundation

Bob Kitchen, Emergency Response Director, IRC

Jon Brause, Director World Food Program (WFP) Washington Liaison Office

Brian Willet, Planetary Health Coordinator, MSF

Carol Devine, Project Team Lead Climate Smart MSF

Catherine-Lune Grayson, Policy Advisor, ICRC

Cristina Colon, Policy Specialist Environment at UNICEF

David Wightwick, CEO, UK-Med

Edward Kallon, UN Resident Coordinator, Nigeria

Elizabeth Riley, Executive Director (ag) Caribbean Disaster Emergency Management Agency

Erin Sikorsky, Center for Climate and Security

Fergus Thomas, Risk Finance Lead, Centre for Disaster Protection

Gemma Connell, Head of Regional Office for Southern and Eastern Africa at UNOCHA

George Biddle, Chair, World Connect

Gernot Laganda, Chief, Climate and Disaster Risk Reduction WFP

Hansjoerg Strohmeyer, Chief of Policy Branch, OCHA

Harjeet Singh, Senior Advisor, Climate Action Network International

Heeta Lakhami, Focal Point for UNFCCC constituency of Youth Non-Governmental Organizations

Hugh Macleman, Progamme Specialist, Triple Nexus, UNDP

Hugo Slim, Senior Research Fellow, Las Casas Institute for Social Justice, Blackfriars Hall, University of Oxford

Ilan Kelman, Professor of Disasters and Health, Institute for Risk & Disaster Reduction, University College London

Irfan Ullah, Focal Point for Loss and Damage, UN Major group for Children and Youth

Jen Stephens, Disaster Risk and Climate Change Specialist, UNICEF

Jeong Park, Disaster Management Advisor,

AusAid

Jo de Serrano, CEO, RedR UK

John Conger, Director, Center for Climate and Security

Jon Galbraith, Climate Lead, Centre for Disaster Protection

Joshua Amponsem, Executive Director, Green Africa Youth Organisation

Kathleen Newland, Co-Founder MPI

Kaiser Rejve, Humanitarian Director, CARE Bangladesh

Adessou Kossivi Nevaeme, Regional Coordinator West, Central and North Africa, GNDR

Krishna Krishnamurthy, Climate and Vulnerability Analyst, WFP

Lachlan Mciver, Planetary Health Adviser, MSF

Lamin Siadylamin, Regional Disaster Coordinator North Bank Region, National Disaster Management Agency, The Gambia

Loretta Hieber Girardet, Chief Risk Knowledge, Monitoring and Capacity Development, UNDRR

Karen MacClune , Executive Director, ISET-International

Kenneth MacClune, Climate Change Specialist, USAID

Madara Hettiarachchi, Director of Programmes & Accountability, Disasters Emergency Committee

Manu Gupta, Director, SEEDS India

Marie Claire Graf, Focal Point UNFCCC constituency of Youth Non-Governmental Organizations

Mary Pack, Vice President, International Medical Corps

Mattias Soderberg, Chief Advisor, DanChurchAid; Co-Chair of the Climate Change Group, ACT Alliance

Matthew Carter, Humanitarian Director, CAFOD

Meritxell Relano, Deputy Director Office of Emergency Programmes, UNICEF

Mihir Bhatt, Director, All India Disaster Mitigation Institute

Muhamed Dubow Shurie, Emergency Specialist, UNICEF

Monica Ramos, Global Coordinator, WASH Cluster

Jimmy Nadapdap, Country Director, World Vision Solomon Islands

Nimo Hassan, Director, Somalia NGO Consortium

Nishanie Jayamaha, Learning and Programme Coordinator, ICVA

Oenone Chadburn, Head of Humanitarian and Resilience, Tearfund

Pablo Medina, Deputy Global Coordinator, Shelter Cluster

Regina 'Nannette' Antequisa, Executive Director, Ecoweb

Rick Brennan, Regional Emergency Director (MENA) WHO

Sajilu Kamwendo, Strategy, Evidence and Learning Director, World Vision West Africa Region

Sangeeta Chowdhry, Global Fund for Women

Erin Sikorsky, Deputy Director, Center for Climate and Security

Shama Mall, Deputy Regional Director Programs & Organizational Development, Community World Service Asia

Liam Sharp, Disaster READY Coordinator & Operations Manager, Australian Humanitarian Partnership

Simon Addison, Principal Researcher, Climate Finance and Governance, IIED

Sophie Garde Thomle, Deputy Director Operations and Advocacy division, Chief of Branch West and Central Africa, OCHA

Takeshi Komino, Secretary General, Asia Disaster Risk Reduction Network

Tara Clerkin, Senior Coordinator: Agriculture, Climate, and Partnerships, IRC

Tasneem Essop, Executive Director, Climate Action Network International

Veronique De Geoffroy, Directrice Generale, Groupe URD

Zenabou Segda, Founder, Women Environmental Program, Burkina Faso

Zia Choudhury, UN Resident Coordinator, Botswana

Zlatan Milisic, UN Resident Coordinator, Tanzania

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