HEALTH AND CLIMATE CHANGE

TAKING CARE OF HUMANKIND AT +2°

HISTORY - FACTS - FIGURES - SOLUTIONS

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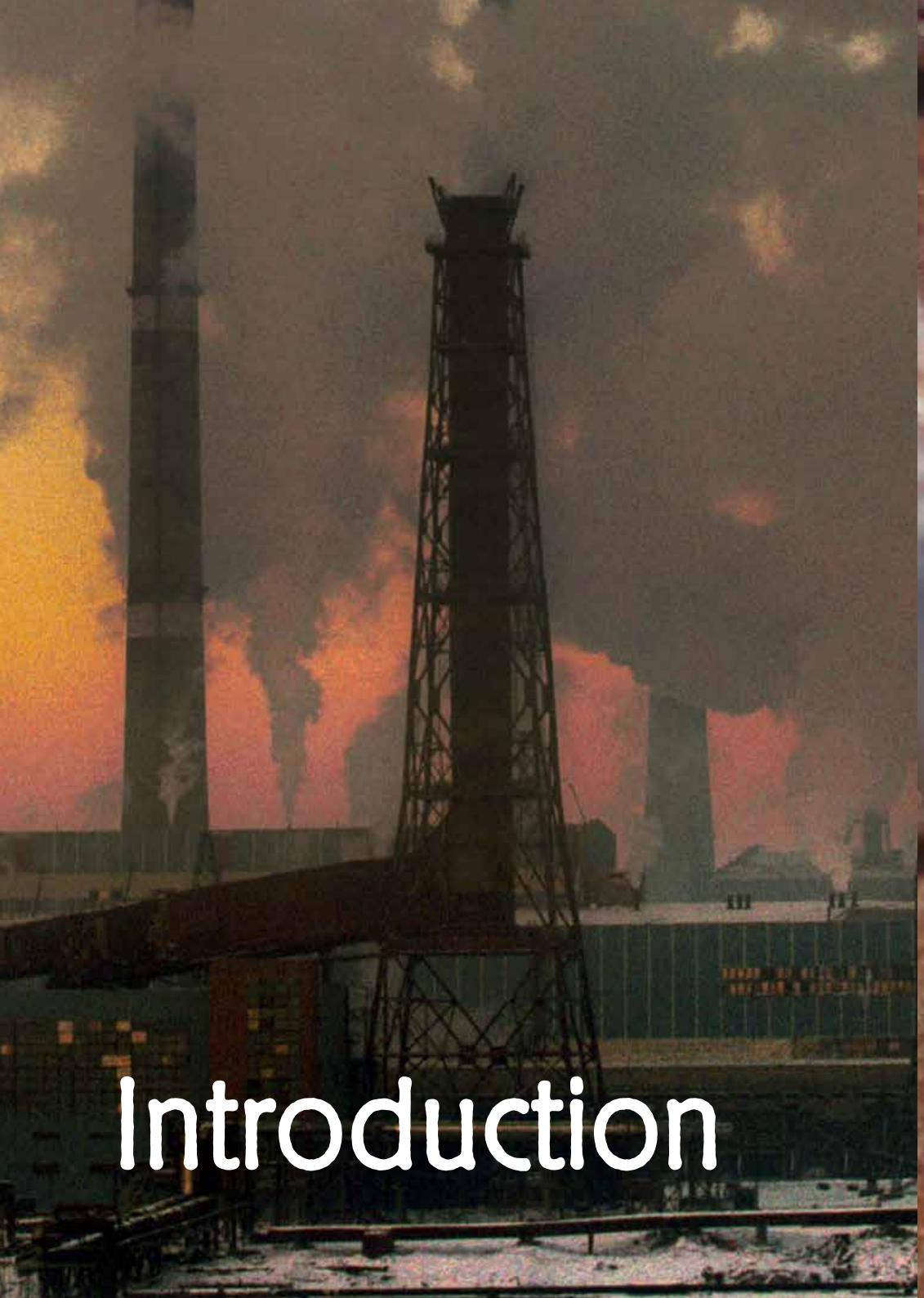
Table of contents



Introduction

Yet Another Climate Report? No!

This document is neither a scientific report, a symposium report, nor a new alert. It is not an operational guide or a presentation of good practices from the five continents. Or rather, it is a bit of each of these, all at once.

It is designed for all those who want to understand the links between climate and health, and who want to know how to mitigate the health consequences of climate change. It contains figures, examples of concrete actions, good practices and recommendations to address the greatest public health challenge of the 21st century.

The issue of climate change and its consequences occupies a large part of the global agenda. At various levels from one continent to another and as the political landscape shifts, humans are increasingly aware of the threat their lifestyles pose to their own future and that of their ecosystem.

As usual, the most fragile and vulnerable people are the first and the most affected. The specific issue of health consequences is not yet sufficiently addressed.

“This call, we will highlight it and bring it to all national and international institutions; it will be the cornerstone of our mobilization in order to bring awareness of the population’s health into account in this climatic crisis, which is just beginning.”

Stephane Remael@LaCompany

Excerpt from the closing speech of Professor JEAN-JACQUES ELEDJAM, President of the French Red Cross, Cannes, 16 April 2019.

This document, originally published in French, has been translated into English, Spanish and Arabic. You can find the different versions on the website https://worldconference.croix-rouge.fr

1919 – 2019: Rising to the challenges of one's century

In 1919, the world was recovering from four years of deadly war, yet, the number of casualties was much lower than that of the "Spanish" flu epidemic that was rampant in all continents.

The Red Cross National Committees, each operating in its own territory, were completely overwhelmed. At the beginning of 1919, typhus broke out in Poland and threatened to spread to Europe.

The Red Cross could not remain inactive, and, Henry Davison, then chairman of the American committee, called on all National Committees to come together and form an international Red Cross organisation in peacetime, in order to coordinate their operations as best they could to combat the future epidemic.

To this end, he convened an international medical conference in Cannes from 1 to 11 April, with the support of the French, British, Italian and Japanese committees.

The conference was a great success, both in terms of the quality of its participants – the elite of the international medical profession (at least of the victorious nations) was present – and for its unanimous and ambitious conclusions.

It was at that conference that a Health Bureau was established as a prelude to the World Health Organisation, and when it emerged that there was an urgent need for a body to coordinate Red Cross committees to act in peacetime. "It is up to us to build something, not for the present, but for all times," said Henry Davison on that occasion.

100 years later, health emergency is different but still present. The need to coordinate the National Red Cross and Red Crescent Societies was undeniable. As, while epidemics were the greatest public health challenge of the first half of the 20th century, they only make up a tiny fraction of the 21st century health consequences of climate change.

2019 was the warmest year ever recorded.

2019, a year marked by heatwaves in Europe, India and Pakistan, forest fires in the Amazon, floods in North America, Hurricane Dorian in the Bahamas, and Hurricane Idai in Mozambique and Zimbabwe. 2019, a year of citizen mobilisations and COP 25 in Madrid. 2019, the year of the World Conference on "Health and Climate Change" hosted in Cannes by the French Red Cross, attended by representatives from more than 70 countries.

Climate change: what exactly is it about?

Our planet has already recorded global warming by about 1°C above pre-industrial levels (1850-1900). This warming is attributed to greenhouse gas emissions from the human activities developed since industrialisation: energy, industry, transport, agriculture, housing, waste, etc. By keeping up the current rate of emissions, it is likely that a 1.5°C global warming above pre-industrial levels will be reached between 2030 and 2052.[1]

These degree decimals are paramount. Indeed, the Paris Climate Agreement, which was adopted at COP 21 by almost all countries in the world, commits its signatories to contain "the rise in the average temperature of the planet well below 2°C above pre-industrial levels and [to pursue] efforts to limit the temperature rise to 1.5°C above pre-industrial levels, on the understanding that this would significantly reduce the risks and effects of climate change."[2]

The differences between 1.5°C and 2°C are significant and even alarming: increases in average temperatures on land and in the oceans, extreme temperatures, heavy rains or severe droughts depending on the region. These consequences are called climate change. They lead to many imbalances not only affecting human health, but also biodiversity, livelihoods and economic growth.

"The health effects of climate change are unacceptable, unequivocal and are being experienced by everyone around the world today. No one is safe."

NICK WATTS, Executive Director of Lancet Countdown: Tracking Progress on Health and Climate Change

FOCUS

WORD CONFERENCE ON HEALTH AND CLIMATE CHANGE: "TAKING CARE OF HUMANKIND AT +2°C"

In 1919, the Red Crosses of Japan, the United States, Italy, Great Britain and France met in Cannes to prepare a response to the great challenges of the 20th century, and to launch the International Federation of Red Cross and Red Crescent Societies, which is now the world's leading humanitarian movement.

100 years later - to the day - 70 countries gathered at the initiative of the French Red Cross to respond to the greatest public health challenge of the 21st century under the topic "Health and Climate Change: Taking Care of Humankind at +2°C."

At the premises of the founding conference of 1919, more than 80 high-level speakers from all walks of life - political leaders, scientists, academics, field humanitarian operators, entrepreneurs, young leaders of the future, members of the International Red Cross and Red Crescent Movement - shared their perspectives and compared their knowledge over 12 conferences covering topics as diverse as urban heatwaves, mental health, epidemics, population movements, food insecurity, ecosystem protection, etc.

More than 500 participants from 70 countries came to understand, discuss and propose concrete and innovative solutions.

This first "humanitarian COP" made it possible to highlight the singular initiative of the Red Cross and its partners, based on ideas that are as simple as they are essential and actions that are concrete as they are urgent.

This document recaps the main ideas developed at the World Conference. All content is available on the dedicated website: worldconference.croix-rouge.fr

How are climate change and health connected?

This document uses the World Health Organisation (WHO) definition of health: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity." There are three identified types of impacts of climate change on human health:

> Direct health consequences
The consequences of climate change can cause direct harm to the physical or mental integrity of individuals. Indeed, the gradual rise in temperatures or the increased occurrence of extreme weather or climatic events often takes a heavy toll on human lives, in addition to causing anxiety, as well as a number of psychological disorders.

> Indirect health consequences
Climate change also contributes to the deterioration of the health conditions in which people live, by altering the quality of breathing air, the quality of water absorbed or by altering the spatial and temporal nature of areas conducive to pathogens (bacteria, disease vectors, allergenic pollen, etc.).

> Consequences on the social, economic and environmental determinants of health
Climate change has multiple implications for the social, economic and environmental determinants of health: crop and fishery yields, population nutrition, migration, conflict, health system resilience, etc. For example, recurring droughts can negatively affect crop yields. In addition to the nutritional concerns induced by inadequate food quality or quantity, farmers' incomes are reduced and the risks of migration or conflict are exacerbated.

Climate change thus contributes to a vicious cycle of vulnerabilities. Not only are the consequences of climate change more severe for the most vulnerable populations, but they are also an additional cause of vulnerability.

In all these causal relationships, it is difficult to isolate the share attributable solely to climate change. Their effects are compounded by a large number of individual, societal and environmental factors that influence each other. The links between climate and health are complex and therefore need to be better understood.

"To reduce the likelihood that the impacts of climate change will seriously affect our health, we need to set up effective adaptation mechanisms and reduce greenhouse gas emissions."

SIR ANDY HAINES, Professor of Environmental Change and Public Health at the London School of Hygiene and Tropical Medicine

The difference between mitigation and adaptation

There are two approaches to tackling climate change. The first is mitigation, aimed at reducing or deleting the causes of climate change, mainly greenhouse gas emissions. The second is adaptation, aimed at adapting to the consequences of climate change. Simply put, "moving from car to bike" is a mitigation measure and "building a dyke" is an adaptation measure. These two approaches complement each other, as we need to mitigate the causes of climate change to reduce its future impacts, and we also need to adapt to the present and future consequences of climate change.

Why is this urgent?

The Intergovernmental Panel on Climate Change (IPCC) worked on the differences in implications between 1.5°C and 2°C warming in a special report in October 2018.[3] It demonstrates that the consequences of climate change are not proportional to global warming: every additional tenth of a degree exacerbates them further. In addition, every additional tenth of a degree diminishes populations' capacity for adaptation. The conclusion is clear: it is critical to act to contain global warming below 1.5°C.

While we are alarmed about the seriousness of the potential future consequences, we are saying that it is not too late to act. From a mitigation perspective, time is running out: we have less than 10 years, at the current greenhouse gas emission rate, to have a 50% chance of containing warming below 1.5°C. From an adaptation perspective, the needs are already apparent with each new climate event and will increase in the coming years.

The title of this document "Taking Care of Humankind at +2°C" is more provocative than defeatist. However, a +2°C scenario is not acceptable and would have devastating consequences. Indeed, such a scenario cannot be ruled out and each day of inaction brings us a little closer to it. Humanitarian operators have a duty to prepare themselves and to prepare populations for all contingencies.

What can the International Red Cross and Red Crescent Movement contribute?

The consequences of climate change are an additional source of vulnerability and particularly affect already vulnerable people. This double penalty often leads to an accumulation of social and environmental inequalities, leading to injustice.

Today, the International Red Cross and Red Crescent Movement has the means to continue to act, in its capacity as a key player in addressing the consequences of climate change. The strength of its network, its health skills and its day-to-day proximity to populations make it a major player in adapting to the health consequences of climate change.

> **"The [Red Cross and Red Crescent] Movement has a crucial role to play in increasing the resilience of populations and health systems with regard to climate change effects."**
>
> **DIARMID CAMPBELL-LENDRUM, World Health Organisation (WHO)**

This document contains very specific recommendations for immediate action. They are not intended for a specialist audience, but concern everyone. Researchers, humanitarian operators, health professionals, elected officials, public servants, financiers, advertisers, philosophers, volunteers, teachers, artists, parents, and so forth, this document is for you, because we need all the goodwill to build a healthier and fairer world, in which everyone's voice matters.

1 - IPCC, *Global warming of 1.5°C*, 2018.

2 - UNFCCC, *Paris Climate Agreement.*

3 - IPCC, *Global warming of 1.5°C, op. cit.*

FIRST PART

Climate Change: from Awareness to Action

A Brief History of Global Awareness

The early stages

In the late 19th century, climate variation was barely addressed among learned circles and societies, with the exception of the natural variation ascribed to the main established climate cycles associated with the celestial mechanics of our planet.

It was in 1861, in the era of steam engines, that English scientist John Tyndall applied Joseph Fournier's greenhouse effect theory and, for the first time, he noted with concern a change in climate due to variations in the amount of water vapour and CO_2.

A decade later, the World Meteorological Organisation (WMO) was established to study weather and climate.

But it took almost a century for a scientific study published by Syukuro Manabe and Richard Wetherald in Atmospheric in 1967, to highlight the threat of global warming through a model of higher CO_2 amounts and its consequences on global temperature. The publication - which was mentioned very seriously in the McNamara report of the same year while predicting a temperature rise of more than 2°C before the end of the century and considering it the greatest threat to come - was voted the most important ever publication on climate change by the Intergovernmental Panel on Climate Change (IPCC).

Initial thoughts and concerns about the environment

In 1971, the Massachusetts Institute of Technology (MIT) and the Royal Swedish Academy of Sciences co-hosted a conference on the effects of human activities on climate, and invited 30 leading scientists to speak on the subject. This was the first manifestation of man's concern about climate, which gave rise to various movements and schools of thought that were qualified as environmentalists at the time. The eminence of the authors of the conclusions of the event led the international community to adopt a serious outlook on the effects of environmental damage.

It is in this context that the United Nations held - in June 1972 - the United Nations Conference on the Human Environment, which led to the establishment of the United Nations Environment Programme (UNEP), and placed environmental issues on the global agenda. The conference, which was titled "One Earth," was the first in a series of "Earth Summits," the most famous of which was held in Rio in 1992.

Thus, from the 1970s onwards, WMO and UNEP laid the first scientific foundations designed to achieve more general political awareness

Scientific and political awareness

Scientists' warning and the creation of the IPCC

The scientific conferences held in Stockholm in 1974, Villach in 1980 and 1985, and Toronto in 1988, were a major step forward in that they were organised by specialised bodies, such as WMO, UNEP and the International Council of Scientific Unions (ICSU), bringing together the most renowned scientific experts, but presenting their findings to government representatives. These events should be given credit for placing climate change on the political agenda for the first time.

Still, it is also as a result of these conferences that the Intergovernmental Panel on Climate Change (IPCC)

was established in 1988, reflecting a joint commitment by WMO and UNEP to establish an intergovernmental mechanism to assess the climate change knowledge base, to propose adaptations to forecasted climate disruptions and measures to mitigate the changes.

A year earlier, in 1987, the Brundtland report "Our Common Future," commissioned by the United Nations General Assembly, expressed the need to mainstream environmental concerns into all government sectoral policies.

The international community had become aware of the climate threat and the IPCC stepped up its alert by publishing its first reports as early as 1990, not only highlighting evidence of global warming, but also quantifying - using increasingly efficient digital tools - the characteristics of climate change and clearly highlighting the anthropogenic dimension of the changes as well as the urgency of the situation.

The 1992 Earth Summit: a strong political commitment

The involvement of States became apparent and effective at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. Known as the "Earth Summit," the conference brings together 120 heads of state, eminent scientists and many representatives of civil society, with the ultimate pledge to combat climate change. Four documents were signed following the Rio Declaration, including a Framework Convention on Climate Change.

The text, which was ratified by more than 160 governments, has the "ultimate goal [...] to stabilise [...] greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system [...] within a sufficient period of time [...]"[1]

In order to enforce the resolutions, the text called for the establishment of a Conference of the Parties (COP) to meet annually in order to consider and take the necessary measures to implement the Convention and the ensuing texts.

The COPs: from the Kyoto Protocol to the Paris Agreement, a mixed review

The first COP took place in 1995 in Berlin, but it is the 1997 COP in Kyoto that is noteworthy given the

framework convention that was subsequently signed by 196 parties, whose aim was to reduce greenhouse gases individually or in groups of countries until 2012. Despite tough political and economic negotiations, rather modest results and questionable effectiveness, the Kyoto Protocol - whose modalities had been addressed since 1992 - was a major political turning point: the international community realised that the climate issue had a universal dimension, going beyond "classic" opposition and conflict between governments.

The following COPs registered mixed results.

2015 and its COP 21 marked another significant turning point with the Paris Agreement: 195 countries adopted the first-ever legally binding universal climate agreement, demonstrating universal awareness of the inevitable consequences of climate change and the urgency to act. However, more than three years after its adoption, only seventeen countries have actually implemented concrete and ambitious actions to achieve the required goals. The Agreement is therefore difficult to implement, especially as the United States announced its withdrawal from the Agreement just over a year after signing it, while Australia announced in August 2018 that it was no longer going to include greenhouse gas reduction in its legislation.

Global evidence

While events around the climate issue were up to then aimed at an informed political or scientific public, the 1990s and 2000s saw the emergence civil society involvement with the issue.

Increasing media coverage of climate issues

This was the case with the Toronto conference in 1988, which, for the first time ever, convened industry-sector figures, media personalities and environmental NGOs around government and scientific representatives, and thus received substantial media exposure, reinforced by the meteorological context at the time (a particularly hot summer in North America).

The Earth Summit in Rio in 1992, the largest gathering of world leaders and with considerable civil society representation (more than 1,500 NGOs), broke all media records and led to the globalisation of environmental and climate concerns.

The third world climate conference - in Geneva in 2009 (after the 1979 and 1990 conferences during which advancements in climate change knowledge was assessed) - was organised particularly due to the scale of media coverage and its impact on the public, so as to create a general framework linking scientific knowledge and society needs.

Owing to the annually held Conferences of the Parties, the increasing number of forums on climate-related issues, the publication of IPCC reports and the involvement of NGOs - particularly environmental NGOs - in international negotiations, there is widespread media coverage of climate change and its consequences, amplified by social networks.

Climate threat affects everyone and it is a danger to peace

The global awareness (literary books, films and documentaries - *An Inconvenient Truth* by Al Gore, Oscar winner in 2006) was such that in 2007, the IPCC and Al Gore were awarded the Nobel Peace Prize, making the fight against climate change an essential element for world peace.

Citizens embrace the issue

Media personalities are now involved, the general public is mobilising efforts, striving to change its way of life, reacting, making its voice heard and taking to the streets given the slow pace of negotiations and implementation of concrete actions.

We are currently witnessing mass movement mostly based in Western countries, with people taking to the streets and reaching out to governments to implement ecological and social measures commensurate with the climate challenge effects, going as far as taking legal action against the government, in France for example, "to respect its climate commitments and protect lives, regions and everyone's rights. It is the Issue of the Century."[2] In the Netherlands, Colombia and Pakistan, citizens' collectives have also referred matters to the courts in order to raise the greenhouse gas reduction targets, to raise awareness on the need to act against deforestation and to protect the climate, or to urge the government to adopt climate legislation that respects the fundamental rights of all.

On the African continent, which is responsible for only 4% of global greenhouse gas emissions while 65% of the African population is considered to be directly affected by climate change,[3] mobilisation is being organized with, for instance, the One Planet Summit held in Nairobi in March 2019 which is expected to make a difference.

Humanitarian Operators' Response to the Climate Threat

A problem first reserved for environmental NGOs

NGOs mainly focused on environmental protection

The earliest so-called "scholarly" environmental non-governmental organisations emerged in the late 19th century and early 20th century, following the first events held by scientific networks and scholarly communities, featuring a science-based "conservationist" discourse (Les Amis de la Nature, the International Union for Conservation of Nature - IUCN, the World Wildlife Fund - WWF).

It was not until the second half of the 20th century - in the 1960s and 1970s - that we witnessed the emergence of so-called "activist" dissenting environmental NGOs, heirs to the social movements of that period, and who were seeking to venture into the political arena (Greenpeace, Friends of the Earth).

The climate issue was not yet in the limelight, and the NGOs kept to environmental conservation issues, such as biodiversity, endangered species or nuclear power.

The establishment of joint, substantial climate action

However, from the end of the 1980s onwards, environmental NGOs became aware of and tackled the climate issue, making it one of their priorities. Scholarly and activist NGOs reviewed their action repertoire, joined forces, coordinated and adopted a joint strategy by creating Climate Action Network International (CAN-I).

Environmental NGOs became involved in the preparatory stages of major climate change conferences and influenced international agreement negotiations.

The media relayed their messages extensively and their member numbers rose consistently.

Environmental NGOs were therefore clearly identified as the natural representatives of civil society with regard to addressing climate issues.

Humanitarian operators on the back burner

Humanitarian operators were confined to emergency and relief operations by public opinion and the media, but also within their own organisations. The contrast between the urgency of saving lives facing immediate danger, the need for quick action to assist populations and the slowly changing climate, whose effects are more or less evident in the long-term, encouraged these operators to stand back from the climate issue.

This self-imposed image that they portray to the public, coupled with the fear of blurring the messages they wish to convey, delayed their awareness of the climate issue and contributed to keeping environmental NGOs at the forefront of the issue.

A gradual awareness in the early 2000s

1999: The turning point

It is the 1999 World Disaster Report of the International Federation of Red Cross and Red Crescent Societies (IFRC) that truly linked, for the first time, humanitarian action, natural disasters and climate change.

The messages were clear: climate change is a reality; climate change is causing an increasing number of disasters; the disasters are now more complex and widespread; the people affected by these climate-enhanced natural disasters are the most vulnerable populations.

Climate change thus overwhelmed humanitarian operators' capacities and rendered their work more difficult.

The issue of adaptation to climate change - although viewed by some as only a potential risk, or even a matter of scientific debate - was beginning to take shape among humanitarian operators.

However, only a few of them were really tackling the climate issue.

The first climate actions among humanitarian operators

From an early stage, Anglo-Saxon NGOs (Oxfam, CARE, Save the Children) recognised a link between climate change and their work, and were genuinely concerned.

As early as 1983, Oxfam had already published a briefing paper titled "Weather Alert," which documented the human impacts of climate anomalies on their programmes around the world. The Oxfam International Confederation was also present and active during the 1992 negotiations in Rio. Subsequently, Oxfam fully integrated climate change adaptation into its programmes.

For its part, CARE has been working on the impacts of climate change since 2002. It was from the perspective of the impact of these changes on the livelihoods of the poorest and most vulnerable that the association approached the issue initially. CARE's Bengali branch has been a pioneer in this area by promoting different approaches to community-based adaptation from 2002 to 2005. Today, CARE has taken a step further by endowing itself with its own platform on climate change and resilience.

2009 World Humanitarian Forum: climate change as a humanitarian crisis

In 2009, the World Humanitarian Forum, whose objective was to measure the human impact of climate change, published an alarming report, which, for the first time ever, focused on the human consequences of climate change (health, economic, societal consequences). The report stated that, to date, climate change was causing more than 300,000 deaths worldwide each year, and that by 2030 this number could reach half a million. 325 million people are affected by climate change, and the number is expected to more than double in 20 years and account for 10% of the world's population.[4]

We were witnessing the emergence of the greatest humanitarian challenge for the coming years, and Kofi Annan, who chaired the Forum, has called on governments to increase aid to poor countries by a factor of 100 to limit the looming major humanitarian

crisis. In order to increase funding for aid programmes, conventional institutional donors now provide funding on condition that operators account for climate change in their response.

Climate awareness by the International Red Cross and Red Crescent Movement

Prior to 1999, like most humanitarian operators, the International Red Cross and Red Crescent Movement viewed climate change as a secondary concern.

The 1999 IFRC World Disasters Report

The publication of the IFRC *World Disasters Report* in 1999 and the subsequent International Conference of the Red Cross and Red Crescent marked a major turning point in terms of integrating climate change into Red Cross/Red Crescent policies and actions.

The report shows "how environmental change and the lack of human vision have combined to cause disasters [and underlines the concern arising from] the chronic and increasing vulnerability of poor countries to recurrent extreme weather conditions."[5]

A few weeks later, the President of the International Federation of Red Cross and Red Crescent Societies, Dr. Astrid Heiberg, delivered an eye-opening speech at the 27th International Conference.

Recalling the findings of the report, Astrid Heiberg alerted the Movement to the alarming predictions

of climate-induced natural disasters, the vulnerable populations severely affected by the phenomena, and the complexity of future humanitarian work.

But even then, the President of IFRC steered clear of mere declarations and sought to examine the actions that had been undertaken and provide solutions through greater focus on upstream investments to avoid loss of life and wasting donor funds.

Astrid Heiberg stressed the need for forecasting and preparedness, especially at the local level, stressing the essential role played by Red Cross and Red Crescent volunteers.

The launch of the Climate Centre

In 2002, the IFRC Climate Centre was established to help the International Red Cross and Red Crescent Movement and its partners reduce the impacts of climate change and extreme weather events on vulnerable populations. The Climate Centre supports the National Societies, and thus local level volunteers, by informing them about the climate and its consequences, with a particular view to disaster preparedness and response, but also with regard to food security, health and training.

This allows the Movement to move beyond the exclusive sphere of natural disasters and to take into account climate change and its humanitarian consequences as a whole.

The climate issue before international statutory bodies

In 2007, the 30th International Conference of the Red Cross and Red Crescent adopted a resolution highlighting the increased commitment of the Movement and governments to address the humanitarian consequences of environmental decline and climate change.

The members of the International Red Cross and Red Crescent Movement then continued to mainstream climate change into their policies and actions, including by adopting several other relevant resolutions at international statutory meetings, as concerns population movements, disaster preparedness and management, conflict, innovation and, more broadly, their strategic vision.

In 2017, the IFRC published its *Framework for Climate Action Towards 2020*, indicating how it will have to adjust to the changing scientific, political and operational landscape, and strengthen its role and contribution to tackling climate change.

Today, the International Red Cross and Red Crescent Movement no longer questions whether climate change should be taken into account in its mandate and missions, but rather how it can respond to the humanitarian consequences of climate change.

The Humanitarian Response: the Example of the Red Cross and the Red Crescent

192 National Societies currently make up the International Federation of Red Cross and Red Crescent Societies (IFRC). Drawing on its awareness of the humanitarian impact of climate change on its work and the potential impact of its actions on the climate, IFRC is now involved with adaptation and mitigation while providing appropriate advocacy.

Adaptation in the IFRC

The adaptation actions of IFRC and the National Red Cross and Red Crescent Societies aim to increase the resilience of communities and better prepare them for the impacts of climate change now and in the years to come.

Adaptation begins with a better knowledge and understanding of the risks involved. To this end, the Climate Centre is committed to strengthening the capacities of National Societies to understand and anticipate existing and future risks. A series of tools (online courses, training kits, games) have thus been developed on disaster risk reduction. National Societies rely on communities (mothers, young people, etc.) to disseminate the information.

Since climate change is not a separate risk from the usual intervention contexts but an additional and determining factor, the traditional activities of the Red Cross and Red Crescent remain relevant as long as they are sensitive to climate risks and respond to or prepare for climate-related shocks and stresses, sometimes using innovative methods.

National Societies' actions to adapt to climate change thus affect the following aspects:

> Disaster risk reduction

Beyond disaster risk education programmes, disaster risk reduction actions often coincide with adaptation and mitigation measures in that the solutions established, in addition to protecting people from a potential climate risk, can also contribute to addressing the causes of climate change. In Vietnam, for example, the Vietnamese and Danish Red Cross have planted nearly 9,000 hectares of mangrove to combat flooding since the late 1990s.

In addition, the Red Cross and Red Crescent are developing early warning systems based on weather forecasts. The French Red Cross has adopted this approach to combating drought in Niger.

> Disaster management

"A disaster should no longer be a trauma but an episode that we learn to manage on a daily basis and whose social outcome is that of resilience and stronger humanity."[6]

With the increasing number of natural disasters caused by climatic hazards, the National Red Cross and Red Crescent Societies have become experts in responding to these events. This is the case with the Regional Intervention Platforms of the French Red Cross, which serve as instruments for preventing and responding to natural disasters. These professionally-trained emergency response units are endowed with complementary physical and logistical capabilities integrated into the relief chain, and are ready for rapid deployment for effective action. Based in high-risk areas (Indian Ocean, Caribbean and South Pacific), the platforms are activated in coordination with IFRC and the International Committee of the Red Cross (ICRC).

> Construction of shelters

IFRC has developed a Participatory Approach for Safe Shelter Awareness (PASSA), which aims to raise awareness of the fragile nature of certain built environments and the everyday environmental risks they may face, and to foster locally appropriate safe shelter and settlement practices. The British Red Cross, for example, used this methodology during a reconstruction programme in the Delmas 19 neighbourhood of Port-au-Prince.

> Livelihoods

As weather phenomena usually affect people's livelihoods

(food crops, livestock breeding, fishing, etc.), the Red Cross and Red Crescent implement projects to restore livelihoods to those affected. To this effect, in 2005, the East Timor Red Cross helped the village of Manumera, which was facing increasingly recurrent droughts, to develop new irrigation systems and to cultivate more resilient seeds.

> Health

There are numerous adaptation actions in the field of health as they relate to health in a broader sense (physical, mental and social well-being). Thus, actions implemented by the Red Cross and Red Crescent range from first aid to psychological support, treatment of epidemics, strengthening health systems and prevention. For example, in Haiti, the Canadian Red Cross built a new provincial hospital and restored four rural health centres following Hurricane Matthew.

> Water, sanitation and hygiene

As lack of water and/or water pollution due to extreme weather events can result in serious consequences for affected populations, the Red Cross and Red Crescent set up solutions to ensure access to safe drinking water and proper hygiene. For example, in 2005, the Myanmar Red Cross established a programme for access to water and sanitation in Myanmar's dry area.

Mitigation in the IFRC

While helping vulnerable populations cope with weather and climate risks is an essential part of the mandate of National Societies, it is also within their competence and in their interest as humanitarian operators to avoid such future risks by minimising their environmental impact.

Acting by fostering environment-friendly behaviour and activities

The territorial and local presence of the Red Cross and Red Crescent is a tremendous asset for fostering climate-friendly behaviour in communities, particularly by limiting carbon emissions. National Societies have a long tradition and great expertise in the field of education and awareness-raising and, with the help of experts, they reach out to local populations - who are themselves victims of climate change - for example, by encouraging them to plant and maintain trees, to manage their waste in the best possible way, and to use renewable energy. To this effect, the Cook Islands Red Cross works with students by hosting workshops on climate change mitigation. In Bangladesh, the Red Crescent is raising community awareness of the risks and consequences of using wood for cooking, both in terms of carbon emissions and deforestation.

Acting while reducing the environmental impact of Red Cross/Red Crescent activities

IFRC and National Societies themselves examine their own behaviour and the impact of their activities. To this effect, they seek to reduce their carbon footprint in the field and within their own headquarters. This is the case, for example, of the IFRC secretariat, which has rebuilt its headquarters to the highest environmental standards. This is also the case for National Societies, such as the French Red Cross, which have adopted an OSR (Organisational Social Responsibility) policy which, echoing the Brundtland report of 1987, defines an action plan that meets the needs of the present without compromising the ability of future generations to meet their own needs, i.e., to control its impacts on society, better respect the environment, be economically viable and make the link between the economic, social and environmental dimensions on a more or less long-term basis.

A collective of National Societies has also set up what is referred to as a "Green Response." This approach aims to minimise the negative environmental effects of emergency operations and to increase accountability to the affected population by actively promoting alternative solutions that are less harmful to the environment.

Red Cross Red Crescent advocacy

With the establishment of the Climate Centre, IFRC and its 192 National Societies have been engaged in "climate" advocacy for about two decades to attract the attention of policymakers, institutional donors and their partners.

Advocacy at the heart of humanitarian diplomacy

This advocacy work is part of broader humanitarian diplomacy that aims to persuade policymakers and opinion leaders to act, at all times, in the interests of vulnerable populations and in accordance with fundamental humanitarian principles.

Together, they have ventured into United Nations forums, COPs, regional organisations and national forums.

Clear messages

The main messages relayed by the Red Cross and Red Crescent are as follows:
> Reach the most vulnerable to climate change, while ensuring that their needs are taken into account in global and national decisions, policies and plans, through consultation and integration of affected communities.
> Increase funding for adaptation and resilience in conjunction with funding to reduce greenhouse gas emissions.

> Ensure that local stakeholders can play a role in climate action, including by promoting decentralised, equitable, transparent and accountable disbursement of climate finance.
> Implement integrated risk management approaches to build resilience by integrating disaster risk reduction, climate change adaptation and ecosystem management into laws, policies, plans and investment decisions.[7]

Red Cross/Red Crescent operators getting involved

As a consequence, the IFRC Secretary-General promoted the need for early warning and early action in the event of extreme weather events at the World Humanitarian Summit; the Director of the Red Cross and Red Crescent Climate Centre addressed the United Nations General Assembly and called on the various stakeholders to build bridges between humanitarian, development and climate agendas; the IFRC Assistant Secretary-General for Operations highlighted the need to combine mitigation and adaptation actions to achieve real impact at COP 24; the IFRC Secretary-General reiterated the need for funding to implement adaptation measures at the Climate Meeting in Abu Dhabi, etc.

National Societies are also making their voices heard, such as the Secretary-General of the South Sudan Red Cross who made a strong appeal in October 2017 for more localised risk reduction measures, or a volunteer of the Kiribati Red Cross who appealed for better collaborative efforts, planet-wide, at COP 23 in Germany, or the President of the French Red Cross, Professor Jean-Jacques Eledjam who, on 15 April 2019 in Cannes, spoke to an international audience: “We must promote the emergence of a human right to a healthy environment given the magnitude of the consequences of climate change. We must build this climate diplomacy that will enable us to account for human rights in adaptation measures.”

National Societies are also involved at the national level to try to influence their governments’ policies. This advocacy not only contributes to raising the profile of IFRC and National Societies in terms of climate action, but, above all, serves to highlight the voice and needs of the most vulnerable, whose everyday vulnerabilities and difficulties are exacerbated by climate change.

1 - *United Nations Framework Convention on Climate Change, 1992.*

2 - laffairedusiecle.net

3 - oneplanetsummit.fr

4 - *Human Impact Report: Climate Change - The Anatomy of a Silent Crisis,* Geneva, The Global Humanitarian Forum, 2009.

5 - Georges Weber, “Introduction” *in World Disasters Report,* Geneva, IFCR, 1999, p. 7.

6 - Jean-Christophe Combe, Managing Director of the French Red Cross, “Taking Care of Humankind at +2°C,” World Conference Cannes, 15-16 April 2019.

7 - *Framework for Climate Action Towards 2*020, Geneva, IFCR, November 2017.

SECOND PART

EIGHT Challenges (but only one Earth!)

CHALLENGE 1: **Mitigating Health Risks Related to Disasters**

CHALLENGE 2: **Adapting to Heatwaves in Urban Areas**

CHALLENGE 3: **Preventing Epidemic Risks: Community-Based Approach and Public Health**

CHALLENGE 4: **Addressing Mental Health and Psychosocial Support Needs**

CHALLENGE 5: **Addressing Food Insecurity and Malnutrition**

CHALLENGE 6: **Addressing the Health Challenges of Climate-Induced Population Movements**

CHALLENGE 7: **Preventing Health Needs Related to the Combined Effects of Conflict and Climate**

CHALLENGE 8: **Protecting Ecosystems to Promote Health**

Mitigating Health Risks Related to Disasters

CHALLENGE

1

Mitigating Health Risks Related to Disasters

While weather, geological or climatic hazards and phenomena are natural, a disaster is anything but natural. The majority of the human, societal and economic costs incurred can be avoided by investing in disaster risk reduction. By preparing communities and building sustainable health systems, it is possible to enhance populations' health resilience to disasters. However, integrating health into disaster risk management – and vice versa – presents a number of practical challenges that will have to be overcome through approaches that focus on people's health needs, well-being and active participation in the establishment of prevention and risk reduction measures.

Less than 50%
of national health budgets include emergency preparedness and response.

(WHO, 2008)

Each year, on average, so-called natural disasters affect 199 million people, cause 67,000 deaths and plunge 26 million people into poverty.

(IDMC, 2018)

$1 invested in disaster risk reduction saves $16 on response and recovery costs.

(IFRC, 2019)

Observations

Severe weather, climatic or geological phenomena have always been part of the natural hazards to which a population is exposed: precipitation, droughts, floods, storms, cyclones, landslides, forest fires, etc. Depending on their intensity, their location and the affected populations' capacity to protect themselves, these extreme phenomena cause so-called natural disasters with potentially disastrous consequences.

For several decades now, we have been witnessing a significant increase in the number of disasters. Indeed, the average annual number of so-called natural disasters measured between 1997 and 2017 is twice as much as it was between 1978 and 1997.[1] This is an ongoing trend that is apparently set to rise in the next decade.[2] There are multiple factors underlying the shift: population growth, urbanisation, land-use change, but also climate change.

Firstly, climate change affects extreme weather events and increases both their intensity and frequency. The severe nature of recent hurricanes such as Dorian in 2019 and Harvey in 2017 is attributed in part to climate change.[3] We are now three times more likely than in the early 1900s to experience hurricanes as severe as Hurricane Harvey, solely due to climate change.[4]

Secondly, global warming compounds the uncertainty and unpredictability of severe weather events, thus complicating any attempts to address them. The changing nature of the risks and their geographical location portends unprecedented disasters, such as the first heatwaves in Europe or the first category 5 hurricanes in North America and the Caribbean.

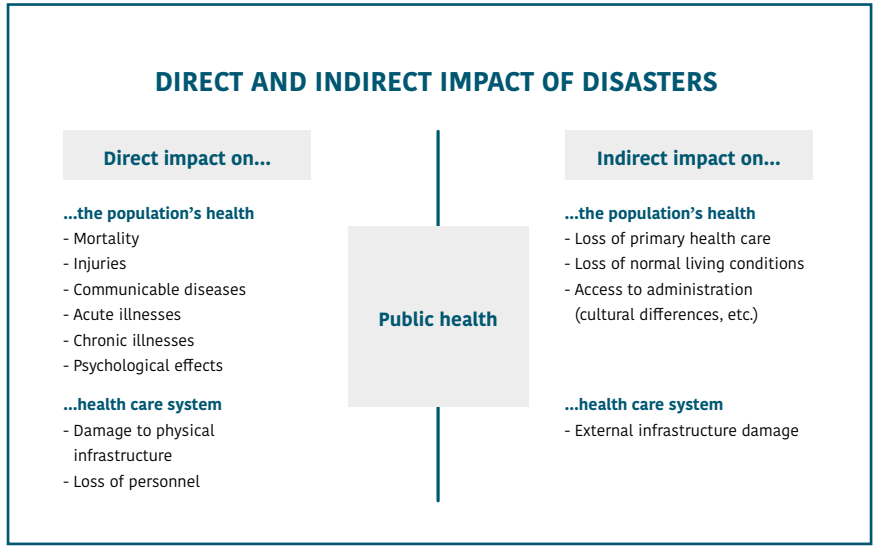
Disasters have drastic consequences for health. The consequences are manifold and not only directly affect populations (deaths, injuries, diseases, etc.), but also the organisation of a society (harvesting, access to water, electricity, etc.), as well as health systems (access to relief supplies, medical equipment supply, availability of qualified personnel, etc.).

> **A healthy community is a resilient community"**
>
> **TEDROS ADHANOM GHEBREYESUS, Director-General of WHO**

Issues

Between 1998 and 2017, climate and geophysical disasters claimed 1.3 million lives and 4.4 billion people were injured, rendered homeless, displaced, or in need of urgent assistance.[5] These figures are set to increase in the coming years. Indeed, by 2050, 200 million people may require international humanitarian assistance each year due to climate disasters and the socio-economic consequences of climate change.[6]

Beyond emergencies, so-called natural disasters have indirect impacts on the health of populations. For example, the risks of famine, malnutrition or political instability are heightened by the disruption of sources of food, water and other livelihoods. The organisation of a society as a whole is disrupted, due particularly to limited access to basic services such as electricity, transport, water or hygiene.



While the causes of severe weather or climate phenomena seem uncontrollable, disasters resulting from these phenomena are not inevitable. Indeed, the devastating impact of a disaster hinges in part on the initial status of the health system and its shortcomings. Health and disaster risk management systems often operate in isolation. Greater porosity between these systems and better community preparedness would serve as significant leverage in terms of reducing consequences of disasters.

Disasters weaken public and primary health services. Hurricane Maria in Puerto Rico in 2017 directly claimed the lives of 64 people: the additional 3,000 deaths are attributable to shortcomings in the health system.[7] Health service operations may be disrupted not only by damage to the infrastructure, medical equipment and supplies, but also by the loss of medical records, death of health personnel or lack of specialised personnel. Thus, after a disaster, health systems are often affected by the imbalance between the exceptional number of health needs and diminished supply of care linked to the devastating impact of the disaster, in addition to the initial shortcomings of the health system.

Although multiple and extreme, consequences of climate disasters are not insurmountable: they are a matter of preparedness and risk reduction. Indeed, under conditions of equivalent exposure to the same natural hazards, populations in the poorest countries are seven times more likely to perish than populations in the richest countries.[8] Vulnerability does not depend solely on the nature of the risks. It also stems from governance and organisation of basic services and living conditions that do not offer a satisfactory level of overall well-being (physical, mental and material).

Direct or indirect health consequences of disasters could therefore be avoided, or reduced, through appropriate risk prevention and management measures, with particular focus on basic services organisation and access, as well as the populations' living conditions.

Response

Disaster risk reduction is defined as "systematic efforts to analyse and manage the causes [of disasters], particularly through reduced exposure to hazards and reduced vulnerability of people and property, sound soil and environmental management, as well as improved preparedness for adverse events."[9]

The value of disaster risk reduction is now well established, both humanly and economically. It helps prevent every natural hazard from turning into a disaster. In Bangladesh, for example, investments in disaster risk reduction have led to a sharp decline in the number of deaths caused by cyclones: from 300,000 deaths caused by Hurricane Bhola in 1970 to 3,500 deaths caused by Hurricane Sidr in 2007, despite being greater in intensity.[10] Investments in disaster risk reduction are especially beneficial. For every dollar invested in a disaster risk reduction programme of the International Federation of Red Cross and Red Crescent Societies (IFRC), sixteen dollars are saved on post-disaster response and recovery costs.

The adoption of the Sendai Framework 2015-2030 by the UN body in charge of disaster risk reduction - United Nations System for Disaster Risk Reduction or UNISDR - helped set priorities and recognise the major impact of climate change on populations. The Bangkok Principles, adopted in 2016, set out the implementation modalities of the Sendai Framework in terms of health issues, with particular emphasis on effort coordination.

However, while disaster risk reduction has so far developed in the fields of urban planning, construction, transport and energy networks, it has not yet fully penetrated the field of health. Therefore, the current challenge resides in broadening the scope of health risk management from disaster response and recovery to a more integrated approach that includes preparedness, prevention and mitigation. The process places special emphasis on scaling up populations' capacities, particularly by establishing community-based health systems that can better deliver basic health care and better manage disaster-related health emergencies. This involves systematic analysis and management of health risks by combining:

> reduction of hazards and vulnerability to prevent and mitigate risks;
> preparedness;
> response;
> recovery measures.

As a field operator and pioneer in disaster risk reduction, the International Red Cross and Red Crescent Movement strives to link disaster risk management to health in the broadest sense (including health promotion, disease control and prevention, psychosocial support, adequate and sustainable hygiene and sanitation facilities - in the national context - to strengthen the formal health system, etc.).

1 - Centre for Research on the Epidemiology of Disasters, "Economic Losses, Poverty & Disasters, 1998-2017," 2018.

2 - *IFRC Secretariat DRR & Climate Action Strategy Paper,* 2019-2020.

3 - Michael Mann and Andrew E. Dessler, "Global heating made Hurricane Dorian bigger, wetter – and more deadly" *in The Guardian*, 4 September 2019.

4 - G. J. Van Oldenborgh *et al.*, "Attribution of Extreme Rainfall from Hurricane Harvey," August 2017, Environmental Research Letters.

5 - Centre for Research on the Epidemiology of Disasters, "Economic Losses, Poverty & Disasters, 1998-2017," *op. cit.*

6 - IFRC, *The Cost of Doing Nothing*, Geneva, 2019.

7 - George Washington University Milken Institute School of Public Health, "GW Researchers: 2,975 Excess Deaths Linked to Hurricane Maria" in Washington DC, GW Today, 2018.

8 - *IFRC Secretariat DRR & Climate Action Strategy Paper*, 2019-2020, *op. cit.*

9 - Centre for Research on the Epidemiology of Disasters, "Disaster Data: A Balanced Perspective" *in CRED CRUNCH*, N°. 27, Brussels, 2012.

10 - IFRC Secretariat and Disaster Risk Reduction Working Group, "Climate action & disaster risk reduction strategy paper," 2019.

Example of good practice

The IFRC's Community-Based Health and First Aid (CBHFA) programme is a success story in terms of linking disaster risk reduction to health. Its main objective is to improve the local, regional and international capacity to respond to emergencies related to public health or disasters. The CBHFA programme is a long-term commitment that demands constant commitment. 154 National Societies have made it their main community health programme.

In concrete terms, it is about empowering communities to take charge of their own health. By using simple tools tailored to the local context, communities are encouraged to prioritise and meet their own health needs. Beyond first aid, CBHFA programmes are designed to facilitate disaster risk reduction, but also to address needs linked to urban risks, malaria, as well as maternal, newborn and child health, non-communicable diseases, hygiene promotion, etc. There are seven million CBHFA volunteers around the world.

Our recommendations

> Build community resilience through a multidisciplinary and multisectoral approach: closely link disaster risk reduction and public health development.

> Build community resilience through a participatory approach: acting for and with communities in an integrated manner, while drawing on their knowledge and expertise.

> Ensure continuity of health care after disasters and among the least accessible populations and raise their awareness on the importance of their health, which is often neglected in favour of basic needs such as food and shelter.

> Develop forecast-based funding for an early, appropriate and effective response.

Protecting Populations in View of the Complex Nature of 21st Century Disasters

As auxiliary to public authorities, the French Red Cross collaborates with organisations involved in risk management and disaster relief.

In France, the Civil Protection Modernisation Act of 2004 (*Loi de modernisation de la sécurité civile*) establishes the main framework for the relief operations conducted by the French Red Cross. A "Regulation for operations carried out by the French Red Cross during emergency situations in France" specifies the operating procedures of its rescue teams. This dynamic is reinforced by its 2020-2025 strategy for disaster preparedness, response and recovery. The aim is to enable people to protect themselves and to carry out first aid on loved ones, to the extent of each person's abilities.

Because safety in view of major risks should be everyone's concern, the French Red Cross intends to share its expertise with the other National Societies of the Red Cross and Red Crescent Movement, as well as offer them support. The goal is to boost the capacity of particularly vulnerable populations in other parts of the world.

The operations of the French Red Cross focus on the three phases of a disaster (before, during and after), and on the basic needs of the people affected. This demands a constant capacity for anticipation in order to develop solutions and to overcome crises efficiently. This integrated response, offered in conjunction with public authorities, must be adapted to the local context, both domestically and internationally. It hinges on social and digital innovation and focuses on the needs expressed by people, but also on jointly developing the most effective and relevant solutions, in order to strengthen the social impact on populations.

The French Red Cross Strategy 2020-2025 for preparedness, response and recovery of populations in the event of disasters is based on four overlapping aspects:

> Knowledge and data management as a factor in improving response and impact on populations.

> Preparing populations to strengthen their capacity to cope with the disaster and mitigate its destructive effects.

> Operational crisis response.

> Supporting populations in the recovery phase.

The French, their Health and Climate Change: the Disturbing Figures

Just over half of the French people feel they know what to do in the event of a flood or storm, and **34%** feel they can respond to a disease epidemic that is barely present or absent in France today.

Nearly **8 out of 10 French people** are concerned by the consequences of climate change on their health, which are already visible for **two thirds** of them.

Among the main areas of concern are:

Increasing natural disasters **(89%)**
Fear of facing conflicts due to scarcity of resources **(79%)**
Pulmonary or cardiovascular diseases **(75%)**
Heatwaves or coldwaves **(85%)**
Population migration **(76%)**
Emergence of new epidemics in metropolitan France: dengue fever, malaria, cholera, etc. **(73%)**

Citizens do not feel prepared and do not trust institutional stakeholders

54% feel that they are not well informed on the subject despite growing climate-related alerts.

Lastly, **64%** indicated that they have no first aid knowledge or skills.

While the French mainly rely on health professionals **(82%)** and associations and NGOs **(76%)** to find solutions to adapt to the consequences of climate change, there is a disturbing lack of trust in institutional stakeholders, **52%** for the United Nations, **37%** for the European Union and only **34%** for governments.

Training and mutual assistance: solutions to better address risks

For the French, the main solution would be to strengthen disaster relief systems in order to address emergencies and dangerous situations **(57%)**,

followed by training in climate change health risks **(55%)**,

capacity-building for the most vulnerable **(49%)**

and first aid training **(39%)**.

Survey conducted by Harris Interactive in March 2019 for the French Red Cross, in partnership with the AESIO Group.

Adapting to Heatwaves in Urban Areas

CHALLENGE

2

Adapting to Heatwaves in Urban Areas

Heatwaves are one of the consequences of global warming and have a considerable impact on human health, ranging from simple heat strokes to strokes, allergies and respiratory diseases, etc. The rising global urbanisation heightens and augments these effects. Yet, inexpensive solutions do exist, and today's metropolises have started preparing to meet current and future needs.

In 2017, more than 157 million vulnerable people over the age of 65 were exposed to heatwaves worldwide, 18 million more than in 2016.

(*The Lancet*, 2018)

7 out of 10 people will be living in cities by 2050.

(UN, 2018)

Nearly 5 billion people live in areas where extreme heat is predictable over a given period.

(*Environmental Research Letters*, 2018)

Observations

There is no universal definition of heatwaves, but the World Meteorological Organisation (WMO) characterises them as an unusually hot period of time (average, maximum, minimum and daily temperature) in a given region, persisting for at least three consecutive days during the hot period of the year, with thermal conditions that exceed certain thresholds, based on local climatological characteristics.

Since the beginning of the 20th century, the average global surface temperature has increased by 0.74°C - due to greenhouse gases - with a clear spike since 1976, reaching 0.19°C per decade. Moreover, a 0.27°C increase was recorded in the southern hemisphere and 0.53°C in the northern hemisphere between 1997 and 2006,[1] compared to the average calculated for 1961-1990 (WMO). According to the 2014 report of the Intergovernmental Panel on Climate Change (IPCC), the worst-case scenario would lead to a global warming of 4.8°C in 2100, and the forecasts are likely to be even more pessimistic in the upcoming 2021-2022 report, according to contributing French researchers: Centre national de la recherche scientifique - CNRS (French National Centre for Scientific Research), Commissariat à l'énergie atomique et aux énergies alternatives - CEA (French Alternative Energies and Atomic Energy Commission), Météo France (French national meteorological service).

Heatwaves are one of the serious consequences of these climate disruptions and are increasingly frequent and intense. In France, the French meteorological service, Météo France, estimates that there will be twice as many in 2050 and that in 2100 the episodes will be longer, more extreme and over a wider period. In Australia, there were over 200 record high temperatures in 2018 and 2019.[2]

A group of Hawaiian researchers has made the analysis that if 30% of the world's population is currently exposed to heatwaves for at least 20 days a year, by 2100, this percentage could rise to 48%, at best, implying a drastic reduction in greenhouse gas emissions, and up to 74% in the worst case scenario.[3]

This extreme weather phenomenon is amplified in certain contexts, particularly in urban areas. Humidity, the presence of urban canyons occurring when a street is

"Climate change is worse than you think but still reversible."

PR. CAMILO MORA, Professor at the University of Hawaii in Manoa

flanked by buildings on both sides, urban deserts linked to the absence of vegetation, additional diffuse heat sources (population density, cars, tar, air conditioners, etc.) and pollution mists – the infamous "smog" – heighten and augment the effects of heatwaves. This is referred to as the urban heat island effect.

And yet, the urban population grew to 4.2 billion in 2018 from 751 million in 1950, and the UN Department of Economic and Social Affairs has declared that by 2050, 7 out of 10 people will be living in cities.

Anecdote

The French word for heatwave, *canicule*, comes from the Latin word canis, which means dog. It is also the other name of Sirius, the brightest star of the Canis Major or Great Dog constellation. Sirius rises and sets with the sun from July 22 to August 22, a period often marked by intense heat, and hence the name.

Issues

Heatwaves, which are amplified in urban areas, have significant direct and indirect impacts on human health. They affect their physical and mental health, as well as health systems.

People's physical health is affected in several ways, as heatwave consequences manifest themselves through skin rashes, cramps, "heat stroke," sunstroke and dehydration. Some diseases are compounded by high temperatures over extended periods: respiratory diseases, certain forms of diabetes, kidney diseases, cardiovascular diseases, strokes. There are also more accidents in periods of intense heat, for instance, drowning, fires or car accidents due to faulty infrastructure (e.g. roadway melting). The mortality rate is undeniably higher during these periods: the increase in mortality in the summer of 2003 exceeded 70,000 deaths in Europe.[4]

Indirectly, there are significant health risks given the increase in vector-borne and infectious diseases (dengue fever, malaria, gastrointestinal diseases, Legionnaires' disease, etc.). This is due to the resurgence of the insects or animals that carry these diseases (mosquitoes, sandflies, ticks, rodents), or environmental conditions that facilitate contamination (unsanitary water points, in particular), as a result of increased temperatures and warming in certain regions. There is also a significant increase in allergies, particularly due to pollen multiplication and the proliferation of stinging insects.

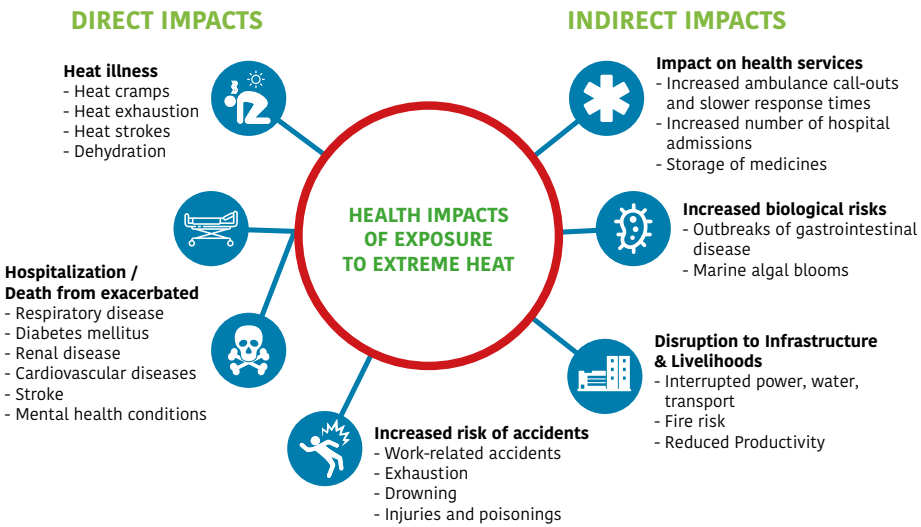
Moreover, human mental health is also affected by intense heat episodes. To this effect, connections have been established between rising temperatures during heatwaves and higher suicide rates, as well as a higher number of consultations for psychological and mental disorders.[5]

Lastly, the health system itself can fail during heatwaves and cease to provide all services to the population, whether due to power cuts, lack of water supply, or congestion of emergency vehicles.

On the other hand, while it is obvious that heatwaves are aggravated in urban areas, their consequences are heightened depending on the populations they affect. Not surprisingly, it is the most vulnerable people who suffer the most from the impacts of heatwaves. They include the elderly, young children, people with chronic diseases, people working outside, people who are homeless or living in informal shelters (slums, tents, etc.) and people in social isolation. To this effect, a 2003 study conducted by the French Ministry of Health indicates that, of the deaths transferred to the forensic institute during the 2003 heatwave, 41% lived in a single room and 36% in "maid's rooms."

And yet, governments and cities are not always well prepared for the heatwaves. The IPCC, in its special report "1.5°C Warming", states that beyond the lack of funding, "it is likely that adaptation strategies will not be in place in several regions, with a significant impact on communities with the lowest adaptive capacities."[6]

HOW HEATWAVES AFFECT HEALTH



Response

The serious consequences of heatwaves are not inevitable and can be reduced through simple and inexpensive actions. Above all, it is a matter of anticipation, information dissemination, good practices and protection.

Anticipation translates into strategies to reduce the impact of heatwaves and improve air quality. To this end, the Red Cross and Red Crescent Climate Centre provides cities with a special guide on heatwaves.[7] Reducing vulnerabilities prior to crises by identifying at-risk populations or isolating homes also helps mitigate the consequences. Greener urban planning is also essential to preventing heatwaves. Furthermore, a 2014 Public Health England study highlights the influence of green spaces on mortality. The establishment of cool areas and improvement of public transport are also some of the solutions put forward to anticipate heatwave episodes. In addition, it is now necessary to establish an early warning system to indicate the likelihood of a heatwave occurrence and its potential health effects, by associating meteorological and health services.

The example of the city of Cape Town is an anticipation benchmark. Faced with current observations and alarming weather forecasts, the city of Cape Town has taken considerable measures to limit the impacts of heatwaves on the population. The city has set up open-access misting systems, intends to implement a tree replanting programme and hopes to use new technologies in the future to improve prevention of extreme heat accidents. It is also a model in the field of information dissemination, having launched beach and swimming pool rescue programmes, as well as a broader strategy to communicate and educate on the consequences of heatwaves.

Indeed, disseminating information, raising awareness and educating are among the keys to responding to the consequences of heatwaves in urban areas. Citizens are also encouraged to act individually within communities, to take care of each other, and to make their voices heard by the relevant public authorities to incite them to address the causes of heatwaves.

Finally, in terms of protection, strengthening the health system makes it possible to implement the appropriate response in periods of extreme heat. In Saudi Arabia, for example, 2 to 3 million pilgrims are received each year in Mecca, often in extreme weather conditions due to very high temperatures. The health system had to be completely revamped to meet the growing demand for medical care: heat stroke, sunstroke, dehydration, etc. Thus, the health infrastructure has been developed, “heatwave” contingency plans have been drawn up and considerable awareness has been raised on heat and its risks.

1 - Climate Research Unit, University of East Anglia.

2 - Will Steffen, Annika Dean, Martin Rice and Greg Mullins, Climate Council of Australia, *The angriest summer*, the Climate Council of Australia Limited 2019.

3 - Camilo Mora, “Global risk of deadly heat” *in Nature Climate Change*, 19 June 2017.

4 - INSERM, Press release of 22 March 2007.

5 - J. Mullins, and C. White, *Temperature, climate change, and mental health: Evidence from the spectrum of mental health outcomes*, San Luis Obispo, California Polytechnic State University, 2018.

6 - IPCC, “Impacts of 1.5°C of Global Warming on Natural and Human Systems” *in Global Warming of 1.5°C*. 2018.

7 - R. Singh, J. Arrighi, E. Jjemba, K. Strachan, M. Spires, A. Kadihasanoglu, *Heatwave Guide for Cities*, Red Cross Red Crescent Climate Centre, 2019.

Example of good practice

FORECAST-BASED FINANCING (FBF)

FbF is a mechanism for mobilising resources prior to a natural disaster, allowing humanitarian operators to act before the disaster occurs to reduce its impacts and provide assistance to people more effectively. FbF practitioners use weather forecasting and risk analysis to track extreme weather events. If a climate event reaches a certain threshold that has been defined and agreed in advance in an Early Action Protocol (EAP), funds are automatically released and pre-defined activities corresponding to the expected level of damage are carried out. The International Red Cross and Red Crescent Movement is a world leader in the FbF approach and launched its first pilot projects in 2013.

In January 2018, the Vietnamese Red Cross and the German Red Cross launched the "FbF Ready" project to reduce the adverse effects of heatwaves on the most vulnerable populations in Hanoi. Using the FbF methodology already implemented by more than 16 National Red Cross and Red Crescent Societies, "FbF Ready" will use forecasts provided by the Vietnamese Institute of Meteorology, Hydrology and Climate Change (IMHEN) to predict the onset of heatwaves, raise funds before they occur and take proactive measures to mitigate their impacts. At the end of the project, the Vietnamese Red Cross will be able to replicate the FbF model to respond to other disasters and will position itself as a regional leader in humanitarian anticipation.

Our recommendations

> Engage all levels: individuals, communities, education systems, health services, all the way to policymakers.

> Generalise early warning systems. Goal: 500 million people reached and informed by 2030.

> Strengthen social ties for greater solidarity and more effective communication.

> Generalise green solutions in cities (planting, cool areas) by drawing on nature (trees, plants, water).

> Make the National Red Cross and Red Crescent Societies catalysts for action: they must be the driving force behind new initiatives and promote solutions that work.

“We all have, individually and collectively, the means to tackle air pollution and limit its adverse health effects. For Aésio, action translates, above all, to protecting people suffering from pathologies linked to air pollutants: by assisting with their care and, if necessary, their daily routines. It also means aligning one’s business with a sustainable development vision, to meet the challenges of tomorrow, whether social, societal or environmental. Let us all decide to live a better life.”

EMMANUEL ROUX, Managing Director of Aésio Group

Climate Change and Air Quality

At first glance, air pollution and global warming seem to be two distinct issues. On the one hand, air pollution seems to cause effects on a local scale due to specific pollutants (ozone, nitrogen oxides), through aerosols that release particulate matter. On the other hand, global warming has an impact on climate on a global scale owing to greenhouse gas emissions, which mainly include carbon dioxide but also methane, nitrous oxide, etc.[1] However, global warming and poor air quality are closely linked, with particular regard to their origin, effects and the actions required to tackle them.

Firstly, the causes of air pollution and global warming are the same. Although the gases involved in either case are different, all are predominantly anthropogenic in origin. Human activities related to industry, transport, housing and agriculture produce the pollutants that cause air quality decline and global warming.

Secondly, air pollution and global warming have interconnected effects and the two mutually enhance and compound each other. Air pollution increases global warming because of certain aerosols, called carbonaceous aerosols, which are deposited on snow and ice, thus trapping solar radiation (whereas other aerosols, however, contribute to the cooling of the earth by their absorption power). Conversely, climate change exacerbates air pollution problems. Increasingly frequent and intense heatwaves induced by global warming are associated with pollution peaks: on the one hand, they contribute to primary pollutant stagnation around roads, and, on the other hand, solar radiation and heat, through a photochemical reaction, turn the primary pollutants into secondary pollutants, including ozone. As a result, the pollutants are found in greater quantities in the air during a heatwave, and in urban areas where traffic is denser and air conditioners run at full capacity.

Yet, the pollutants have numerous effects on health owing to the fine particles that enter our bodies: asthma attacks, decreased lung function, onset of respiratory diseases, coughing and bronchitis. According to the World Health Organisation, nearly 7 million people die each year from poor air quality with children being the most affected.[2]

Moreover, on 24 October 2019, France was condemned by the Court of Justice of the European Union, after Poland and Bulgaria in 2017, for its failure to protect its citizens against air pollution.

Finally, common effects and causes call for synchronised actions. For example, through improved energy efficiency in buildings, a more responsible transport policy, better waste management, rational agriculture, etc. In short, reducing air pollution and mitigating climate change both require us to thoroughly review of our industrialised lifestyles, as well as our production- and consumption-driven society.

Furthermore, the fight against these two phenomena must be considered as a whole, since a reduction strategy applied to one will affect the other. Therefore, it is necessary to study, pool and coordinate actions to reduce air pollution and to mitigate climate change.

1 - AirParif
2 - WHO, press release “Nine in ten people breathe polluted air around the world,” Geneva, 2 May 2018.

Preventing Epidemic Risks: Community-Based Approach and Public Health

GUILLAUME BINET/MYOP

CHALLENGE

3

Preventing Epidemic Risks: Community-Based Approach and Public Health

Climate change is one of the factors that exacerbate epidemic risks. Their consequences significantly contribute to the spread of certain diseases such as dengue fever, cholera or the Ebola virus. Although the first to be impacted, communities are not sufficiently involved in epidemic control strategies. Therefore, to prevent epidemic risks, the French Red Cross offers a response consisting of the community-based approach and health system reinforcement, while also integrating epidemiological surveillance systems. The challenge resides in empowering communities to adequately prevent, detect and respond to the various diseases that might affect them.

Climate change will cause an additional 60,000 malaria deaths annually from the 2030s onwards.

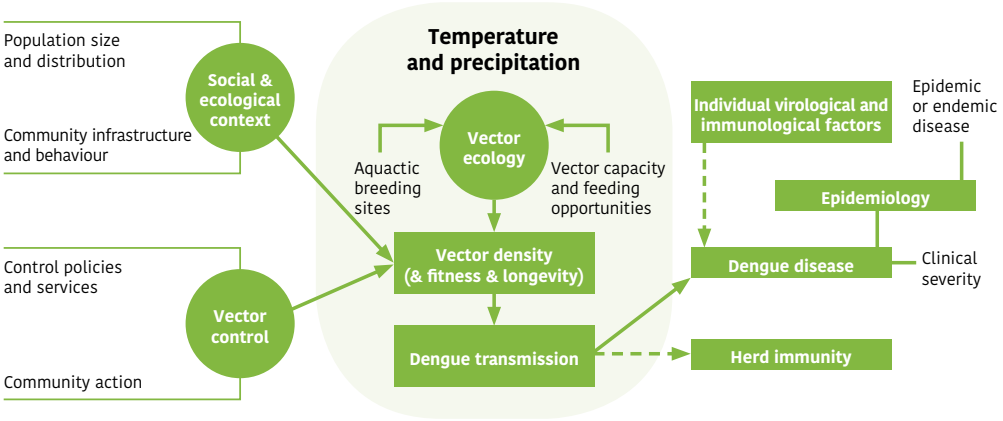
(WHO, 2014)

Vector-borne diseases account for one billion cases each year.

(WHO, 2016)

The vectorial capacity of *Aedes aegypti* and *Aedes albopictus* mosquitoes - both responsible for dengue transmission - has increased by 9.4% and 11.1%, respectively, since 1950.

(*The Lancet*, 2018)



Climate exerts a strong influence on dengue transmissions - in interactions with many other non-climate factors.

Source: WHO, "Atlas of Health and Climate," 2012.

Observations

Epidemics are a crucial public health issue. Each year, there are more than 1 billion cases and more than 1 million deaths worldwide attributable to vector-borne diseases;[1] infectious diarrhoeal diseases cause about 2 million deaths.[2] Moreover, epidemics and their characteristics are constantly changing. Since the 1950s, the vectorial capacity of *Aedes aegypti* and *Aedes albopictus* mosquitoes - both responsible for dengue transmission - has increased by 9.4% and 11.1%, respectively.[3] In 2016, the global vectorial capacity for dengue virus transmission reached its highest level ever,[4] threatening 2.5 billion people in more than 100 countries.[5]

The epidemiology of vector-borne diseases is determined by a complex system of interactions and equilibria between climatic and meteorological factors, vectors, humans and pathogens (viruses or parasites). Determinants of the evolution of infectious diseases can range from land-use change to precarious health conditions, demographic, societal and behavioural changes, to disruption of health and surveillance systems.[6] Thus, it is difficult to attribute a change in the epidemiology of vector-borne diseases to just one factor. For example, why is dengue or chikungunya so widespread geographically? Is it due to global warming, urbanisation, population movements, tourism or the emergence of insecticide-resistant mosquitoes?

Precarious health conditions, fragile health systems and unsafe hygiene practices are a fertile breeding ground for the spread of epidemics. Thus, they are more likely to develop disproportionately in already vulnerable populations or in communities lacking adequate surveillance, detection or treatment capacities.

Issues

Climate change is one of the aggravating factors in epidemic evolution. Its impact on the distribution of infectious and parasitic diseases occurs at four levels:

Contributing to unsanitary conditions

Extreme weather events, whose occurrence and intensity are exacerbated by climate change, are an aggravating factor in unsanitary conditions, and thus, the spread of infectious diseases. Not only do typhoons, abnormally heavy rainfall or floods contribute to the mixing of drinking water and waste water, but disasters can also disrupt water supply systems. Indeed, climate change is conducive to the transmission of infectious diseases, particularly cholera, meningitis, trachoma and haemorrhagic fever outbreaks.[7]

Influencing the ecology of disease transmission

The living conditions of vectors responsible for the spread of vector-borne diseases (malaria, dengue, chikungunya, Zika, Lyme disease, leishmaniasis, bubonic plague, etc.) are also affected by climate change. The general rise in temperatures, floods and droughts contribute to extending the activity and reproduction periods of mosquitoes and insects carrying infectious germs. Even small variations in temperature and precipitation can lead to great changes in the transmission of vector-borne diseases.[8] Areas and seasons of epidemic risk are expanding, thus heightening the risk of transmission to humans.[9]

Threats of disease re-emergence

Global warming poses the threat of re-emergence of extinct or very rare diseases. For example, in Siberia in 2016, the Moscow Institute of Epidemiology discovered an outbreak of anthrax - a disease that had been extinct for 75 years in the region - that caused the deaths of several people and the hospitalisation of dozens more.[10] Its origin was traced back to thawing bodies that had been buried in the 1940s, which occurred due to abnormally high temperatures in the region. Permafrost thawing, whose magnitude and speed have recently been revised upwards by IPCC scientists,[11] threatens to release many other viruses and bacteria that have been frozen for thousands of years.[12]

Indirect influence on other determinants of disease

Climate change indirectly affects some of the determinants responsible for the emergence of infectious diseases among populations. For example, climate change is partly responsible for changes in agricultural practices, population movements or disruption of health systems, which are some of the causes of epidemic transmission.

Response

The consequences of climate change thus affect the distribution of epidemics, but do not fundamentally alter their characteristics. To this effect, whether the causes of an epidemic are aggravated by climate change or not, the following three actions are essential to responding effectively to an epidemic: disseminating good health practices among the population, rapidly identifying new cases, and then adequately managing the new cases.

The response to a health emergency is therefore based on two complementary pillars - the community-based approach and public health:

> The public health approach makes it possible to invest in climate-resilient health systems so that they can anticipate the onset of diseases and carry out preventive and curative interventions.

> The community-based approach helps facilitate and foster health stakeholders' involvement in advocacy, and that of local stakeholders in terms of organising early detection, control and prevention of epidemics.

For community involvement to be effective, it can be complemented by establishing epidemiological surveillance means. This involvement is the first step towards empowering and training all stakeholders. Thus, everyone can develop skills in the prevention, surveillance and detection of diseases that affect the people around them. Strengthening the resilience of the health system coupled with this community-based approach allows for better care right from the onset of the first symptoms. Thus, an epidemic will have neither the time nor the capacity to spread.

Cooperation is one of the prerequisites for community involvement. It calls for increased coordination at the geographical, multisectoral and multidisciplinary levels. An example is the One Health approach, which considers human, animal and ecosystem health as an indivisible whole. Thus, complementarity between humanitarian operators, institutions and civil society makes it possible to achieve significant improvements in terms prevention, surveillance, detection and response.

> **Involving communities in epidemic control strategies is important."**
>
> **SENDY VEERABADREN, Head of delegation of the French Red Cross Regional Intervention Platform for Americas-Caribbean**

1 - WHO, "Atlas of Health and Climate," 2012.

2 - *Ibid.*

3 - The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come.

4 - *Ibid.*

5 - WHO, Vector-borne diseases fact sheet, 2017.

6 - Leport & Guégan, "Emerging Infectious Diseases: Status and Prospects," 2011, based on Woolhouse & Gowtage-Sequeria (2005).

7 - WHO, "Atlas of Health and Climate," 2012.

8 - The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come.

9 - WHO, "Atlas of Health and Climate," 2012.

10 - *The Guardian,* "Anthrax outbreak triggered by climate change kills boy in Arctic Circle," 1st August 2016.

11 - IPCC, "Special Report on the Ocean and Cryosphere in a Changing Climate," 2019.

12 - *Le Monde*, "A new giant virus, more than 30,000 years old, discovered in Siberia," 4 March 2014.

Example of good practice

A community-based surveillance project developed jointly by the Norwegian Red Cross and the International Federation of Red Cross and Red Crescent Societies is an example of successful epidemiological surveillance, based on community participation and a digital data collection tool. Volunteers, who are trained to recognise symptoms of a disease, can easily and quickly send information about the cases they receive (types of symptoms, place of care, age, etc.). Thus, the centralisation of this crucial data makes it possible to understand how an epidemic evolves in real time and to effectively pool deployed resources for early management.

To achieve such a result, the project was tested several times in areas hit by epidemics in Haiti, Sierra Leone and Madagascar. Each time, the digital data collection tool being tested proved unsuitable. After 5 hackathons and a very detailed description of the needs, the right interface has been found and has already made it possible to prevent two epidemics. Infected persons were treated promptly. The symptoms had been properly analysed and entered into the system by trained volunteers. One week after the first reported case, no other cases were reported.

Our recommendations

> Build community resilience through a multidisciplinary and multisectoral approach: consider human, animal and ecosystem health as a whole.

> Build community resilience through a participatory approach: train and endow populations with capacities for monitoring, early warning and response, promotion of good practices, in order to better contribute to health systems.

> Develop research and use science to better understand climate change and its direct and indirect effects on health and propose appropriate responses.

Addressing Mental Health and Psychosocial Support Needs

CHALLENGE

4

Addressing Mental Health and Psychosocial Support Needs

Climate change can cause physical manifestations with significant health consequences, including risks of psychosocial disorders and mental health impairment (post-traumatic stress, anxiety, aggression, loss of one's bearings, suicidal thoughts, etc.). To date, these effects on mental and psychological health are poorly documented, barely recognised and difficult to manage. Yet, they are factors that compound vulnerability. As regards available solutions, they involve integrating the psychological dimension into emergency response and putting prevention and training at the heart of programmes for populations.

In the United States and Mexico, a 1°C increase in average temperatures resulted in an increase in suicide rates by 0.7% and 2.1%, respectively.

(*The Conversation*, 2018)

Up to 40% of people who have directly or indirectly experienced a natural disaster have shown some form of psychopathology (mostly anxiety but also suicidal thoughts or post-traumatic stress).

(American Psychological Association, 2017)

85% of the French population are concerned about the global warming phenomenon.

(IFOP, 2018)

Observations

Mental health is defined by the World Health Organisation (WHO) as a state of well-being in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.[1] Thus, mental health not only refers to psychological disorders or illness, but also to emotional resilience and psychosocial well-being.

WHO estimates there will be 250,000 excess deaths per year between 2030 and 2050 due to clearly identified impacts of climate change.[2] However, the risks and impacts of climate change on mental health are not as well-known and are often overlooked.

And yet, the shock experienced during a disaster, the loss of loved ones, the destruction of property and the disruption of the social fabric can result in trauma, difficulty coping and the inability to recover. Survivors may develop disorders such as post-traumatic stress, eating disorders, sleep or mood disorders, as well as anxiety and suicidal thoughts, among others.

"Belonging to [focus] groups is an important source of social support, but it also gives us the opportunity to be much more effective.

SUSAN CLAYTON, Whitmore-Williams Professor of Psychology, College of Wooster, and Member of the Intergovernmental Panel on Climate Change (IPCC)

The development of psychological disorders and psychosocial problems is often the result of complex, long-term factors. Various root causes can be cited, such as famine, war or poverty, which can be accelerated by climatic variations.[3]

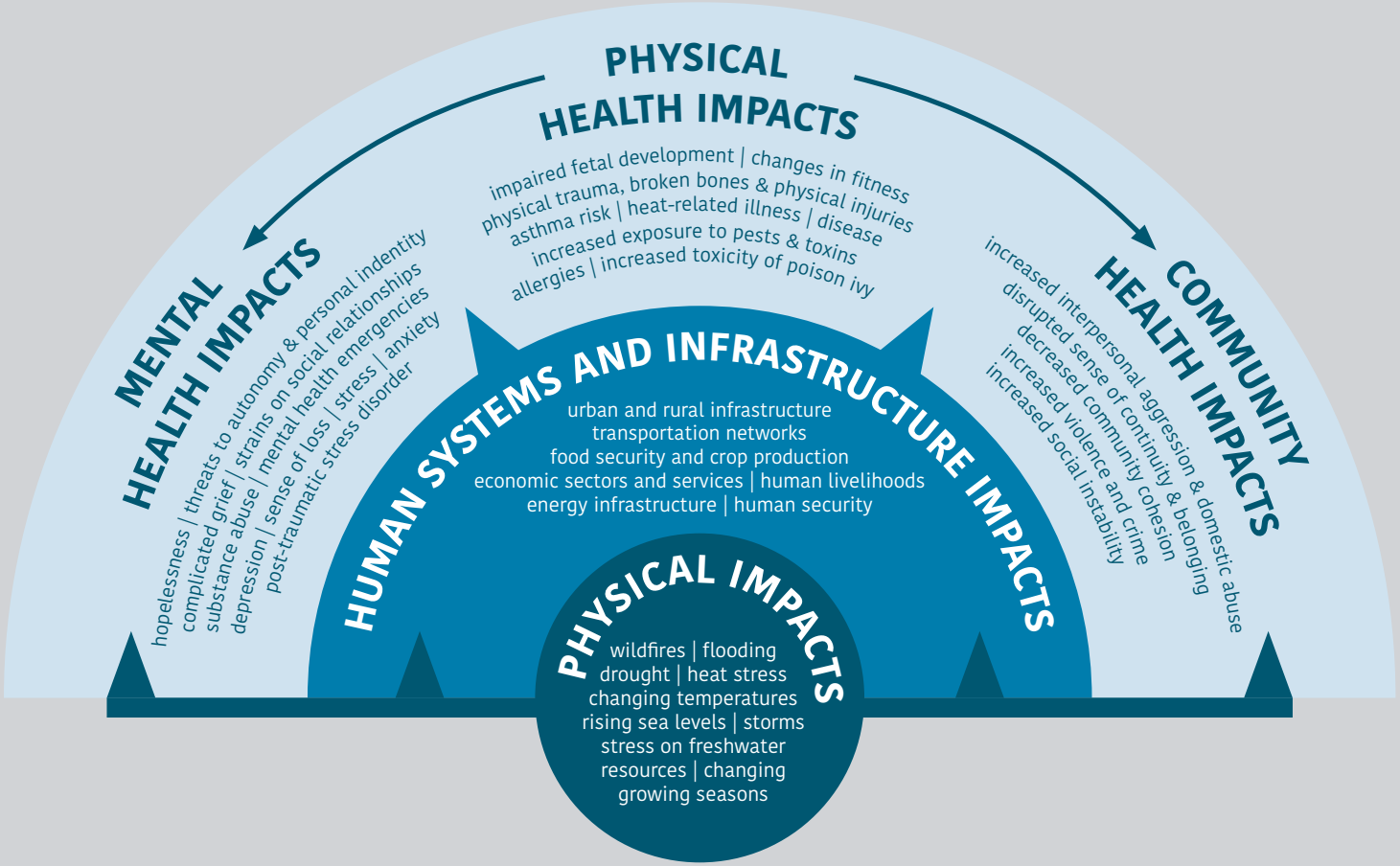
In addition, there is often a significant decrease in medical and psychiatric care for people with pre-existing mental illnesses in post-disaster periods, which is when they need it most.[4]

According to the American Public Health Association,[5] climate change affects people at three levels.

> **Immediate impacts:** these are direct and acute impacts mainly related to natural disasters induced by climate change. Research has shown that climatic events with significant physical impacts can lead to post-traumatic stress disorder, acute depression, anxiety, loss of autonomy, loss of one's bearings, pathological grief, survivor guilt, personality disorders, addiction, aggressive or suicidal behaviour.[6] The recurrence of these events adds to the aggravation of certain psychosocial disorders, as the population is aware that the disaster suffered and the difficulties in overcoming it will be repeated.

> **Progressive impacts:** the spread of infectious diseases, temperature rises or droughts caused by climate change are causes of stress and anxiety. Higher temperatures and longer periods coincide with an increase in suicide rates,[7] violence and aggression, or diminished hope for and positive projection into the future.

> **Indirect impacts:** Climate change has an indirect effect on mental health, because of its potential impact on economic hardship, social and health infrastructure, agriculture, livestock, etc. All these aspects, together with the risks of more frequent and intense natural disasters, are all potentially stressful and can lead to migration, especially if the community has already suffered a disaster.



Source : EcoAmerica

Issues

Climate change has manifest impacts on mental health, although they are often overlooked and not widely known, despite their potentially profound and persistent nature.

In emergency contexts, the main focus in on treating physical injuries, while tending to mental disorders and illnesses seems secondary as deemed less vital. Treatment of pre-disaster mental illnesses is often discontinued following destruction or weakening of health facilities. The lack of attention to the effects of climate change on mental health can also be explained by the lack of training for relief workers involved with psychological support and mental illness management.

Moreover, the various impacts of climate change on mental health do not always emerge in the days following the disaster. Disorders can occur gradually and are more difficult to detect than a physical injury. This makes it challenging to identify the people in need of care, especially if they do not wish to talk about the stress they are experiencing.

Managing the issue is complex, especially since climate change affects people in the same community differently, i.e., depending on their vulnerabilities, communities, and geographical location. This makes it more difficult to anticipate the response, as it needs to be tailored to each case.

Psychosocial impacts vary from one individual to another, in addition to a number of pre-existing vulnerabilities: women, children, the elderly, people with chronic diseases and people with disabilities can be particularly prone to greater psychological and social disorders when the impacts of climate change affect them, be they direct or indirect impacts.

This makes the response more difficult to anticipate because it must be adapted to each case.

Most crises (disasters, conflicts) usually have a beginning and an end. Climate change, on the other hand, can be a source of serious concern in terms of its implications over time, in addition to the pessimism it entails. The loss of hope for a positive future can be particularly heightened when it comes to climate change. Eco-anxiety (see box below), i.e., concerns about the impacts of climate change, can lead to heightened stress over time and eventually lead to problems such as drug addiction or anxiety disorders.[8]

Eco-anxiety

Past generations were preoccupied with wars and then with AIDS and unemployment; the anxiety of the new generations emanates from climate change. More and more research is highlighting the link between emotions such as anxiety, despair, anger, guilt or loss of hope in view of global issues, such as the consequences of climate change. The terms eco-anxiety, green depression or “solastalgia” are commonly used.

As early as 2017, the American Psychological Association, which represents American psychologists, encouraged mental health professionals to work with communities at risk of environmental decline, and was the first to define eco-anxiety as a “chronic fear of a condemned environment.”[9]

According to the Austrian philosopher Glenn Albretch, inventor of the term “solastalgia,” this concept is defined as “the state of impotence and profound distress caused by the disruption of an ecosystem.” The word comes from the English word “solace,” which means comfort, and from the Greek word algos, meaning pain.

Therefore, eco-anxiety manifests itself as a kind of depression that primarily affects victims of the direct consequences of climate change, but also people who are not directly affected. The previously prevailing sentiment that climate change impact is as a thing of the distant future has changed. Today’s generation realises that they will not be spared regardless of their location, and that climate change will have an impact on their daily lives.[10] This awareness can lead to severe anxiety, fear, anger or a feeling of helplessness.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Response

Preparedness is essential to limiting the risk of developing psychosocial disorders and severe mental health impairment related to the consequences of climate change. It concerns individuals, communities, but also humanitarian operators, volunteers and employees.

In the context of climate change, it is hope that is affected. Thus, this involves working with people to help them better prepare and adapt, and thereby helping restore hope, which is crucial to well-being.

The awareness-raising programmes offered to children in schools to help them integrate good practices and good actions in the event of disasters are an example of public preparedness measures.

At community level, this involves strengthening infrastructure (providing training for education and health personnel, for example), and also identifying and supporting associations, which will then be easier to activate or reactivate after a disaster.

Finally, at staff level, this preparedness may include training in psychological first aid (PFA), which would enable them to be more effective in supporting people in distress. In addition, it is essential to help those who provide support, to watch over their well-being, as well as their ability to provide both disaster recovery support and support to adapt to climate change and positively project into the future.

In 2015, WHO defined a framework for building climate-resilient health systems, with particular regard to mental health. The framework provides advice to health professionals to help them anticipate, prevent and prepare for potential trauma and injuries related to climate change effects. The goal is to protect populations' standard of health by strengthening the capacity of health systems to cope, adapt, support and recover from a climate change event.

In the field of mental health, everyone who has experienced a climate disaster is at risk, but each individual is affected in a different way and develops more or less serious disorders (sleep, mood, diet, behaviour, etc.), which can result in depressed, anxious or aggressive states that can lead to risky behaviour (taking drugs, alcohol abuse, etc.), violence (directed towards others or towards oneself), etc. It is therefore essential to adapt the responses according to the various degrees of affliction identified in the people affected by a disaster.

1 - WHO, "Mental health: strengthening our response" *in Fact Sheet*, No. 220, March 2018.

2 - Nick Watts, W Neil Adger, Paolo Agnolucci, Jason Blackstock, Prof Peter Byass, Wenjia Cai *et al.*, "Health and climate change: policy responses to protect public health" *in The Lancet*, 2015.

3 - Katie Hayes, G. Blashki, J. Wiseman, S. Burke and L. Reifels, "Climate change and mental health: risks, impacts and priority actions" *in International Journal of Mental Health Systems*, volume 12, 2018.

4 - L. Page and L. Howard, "The impact of climate change on mental health (but will mental health be discussed at Copenhagen)?" *in Psychological Medicine Online*, 30 November 2009.

5 - American Public Health Association, "*Making the Connection: Climate Changes Mental Health,*" 2017.

6 - Katie Hayes, G. Blashki, J. Wiseman, S. Burke and L. Reifels, "Climate change and mental health: risks, impacts and priority actions," *op. cit.*

7 - Marshall Burke, Felipe González, Patrick Baylis, Sam Heft-Neal, Ceren Baysan, Sanjay Basu & Solomon Hsiang, "Higher temperatures increase suicide rates in the United States and Mexico" *in Nature Climate Change*, vol. 8, 2018, pp. 723-729.

8 - *Mental Health and Our Changing Climate. Impacts, Implications, and Guidance* (coll.), American Psychological Association, May 2017.

9 - *Mental Health and Our Changing Climate. Impacts, Implications, and Guidance (coll.), American Psychological Association, op. cit.*

10 - Audrey Garric and Pascale Krémer, "Eco-anxiety, green breakdown or 'solastalgia': French people affected by climate anxiety" *in Le Monde*, 23 June 2019.

Example of good practice

The Reference Centre for Psychosocial Support, hosted by the Danish Red Cross, mainly develops knowledge and skills on mental health and psychosocial issues, but also enhances preparedness of staff and volunteers of the International Red Cross and Red Crescent Movement and other humanitarian organisations, in order to address needs in these fields, whether in the event of conflict, a natural disaster or any other humanitarian crisis. It has developed various training modules on psychological first aid designed to contribute towards this goal.

In addition, since 2016, the Reference Centre for Psychosocial Support has been co-chair of the Inter-Agency Standing Committee on Mental Health and Psychosocial Support Reference group, whose main role is to support mental health and psychosocial support coordination groups at national level, and in various humanitarian contexts. The main goals of this reference group are to support stakeholders and to advocate for the implementation of the guidelines for mental health and psychosocial support, particularly in emergency situations.*

More recently, several members of the International Red Cross and Red Crescent Movement have embarked on a project entitled "MOvement for Responding to MENTal Health and Psychosocial Support Needs Arising from Armed Conflict, Natural Disasters and Other Emergencies" (MOMENT). The MOMENT project is led by the International Committee of the Red Cross, the International Federation of Red Cross and Red Crescent Societies, the Swedish Red Cross and Danish Red Cross. Its goals are:
> To develop an International Red Cross and Crescent Movement policy for adoption by its Council of Delegates 2019.
> To advocate for the inclusion of this issue in the agenda of the 33rd International Conference of the Red Cross and Red Crescent.
> To help draw more attention to mental health and psychosocial support needs.

* IFRC Reference Centre for Psychosocial Support, *Annual Report 2017*, p. 14.

Our recommendations

> Build resilience of individuals and communities by designing appropriate, positive messages. The messages must incorporate behaviours designed to limit climate change, while ensuring that everyone continues to adopt a positive growth mindset in keeping with an outlook that accounts for consequences of climate change.

> Build community resilience through a participatory approach: act for and with communities, by strengthening social ties and community solidarity while respecting their cultural values.

> Include continuous psychosocial support at all stages:
- Prior to crises in a consistent manner in order to boost social cohesion and the capacity for resilience. These actions also entail strengthening humanitarian operators' capacities through appropriate training and support.
- During crises to limit the risk of exacerbated consequences on their mental health. This entails providing support activities such as psychological first aid or "child-friendly spaces."
- In post-crisis recovery, or as backing for continued adaptation to climate change effects, in order to foster positive constitution or reconstitution of individuals and communities.

Addressing Food Insecurity and Malnutrition

GUILLAUME BINET/MYOP

CHALLENGE

5

Addressing Food Insecurity and Malnutrition

Climate change - by leading to higher global temperatures and the now recurrent and more intense extreme weather events - has adverse effects, particularly on global hunger. The resulting food insecurity and malnutrition have impacts on human health through disease, lack of clean water, poor sanitation and by affecting the livelihoods of the most vulnerable populations. In order to cope, it is possible to implement a variety of adaptation solutions, ranging from prevention to preparedness and response, sometimes using innovative means.

The number of people suffering from malnutrition or food insecurity increased to more than 800 million in 2017, partly due to climate change.

(FAO, 2018)

Without adaptation, researchers estimate that climate change will slow the growth of global yields by 5-30% by à 2050.

(World Bank, 2013)

If women had the same access to productive resources as men, they could increase their farm output by 20-30% and reduce the number of food-insecure people in the world by 12-17%.

(FAO, 2011)

Observations

The 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs) have highlighted the need to move away from a separate approach to food security and nutrition, livelihoods and sustainable management of natural resources.

It is time to recognise that climate change and the ensuing meteorological phenomena are significantly contributing to rising global hunger.

Temperatures are rising, there are more and more heat events, precipitation is increasingly variable and rainy seasons are changing (period, duration and intensity). The frequency and severity of droughts, floods, storms and other climate-induced disasters have intensified over the past three decades, amplifying damage in the agricultural sectors of many developing countries, with the risk of increasing food insecurity, as warned by the Food and Agriculture Organisation of the United Nations (FAO).

Thus, according to The State of Food Security and Nutrition, a report published in 2018 by FAO, climate variability and extremes are among the key factors, besides conflicts, behind the recent rise in global hunger, and are among the leading causes of severe food crises. They have a major impact on food production and on populations' access to sufficient food, both quantitatively and qualitatively, thus significantly affecting food security. The cumulative effects of climate change are detrimental to all dimensions of food security (availability, access, use and stability). Populations' future exposure to more intense and frequent climate changes threatens "to erode or even reverse the gains made in ending hunger and malnutrition." The number of malnourished people, i.e., those facing chronic undernourishment, increased from nearly 804 million in 2016 to 821 million in 2017. Even more glaringly, the number of people suffering from malnutrition or food insecurity increased from between 37 and 122 million to more than 800 million between 2014 and 2017, partly due to climate shocks.[1] After decades of decline, food insecurity has risen again since 2015, and we are now at the same level as we were almost 10 years ago. We are therefore

witnessing a disturbing erosion and reversal of the gains made in the fight to end hunger. According to the IPCC, global warming by 1.5°C could lead to a very high risk of food shortages in many regions already affected by a food crisis. In a world warmer by 2°C, an additional 189 million people would be at risk of food insecurity.[2]

Issues

Climate change affects nutrition security through multiple impacts on food security, sanitation, health and care practices, as well as livelihoods. These dimensions are interconnected and dependent on each other.

Food insecurity and malnutrition can contribute to the emergence of many diseases such as diarrhoea, pneumonia, poisoning, etc., due particularly to deficiencies, lack of hygiene or sanitation. The World Health Organisation (WHO) estimates that they account for 35% of under-five-year-old deaths and 11% of global morbidity, resulting in 3.5 million maternal and child deaths. In addition, foetal and child malnutrition would increase the risk of obesity in adults.

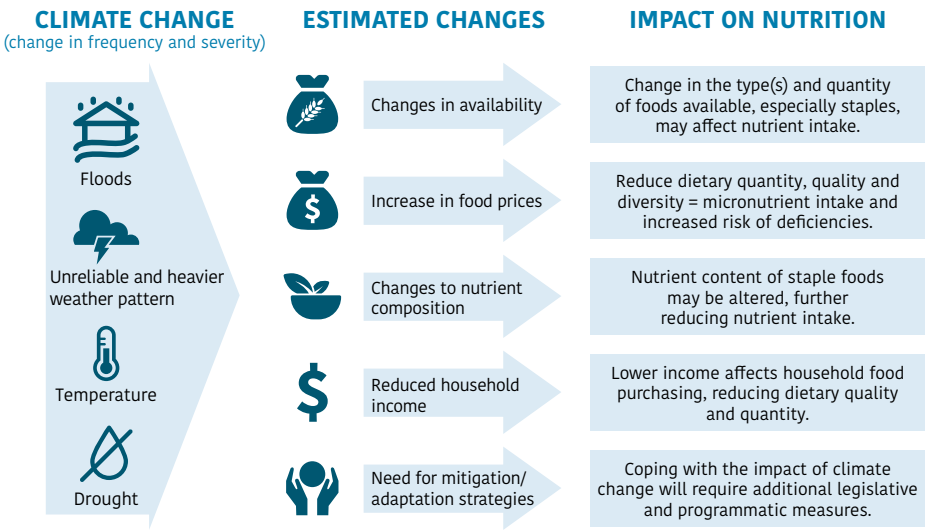
Climate change also has devastating effects on water resource availability and quality. According to the 2019 WHO/UNICEF report, some 2.2 billion people still lack safely-managed drinking water services and 4.2 billion lack safely-managed sanitation services.[3] Global warming and the growth of the world's population are now exerting additional pressure on water resources.

Drinking water is first and foremost an indispensable food (*Codex Alimentarius*). Its quality and availability are crucial for good nutrition and health. In July 2000, the UN General Assembly even recognised the right of individuals to drinking water as a fundamental right that is "essential for the full enjoyment of life and all human rights."

Water of sufficient quantity and quality is also essential for agricultural production and food preparation and processing.[4] It is therefore necessary to provide drinking water and adequate sanitation facilities to ensure food security for all.

Food security and livelihoods are impacted by climate change through rising temperatures and associated natural disasters. Indeed, they have a considerable impact on the production of land- and sea-based foodstuffs. Ecosystems are being destroyed, crops ravaged, leading to reduced yields and higher prices. In addition, this deprives small producers of the physical capacity to work outdoors, sometimes depriving their families and communities of income or foodstuffs.

The situation is all the more alarming as it is the most vulnerable people who suffer the impacts of climate change, especially women, children and the poorest populations. For the most part, those who suffer the most are the poorest households in countries in the southern hemisphere (regions most vulnerable to climate change), mostly small producers who depend on subsistence farming, fisheries or livestock farming. The added burden on women can also affect their care and feeding practices, leading to higher risks of malnutrition for children. Yet, the resilience of vulnerable people, namely their capacity to absorb these exogenous shocks, is often very limited or even depleted, forcing them to resort to negative coping strategies (reduction of food intake, sale of productive assets, etc.) that aggravate their food and nutritional insecurity. Consequently, these populations run the risk of falling into vicious cycles of debt and impoverishment.



Response

Food insecurity and malnutrition exacerbated by climate change are not inevitable and can be addressed.

Awareness-raising and training on nutrition, hygiene, sanitation, maternal and child health are essential to addressing food insecurity and malnutrition (including undernutrition and overnutrition). Depending on the context of interventions, practices and needs, support must be provided at the individual level, but also at the household and community level. It is also one of the elements developed by the French Red Cross in West Africa through the "Mothers' Clubs" approach.

Adapting practices by promoting agroecology, water resource protection, ecosystem protection in general, etc. also helps provide solutions. Enhancing research, as is the case of the French Red Cross Foundation or the Lasdel laboratory in Niger, helps understand contexts and analyse responses to make the most of them.

Preparedness for the response is of course essential and, in this context, strengthening the health system plays a significant positive role. Community-Based Management of Acute Malnutrition (CMAM), developed by Concern Worldwide, received UN endorsement in 2007 for its set of simple and practical tools designed to help government health teams to better respond to peak malnutrition management. The resilience of health systems is strengthened through a series of steps that associate the analysis of context, risks, capacities and needs, at each level, by agreeing on actions required within and outside government.

Implementing these options to address food and nutrition insecurity has involved working on multisectoral and participatory approaches as well as investing in long-term programmes. Finally, innovative means have improved the effectiveness and efficiency of the programmes undertaken, as well as the speed of response: the Forecast-based Financing approach, the Farmers' Insurance Scheme (Munich Re) or blockchain technology (used notably by the Kenyan Red Cross, the Danish Red Cross and UNUMED to transfer cash to drought-affected households).

1 - FAO *et al.*, *The State of Food Security and Nutrition in the World*, 2018, tables 2, 4 and 7.

2 - IPCC, "Impacts of 1.5 °C of Global Warming on Natural and Human Systems" *in Global Warming of 1.5 °C*, 2018.

3 - UNICEF and WHO, *Progress on household drinking water, sanitation and hygiene. 2000-2017. Special focus on inequalities*, New York, 2019.

4 - HLPE, *Water for food security and nutrition*, Rome, 2015.

Example of good practice

The “Mothers’ Clubs” have been set up by the French Red Cross and its partners in West Africa.

It is a community-based approach aimed at reducing the vulnerability of households, especially women, and improving their livelihoods, thereby strengthening their resilience and well-being, but also reaching out to their communities in a wider sense.

The “Mothers’ Club” is a group of women, who meet to exchange and raise awareness among other members of the community on topics for which they have previously been trained (maternal and child health, hygiene, sanitation, nutrition, etc.). Three aspects characterise these clubs:
> Implementation of community activities, awareness-raising on good practices to improve the living conditions of households and communities.
> Contribution to two pooled funds: the Solidarity Health Fund, intended for women and their children to access health care, and, the Resilience Fund, intended for mutual assistance and the development of economic initiatives.
> Development of economic initiatives - individual and collective Income Generating Activities (IGAs) - is a unifying element of these groupings, necessary to ensure their empowerment and sustainability of access to credit.

The main results show that all these activities have had a positive impact on the living conditions of households (health, education, food, productive assets) and on communities, with significant behavioural change, particularly in terms of health and nutrition through community awareness-raising activities.

Beyond food security, the “Mother’s Clubs” have enabled women to be recognised by their communities, improved women’s participation in the family economy, increased women’s empowerment and emancipation, and strengthened social cohesion within communities.

Our recommendations

> Build community resilience through a multidisciplinary and multisectoral approach for greater effectiveness and efficiency: associate food security, health and health care, sanitation and livelihoods.

> Build community resilience through a participatory approach: acting for and with communities in an integrated manner, while drawing on their knowledge and expertise.

> Act at all levels, from individuals to policymakers, households, communities, health services, the education system; communicate and raise awareness.

> Fund and implement long-term programs while building solid, sustainable resilience; develop forecast-based funding.

> Strengthen nutritional care by accounting for malnutrition as a whole (undernutrition and overnutrition).

> Strengthen innovative practices and methods such as early warning systems as well as rapid and safe cash transfers.

“The General Assembly [...] recognizes the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights.”

Resolution adopted by the United Nations General Assembly (UNGA) on 28 July 2010 (A/RES/64/292)

Climate Change and Water

The impact of climate change on water, and on the water cycle in particular, affects all water resources, including lakes, rivers, seas and oceans. This has a significant impact on weather events and on water availability and quality.

Thus, it impacts the frequency and intensity of so-called natural disasters, as well as food security, hygiene and sanitation.

Most of the solar energy trapped in the atmosphere by greenhouse gases is absorbed and stored by the oceans, with consequences for currents and temperature. These effects are exacerbated by the melting ice, which no longer reflects solar energy in space, contributing to global warming and greater discharge of fresh water into the oceans.

Changes in water currents and temperature result in extreme weather events such as floods, cyclones and storms, with considerable damage to populations.

According to the Intergovernmental Panel on Climate Change (IPCC), ocean warming (subsequent to absorbing more than 90% of the excess heat in the climate system to date), ocean acidification, oxygen depletion and changes in nutrient supply are already affecting ecosystems, distribution and abundance of marine life, which human beings require in order to live in a healthy and safe environment.

With regard to food security, it should be recalled that drinking water is ultimately a foodstuff (Codex Alimentarius) that is essential to good nutrition and health. In addition, water of sufficient quantity and quality is also essential for agricultural production and food preparation and processing. Yet, according to a 2019 WHO/UNICEF report, some 2.2 billion people still lack safely-managed drinking water services.[1] Climate change is a major contributor, particularly as a result of extreme weather events, such as droughts, but also floods that pollute drinking water resources or storms and cyclones that damage infrastructure.

Water also guarantees good hygiene and safe sanitation. “Extreme weather conditions, such as floods, associated with severe thunderstorms and natural disasters such as hurricanes, typhoons or earthquakes, can weaken water supply systems, exposing drinking water to waste water, thereby increasing the risk of cholera and other water-borne diseases,” indicated NASA researchers in *Scientific Reports*. Yet, still according to WHO and UNICEF, 4.2 billion people are deprived of safely-managed sanitation services.[2]

In July 2000, the UN General Assembly even recognised individuals’ right to drinking water as a fundamental right that is “essential for the full enjoyment of life and all human rights.”

Global warming and the world’s growing population are now exerting additional pressure on water resources, often leading to tensions and conflicts. Water has become a major geopolitical issue.

1 - UNICEF and WHO, *Progress on household drinking water, sanitation and hygiene. 2000-2017: Special focus on inequalities*, New York, 2019.
2 - *Ibid.*

Addressing the Health Challenges of Climate-Induced Population Movements

CHALLENGE

6

Addressing the Health Challenges of Climate-Induced Population Movements

Climate change is sometimes an invisible factor in migration, as it adds to other factors and is rarely identified as the sole cause of migration. However, it is now recognised as a driving force behind population movements. Its health impacts are manifold. Both at the mental level because natural disasters are a source of stress that add to the stress of migration, but also at the physical level because there is little health infrastructure on migration routes to manage chronic diseases, communicable diseases and non-communicable diseases. The irregular administrative situation in which some populations find themselves excludes them from ordinary care arrangements, leading to the aggravation of illnesses and their lack of care. It is therefore essential to provide a response both on migration routes and on arrival in the country of destination.

The United Nations Refugee Agency estimates that, since 2008, around 21.5 million people have been forcibly displaced by the risks of sudden emergence of hazards linked to bad weather such as floods, storms, forest fires and extreme temperatures.

(UNHCR, 2016)

More than 258 million migrants worldwide live outside their country of birth.

(UN, 2018)

In 2018, 1,600 disasters triggered an internal population displacement.

(IDMC, 2019)

Observations

Climate change and natural disasters are factors that contribute to the displacement of people. Droughts, falling agricultural yields, floods, rising water levels, increasing natural disasters and extreme weather events are disrupting the lives of entire communities and pushing more and more people into exile.

In its latest report, the Internal Displacement Monitoring Centre (IDMC) recorded 10.8 million new displacements worldwide between January and June 2019, of which 7 million were disaster-related compared to 3.8 million due to conflict and violence.

Identifying the number of environment-related migrations is complex because climate change is not always the only reason for departures. However, worsening climatic conditions are expected to amplify the phenomenon: the 2030 Strategy of the International Federation of Red Cross and Red Crescent Societies stresses that the trend towards migration should increase, especially as climate change and the environmental crisis will make some areas difficult to inhabit and lead to population movements.

Several international texts recognise that climate change has an impact on migration.

Thus, the Paris Agreement, adopted on 12 December 2015, affirms that climate change is "a matter of concern to all humanity" and includes a reference to migrants. It calls on the parties to respect, promote and take into account their respective obligations towards migrant persons. It will establish a Working Group on Displacement with a mandate to develop recommendations for integrated approaches to avoid, minimise and respond to displacement related to climate change impacts.

On 19 September 2016, the UN General Assembly unanimously adopted the New York Declaration for Refugees and Migrants. It recognises that "the adverse effects of climate change, natural disasters (some of which are related to climate change) or other environmental factors" are a cause of migration. Through the Declaration, the Member States decided to work towards the adoption of a global pact on refugees.

To this end, the Global Compact for Safe, Orderly and Regular Migration or "Marrakesh Pact" was adopted on 10 and 11 December 2018. It recognises that migration can be caused "by sudden or gradual natural disasters, the adverse effects of climate change, environmental deterioration and other precarious situations."

Migration is diverse, ranging from temporary (some populations leaving their place of residence when temperatures become too high) to permanent, internal to the country of residence or internationally.

In any case, this likely increase in the number of international migrants and internally displaced persons poses a challenge in terms of providing care and meeting health needs.

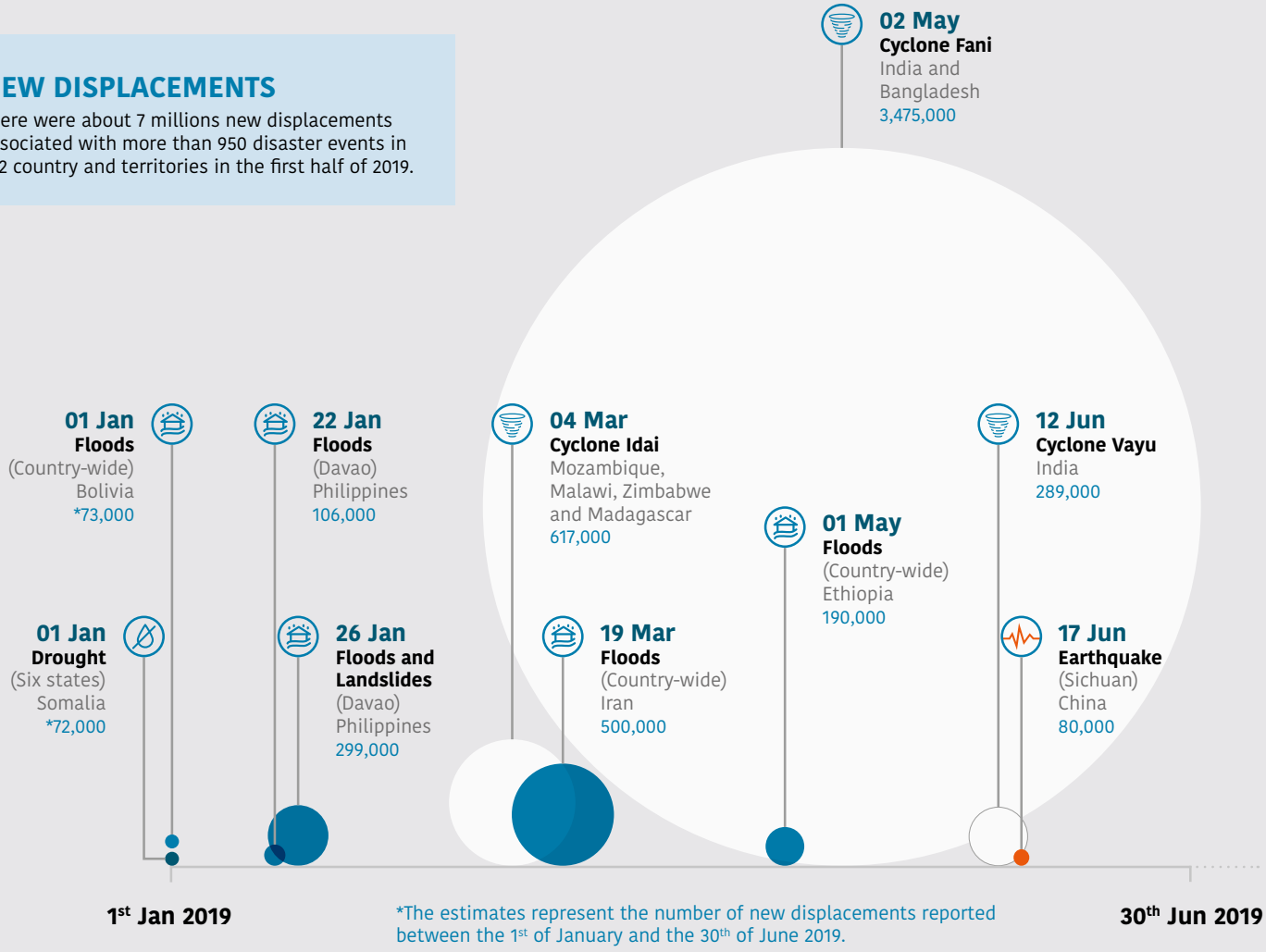
"As a Pacific National Society, 2°C is the maximum. We will not be able to cope beyond this increase. Please consider us. We are small but we exist."

JACQUELINE DEROIN DE GAILLANDE, Secretary General of the Vanuatu Red Cross

LARGEST DISASTERS EVENTS BETWEEN JANUARY AND JUNE 2019

NEW DISPLACEMENTS

There were about 7 millions new displacements associated with more than 950 disaster events in 102 country and territories in the first half of 2019.



*The estimates represent the number of new displacements reported between the 1st of January and the 30th of June 2019.

Source : www.internal-displacement.org

Can we Talk about "Climate" Refugees?

To date, there is no internationally accepted definition of human mobility driven by environmental causes. The International Organisation for Migration (IOM) has proposed a definition:

"Environmental migrants are a person or group(s) of persons who, predominantly for reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are forced to leave their places of habitual residence, or choose to do so, either temporarily or permanently, and who move within or outside their country of origin or habitual residence."

The term "climate refugee" has no legal value. Refugee status is defined by the Geneva Convention of 28 July 1951 and applies to "a person who, owing to a well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality."

The International Red Cross and Red Crescent Movement chooses not to make any distinction related to status when assisting people in their migratory journey.

The International Committee of the Red Cross (ICRC) has chosen a broad definition of migrants: "Migrants are all people who leave or flee their home to seek safety or better prospects abroad, and who may be in distress and need of protection or humanitarian assistance. Refugees and asylum seekers, who are entitled to specific protection under international law, are included in this description."*

The IFRC's 2009 Migration Policy, which applies to all National Societies, states that it applies "to migrant workers, stateless migrants and migrants deemed irregular by public authorities. It also concerns refugees and asylum-seekers, without prejudice to the fact that they constitute a special category under international law."

* ICRC, *The ICRC's response to the needs of vulnerable migrants*, October 2018.

Issues

How does climate change affect the health, access to essential care and services of migrant populations in this context?

Despite various international initiatives, morbidity and mortality rates among migrants remain very high, especially among irregular migrants, which remains a major health issue.[1]

Displaced persons face increased mental health risks. In some regions, climate change can lead to regular or sudden climate events, requiring urgent population displacement. These phenomena have a strong impact on the mental health of internally displaced persons, as highlighted by WHO in its *Technical Guidance on the Mental Health of Refugees and Migrants*. They often occur unexpectedly, forcing people to react unpreparedly, sometimes at night, and to leave their homes very quickly. Places of relocation can also be a source of stress for people who have to learn to live in makeshift shelters that do not correspond to their traditional dwellings, causing loss of cultural bearings. This is reinforced by the recurrence of natural phenomena that add stress to these populations and impair their mental health.

Some populations must abandon everything behind and go into long-term exile, with migratory routes that are often very traumatic.[2]

Family separations are also common during population movements and the psychological repercussions are deep-seated.

Beyond the psychological aspect, living conditions on migration routes have a significant impact on people's physical health - accidental injuries, hypothermia, burns, gastrointestinal diseases, cardiovascular events, complications related to pregnancy and childbirth, diabetes and hypertension, among others.[3] They may result in the discontinuation of ongoing treatments for diseases requiring follow-up over time, such as chronic diseases. Other health risks such as nutritional disorders, psychosocial disorders, alcoholism and exposure to violence are not adequately addressed due to the lack of adequate medical facilities or programmes.

Finally, people fleeing their homes due to different climatic hazards face the highest health risks upon arrival in the country of destination. As refugee status cannot be attributed to persons who have fled their country of origin for climatic reasons, they can find themselves in an irregular administrative situation in countries of transit and arrival, and their health status is found to be the most deteriorated because they have no place in the health system and do not have access to health care facilities.

Thus, as the WHO Europe report[4] points out, migrants generally arrive in Europe in good health, but the deteriorated reception conditions then foster pathology development. Precarious living conditions such as eating poorer quality food, lack of access to safe drinking water, inability to bathe and lack of exercise increase the risk of developing cardiovascular diseases, diabetes, cancer and chronic diseases. Difficulties in accessing care often lead to late diagnosis at an advanced stage of illness, and high mortality rates among pregnant women and newborns, as well as congenital diseases.

And the climate changes that have led many people to migrate may well constitute an additional obstacle to their well-being in their country of arrival, where, for example, increased frequency of major heatwaves can exacerbate their vulnerability and cause exhaustion, heart attacks and aggravate existing pathologies such as heart or respiratory diseases[5] given their precarious living conditions.

"Climate migration is the human face of climate change: it concerns people.

MARIAM TRAORE CHAZALNOEL, Migration, Environment and Climate Change Expert, International Organisation for Migration (IOM)

Response

In this context, it is crucial to integrate migrants into health care systems to ensure detection of potential diseases and their care as early as possible.

IFRC has a Global Migration Strategy that places the health of migrants at the heart of its actions and those of National Societies.

With the support of National Societies, it strives to provide migrants with access to health throughout their migratory journey in their countries of destination and transit, through health programmes that include mental health and psychosocial support, but also in their country of origin through reintegration programmes that include a health dimension.[6]

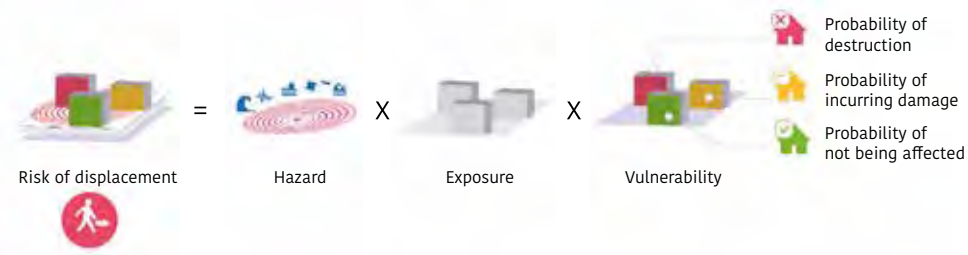
In its Strategic Aim 1, the strategy calls for National Societies to provide migrants with first aid services, basic health care, mental health and psychosocial support, and to refer them to services that can provide them with such services. This is the case with the French Red Cross, in cooperation with the ICRC in Agadez, Niger. To this end, training is provided to ensure that National Societies are endowed with the capacity to respond to the needs of migrant persons, particularly those related to their irregular administrative status or protection. IFRC's 2030 Strategy, which will be adopted in December 2019, provides support to migrants along key migration routes, thereby seeking to provide the most comprehensive response possible and to avoid disruption of treatment and care.

To this effect, the French Red Cross set up a health monitoring file for the migrant persons whom it receives for medical consultation, which has been in place since 2017. The file allows for simpler and more effective medical follow-up and faster referral to the most appropriate care facilities. Thanks to this document, which is strictly personal and confidential, health care professionals have all the necessary information (family, surgical or medical history, allergies and illnesses), guaranteeing quality care.

Through its foundation, the French Red Cross has been conducting research since 2018 on the health of migrants and on how to provide better care and innovative responses. For example, the research examines the food practices and experiences of migrants in France and aims to gain a better understanding of what food aid represents as well as its role.

The Internal Displacement Monitoring Centre (IDMC) has developed a global displacement risk model.[7] On the basis of past displacements, their location, magnitude and causes, it aims to produce, relevant data, evidence and analyses to adjust policy and operational responses.

This risk model can help anticipate climate-related health needs by geographic area and provide the most comprehensive response possible.



1 - IOM, *Migration and Health*, 2018.

2 - IOM, *Manual on Community-Based Mental Health and Psychosocial Support in Emergencies and Displacement*, 2019.

3 - WHO, *Migration and Health, FAQs,* February 2017.

4 - WHO Regional office for Europe, Report on the health of refugees and migrants in the WHO European Region, *No public health without refugee and migrant health*, 2018.

5 - WHO Regional Office for Europe, *Migration and Health: Key Issues.*

6 - IFRC Global Strategy on Migration, *Reducing Vulnerability, Enhancing Resilience*, 2017.

7 - The global risk model is available on the IDMC website: internal-displacement.org

Example of good practice

In partnership with the Danish Red Cross and UNUMED, the Kenyan Red Cross developed a digital biometric recognition solution in Kalobeyei camp in Kenya. The camp, which was established in June 2016 and is jointly managed by UNHCR and the Kenyan Red Cross, opened a health centre in 2017.

The camp mainly hosts refugees from neighbouring countries (South Sudan, Uganda, Ethiopia and the Democratic Republic of the Congo). The teams have taken care of approximately 38,000 people (refugees and local populations).

The challenge at this pilot site was to identify and adequately respond to multiple health needs (injuries, communicable diseases, non-communicable diseases such as diabetes).

With the support of a private IT company, a biometric patient identification and registration solution has been implemented. The solution is designed to improve patient management by ensuring reliable monitoring of their medical records.

In a migration context, information about people's medical records and identity is often lost. This makes it difficult to identify a person using only their name because several people can use a similar name. Identification from the iris allows reliable identification because the iris is unique to each person. This ensures that caregivers have access to the right person's file and that proper medical follow-up is carried out.

Similarly, the digitisation of medical records makes it possible to record data and obtain an overview of the health status of migrant persons. This allows professionals to identify the most common diseases and adopt an appropriate response depending on the presence of the diseases in the different parts of the camps. The tool is also particularly useful for planning interventions and necessary medications.

Monitoring care, activities and needs is thus facilitated and precise.

Our recommendations

> Establish universal health coverage to ensure access to basic health care for all, regardless of individuals' administrative status.

> Provide early psychological support, upstream of population movements, to persons at risk of displacement.

> Deploy health centres along migratory routes, within "humanitarian services points," and develop tools that make it possible to monitor the health of people in transit, and which are endowed with the capacity to protect their personal data, and avoid interruption of treatment

> Provide access to primary health and psychological support services in all camps and places where migrants are detained.

> Adapt the infrastructure of camps hosting migrant populations to make them resilient to natural disasters, to limit the risk of contagion and maintain hygienic conditions that mitigate spreading of certain pathologies.

Preventing Health Needs Related to the Combined Effects of Conflict and Climate

CHALLENGE

7

Preventing Health Needs Related to the Combined Effects of Conflict and Climate

Climate change is generating tensions and appears to be an amplifier of vulnerabilities rather than a direct cause of conflict (water scarcity, destruction of living quarters, etc.). It exacerbates situations that can lead to conflict, thus enhancing the complexity of the existing situation. Access to health care is already difficult in a conflict that may or may not be exacerbated by climate change, as infrastructure and caregivers are affected by attacks or targeted. In some contexts, the number of conflict victims is compounded by victims affected by climate change, increasing pressure on an already crippled health system that is unable to provide care to the new victims. The response to this new challenge must therefore integrate the climate change dimension into traditional conflict response.

Between May 2016 and April 2018, the ICRC recorded more than 1,200 incidents against the staff, the wounded and health facilities in 16 countries affected by armed conflict and other emergencies.

(ICRC, 2018)

As a result of an intensification of armed violence in Burkina Faso since the beginning of the year, more than 500,000 people have been deprived of health care.

(ICRC, 2019)

In Yemen, only 45% of medical facilities were still operational at the end of 2017.

(ICRC, 2019)

Observations

Research[1] on the main drivers of existing conflicts shows that climate change, alone, does not necessarily directly cause or trigger armed conflict.[2] However, climate change heightens the impact of conflict on the population.[3] In other words, there is no causal link but rather a correlation between armed conflict and climate change. More specifically, climate change is seen as a "risk multiplier" that exacerbates social, economic and environmental risks that can lead to armed conflict or other situations of violence.[4] It is a multiplier of vulnerabilities that contributes to poverty and social exclusion, which can foster contexts of violence.

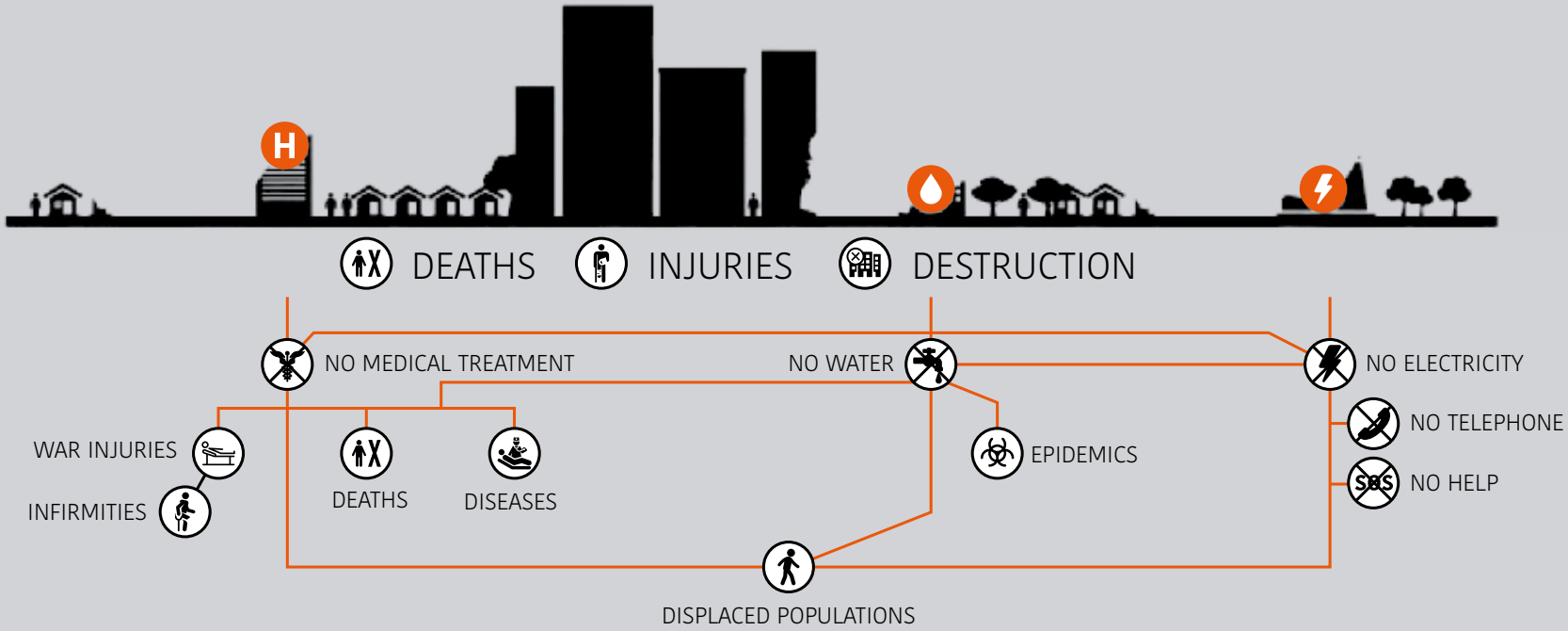
"There are no solutions that will come alone from the humanitarian sector. Humanitarian needs in conflict settings are already overwhelming the humanitarian system capacities. Solid political interventions and collective actions are needed. It is important to envisage how to put the existing initiatives together for a more significant impact.

DR. ESPERANZA MARTINEZ, Head of Health, International Committee of the Red Cross (ICRC)

The origins of armed conflict are complex and diverse: power relations, economic and political tensions between communities, exclusion of minorities and access to natural resources. Climate change can influence these various factors.

The situation in the Sahel region illustrates how climate change can exacerbate pre-existing inter-community tensions, in this case between livestock and crop farmers. While this is due to population growth in the region, ancestral land disputes, land decline due to animal passage and access to natural resources, these factors are compounded by global warming and the failure of local authorities to adopt mitigation measures. The exacerbation of inter-community conflicts by the effects of climate change is reflected in increased poverty, declining public services and disruption of traditional livelihoods.

Conversely, armed conflicts are also described as a driver or multiplier of vulnerabilities for individuals or communities facing climate change effects. Armed conflicts, particularly protracted conflicts, undermine the individual or collective capacity to adapt to climate change. Thus, a population in an area that is less vulnerable to climate change but is heavily affected by armed conflict and therefore unable to cope with climate shocks and stress situations will suffer more severe impacts than a population living in an area that is highly at risk but where government and society are able to adapt.[5] In protracted conflict situations where absorptive and adaptive capacities are weaker (such as Yemen), the effect is much greater.



Source : ICRC film, *Explosive weapons in populated areas, consequences for civilians.*

Issues

Humanitarian organisations, such as the International Committee of the Red Cross (ICRC) and the National Red Cross and Red Crescent Societies, have found that armed conflict and climate change consist of various factors that increase vulnerabilities and risks to individuals and the community as a whole. Countries affected by armed conflict and climate change are therefore considered to be extremely vulnerable, as communities are more impacted and less resilient when affected by both phenomena: the ICRC has drawn up a list of 30 countries of particular concern, including Mali, Chad, Niger, Somalia, South Sudan, Myanmar and Yemen.

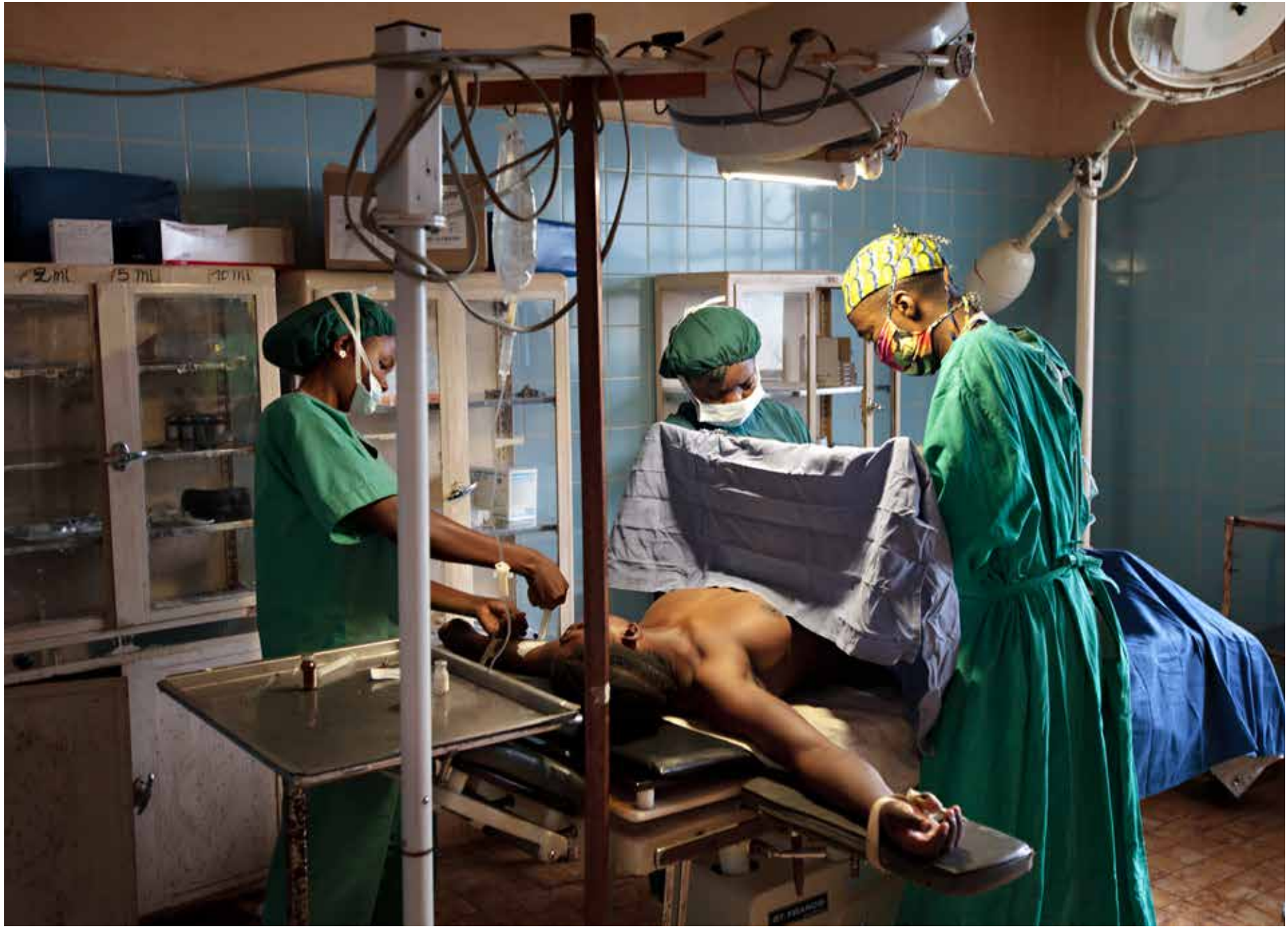
The combined effects of climate change and armed conflict definitely have a considerable impact on growing health needs and on health infrastructure.

Climate change, together with rising temperatures, is leading to the re-emergence of diseases in different countries, such as malaria (in Colombia, Kenya and Ethiopia) or dengue fever (in Myanmar, for example); it is causing epidemics and the ensuing disasters are causing new injuries.

These climate-related health needs are emerging in a health context already undermined by armed conflict. Armed conflicts have a serious impact on health personnel and facilities. Health personnel, medical vehicles and facilities are victims of deliberate or unintentional attacks ranging from theft of medicines to shelling in armed conflicts,[6] even though the number of conflict-related injuries remains high.

Violence affecting health care makes access to basic health services and essential medical services (maternal and child health, vaccinations, medicines, etc.) difficult if not impossible when structures are destroyed or located in combat zones.

This contributes to increased morbidity and mortality, which are being addressed by government agencies and humanitarian organisations, even as climate change exerts additional pressure on local and national systems that are already eroded by conflict.[7]



Response

Climate change complicates and changes contexts on a fundamental level. Government agencies and humanitarian organisations will have to integrate this new aspect into their response framework, which must now incorporate the climate change dimension on top of conflict.

Until now, climate change response programmes have been considered either in a context of armed conflict or stable governance. Programmes need to be considered in light of this double vulnerability.[8]

Unlike other contexts, in a situation where "classic" conflict and climate change effects are both present, it is not possible to set up surveillance mechanisms or early warning systems to rapidly detect peaks in climate-related diseases and thus avoid a high mortality rate. Therefore, epidemics cannot be adequately treated.

Appropriate techniques need to be identified to meet health needs, e.g., comprehensive preventive health kits combining vaccination, nutrition and water supply, which can really help reduce mortality rates in certain areas. Climate change scientists must be consulted in order to find sustainable solutions that are as environmentally friendly as possible, and which can be implemented by communities.

Humanitarian organisations are also working with communities to find mechanisms to strengthen their resilience and capacity to cope with the combined shocks of armed conflict and the effects of climate change. However, solutions cannot come solely from the humanitarian sector; they hinge on collective efforts that should be initiated and coordinated by governments and other stakeholders in order to have a global impact.

1 - R.K. Pachauri and L.A. Meyer (ed.), *Climate Change 2014: Synthesis Report*. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva, IPCC, 2014.

2 - N.P. Gleiditsch, "Wither the weather? Climate change and conflict" in *Journal of Peace Research*, 49 (1): 3-9, 2012.

3 - Katie Peters, Leigh Mayhew, Hugo Slim, Maartenn van Aalst and Julie Arrighi, *Double vulnerability: the humanitarian implications of intersecting climate and conflict risk*, March 2019.

4 - K. Peters and J. Vivekananda, *Topic guide: conflict, climate and environment. Evidence on Demand*, London: Department for International Development, 2014.

5 - Katie Peters, Leigh Mayhew, Hugo Slim, Maartenn van Aalst and Julie Arrighi, *Double vulnerability: the humanitarian implications of intersecting climate and conflict risk, op. cit.*

6 - ICRC, *Health Care in Danger. Emergency Statement*, Geneva, ICRC, 2011.

7 - Katie Peters, Leigh Mayhew, Hugo Slim, Maartenn van Aalst and Julie Arrighi, *Double vulnerability: the humanitarian implications of intersecting climate and conflict risk, op. cit.*

8 - D. Tanzler, A. Carius and A. Maas, "The need for conflict sensitive adaptation to climate change" *in* G. Debalko, L. Herzer, S. Null, M. Parker and R. Stickler (eds.), *Backdraft: the conflict potential of climate change adaptation and mitigation. Environmental Change and Security Program Report*, 14:2, Washington DC, Woodrow Wilson International Centre for Scholars, 2013.

Example of good practice

In its analysis, the ICRC is increasingly taking into account economic security, water and habitat management programmes, the impact of climate change and risks to people, their livelihoods, resilience and environment. The aim is to design programmes that can help populations adopt practices that mitigate their vulnerability to climate change effects, for example by developing crops that are more drought-resistant, for local farmers, or by working with local health structures and support centres. The analysis of potential community programmes on the local environment is now specifically considered. This approach integrates both the health impacts of climate change and the health impacts of conflict.

Our recommendations

> Integrate climate risk into operational planning in an armed conflict context in a coherent manner, including through funding based on forecasts and appropriate techniques, such as emergency preventive health programmes, water supply systems and capacity-building for communities and local authorities, including their health facilities.

> Build community resilience through a participatory approach: acting for and with communities in an integrated manner, while drawing on their knowledge and expertise.

> Strengthen coordination between local authorities and humanitarian operators in order to avoid creating parallel aid systems.

> Mobilise policymakers and the public to urge governments and warring parties to respect their legal obligations, in order to ensure access to and quality care for vulnerable persons.

> Encourage mitigation, in the general sense and especially among humanitarian operators, while avoiding possible adverse effects on communities.

Protecting Ecosystems to Promote Health

CHALLENGE

8

Protecting Ecosystems to Promote Health

The destruction of our ecosystems has consequences for human health. Ecosystem services (oxygen production, pollination, water purification, foodstuff production, etc.) protect our environment, our resources, our physical and mental health and the planet itself. Preserving and repairing them demands everyone's involvement, both internationally and locally. Beyond the necessary international commitments, community awareness and involvement - by drawing on their expertise - are at the heart of the solution.

About 60% less wild vertebrates and 83% less freshwater animals since the 1970s.

(WWF, 2018)

On 29 July 2019, the world had consumed all the resources that the planet can renew in 1 year.

(Global Footprint Network, 2019)

More than 45% of climate impacts could be avoided and more than $50 billion saved by conserving or restoring nature.

(*Plos One*, 2018)

Observations

According to the 1992 United Nations Convention on Biological Diversity, an ecosystem is a «dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.” Today, the planet’s ecosystems are under threat. Mainly by human activities, but climate is a factor and climate change is exacerbating their disappearance.

Extreme weather events and continued global warming are undermining terrestrial and marine biodiversity. According to the French Scientific Committee on Desertification (“Comité scientifique français de la désertification - CSFD”), desertification affects 40% of the world’s submerged lands. In France, 50% of wetlands, such as ponds or bogs, disappeared in the second half of the 20th century.[1]

According to the Intergovernmental Panel on Climate Change (IPCC), ocean warming (which has absorbed more than 90% of the excess heat in the climate system to date), acidification, oxygen depletion and changes in nutrient supply are already affecting marine life distribution and abundance. For example, corals, which are home to more than 25% of the world’s known marine species, are also being mistreated: about 30% of the Great Barrier Reef off Australia[2] reportedly disappeared with just the summer 2016 heatwave.

The anthropogenic share of this mass destruction is considerable. Tropical forests are burned and decimated (nearly one hectare per second[3]) and mangroves uprooted (340.000 hectares per year[4]) for economic and agricultural reasons.

The biodiversity that makes up and sustains these ecosystems has been severely affected since the 1970s, with about 60% less wild vertebrates (mammals, fish, birds, reptiles and amphibians) and 83% less freshwater animals.[5] The international panel of specialised experts on biodiversity (IPBES) estimates that the species extinction rate is 100-1000 times higher than it was only a few centuries ago.

Other challenges include the growing global population and our endless consumption of natural resources. Since 1950, more than six billion tonnes of marine resources have been fished, with catches peaking in 1996 and declining slowly since then.[6] At this rate, fish farms in Asia Pacific, the world’s most populous region, are likely to reach zero production by 2048.[7]

> **“The future of humanitarian action also depends on preserving ecosystems.”**
>
> **LOUIS-ROGER ESSOLA ETOA, Chair of the Commission on Dense and Wet Forest Ecosystems in Central Africa (CEFDHAC)**

Each year, the “Earth Overshoot Day” - the date when the ecological footprint will exceed the planet’s biocapacity - draws closer. According to the NGO Global Footprint Network, on 29 July 2019, the world had consumed all the resources that the planet can renew in a year. While this may seem akin to a mere announcement effect, the calculation, which takes into account annual consumption figures related to fisheries, livestock, buildings, agricultural land, forest resources, but also the carbon footprint of these various activities, primarily highlights the threat of over-consumption and the urgent need for action and to change our consumption and production patterns.

Issues

Human beings need to preserve ecosystems in order to live in a healthy and safe environment. Two key reasons for their protection are that their ecosystem services, which benefit humanity, help mitigate and adapt to climate change.

Mitigation is made possible through the absorption of CO2 by certain ecosystems: 31% of greenhouse gases emitted each year are absorbed and conserved by trees, plants and soils.[8] Photosynthesis releases oxygen and produces the organic matter required for soil fertilisation. While some ecosystems are victims of climate change (particularly most marine ecosystems), others are part of the solution.

Adaptation is rendered possible by ecosystem services that affect health, access to safe drinking water, food security, and protection from extreme weather events. In the medical field, they thus supply the natural products used in traditional medicine (practised by between 30 and 70% of the population depending on the country[9]) or used in medicine compositions. The biodiversity that constitutes ecosystems also makes it possible to develop biomedical research based on fauna and flora and to discover new treatments. Finally, ecosystems play a role in regulating infectious agents and their transformation could lead to certain diseases transmissions.

The link between access to safe drinking water, food security and ecosystems is clearer: biodiversity allows water filtration and purification, guaranteeing access to fresh drinking water, which is essential for a healthy life and good hygiene. It also affects foodstuff production, either by supplying it directly to humans, or indirectly by promoting soil productivity (e.g. pollination), and by providing the necessary resources for agriculture and livestock. This biodiversity must be preserved to the maximum extent possible in order to provide healthy and balanced diets for all.

Finally, ecosystems can also act as natural barriers to extreme weather events. A study published in Plos One states that nature alone, if preserved or restored, could stave off more than 45% of climate impacts over a 20-year period, saving more than $50 billion worth of flood damage.

Source : Cohen-Shacham, E., Walters, G., Janzen, C. and Maginnis, S. (eds.) (2016)

Ecosystems thus protect human life and health. Their disappearance, in view of the rapidly exploding demographics and increasingly frequent and intense climatic hazards, poses a threat to humanity.

Response

To address the decline and destruction of ecosystems crucial to our health, actions are being taken to reduce pressure on biodiversity, restore ecosystems, use biological resources in a sustainable manner and share the benefits arising from the use of genetic resources in a fair and equitable manner.

At the international level, governments party to the Convention on Biological Diversity have adopted a 10-year strategic plan (2011-2020), with 20 ambitious but realistic targets to be achieved and integrated into national action plans to make ecosystems resilient in order to continue providing essential services. Micronesia is working to preserve biodiversity in 30% of marine areas near the coastline and in 20% of terrestrial areas.[10] Ghana has been taking measures to combat overfishing. In July 2017, France adopted its national strategy to combat imported deforestation aimed at ending deforestation caused by importing unsustainable forest or agricultural products by 2030.[11] The European Union has adopted a directive pertaining to reducing the impact of certain plastic products on the environment.[12]

But the proposed solutions also feature at the heart of communities through different approaches or mechanisms. Naturally, awareness-raising and good practice sharing are an important component of the response: IMPACT (Indigenous Movement for Peace Advancement and Conflict Transformation) has been organising an annual camel caravan along the Ewaso Ngiro River in Kenya since 2013 to facilitate interaction between communities along the river and create dialogue around the need to preserve the ecosystem that sustains them. In Haiti, the project "Paré pas Paré" (Ready or Not), developed by the Indian Ocean Regional Intervention Platform (PIROI) of the French Red Cross, was set up to raise awareness on disaster risk reduction and thereby ecosystem protection.

Community influence on public authorities is also encouraged, as in the case of the Manila Bay development in the Philippines, where local residents have been called upon to make their voices heard. Community involvement may also be established through a financial agreement: Wetlands International has successfully established Biorights, a new innovative financing mechanism based on respect for ecosystems.

Micro-credits are allocated to communities to refrain from unsustainable practices and to actively participate in conserving and restoring the environment. If the project is completed and demonstrates a positive outcome, then the credits are transformed into definitive funding. Thus, communities are the winners in every respect.

By integrating environmental components into community support projects and including them in their implementation, the resulting effects are very compelling. In Ethiopia, with the support of local authorities and communities, vegetation has been replanted on hill slopes to prevent landslides, with 50% efficiency reported by the people receiving support to combat impacts of extreme weather phenomena, diversify nature by growing fruits and vegetables and improve the health of local populations, with a significant decrease in water-borne diseases.[13]

Yet, without overlooking the contributions of new technologies, it is still essential to emphasize the importance of promoting communities and building on their practices and know-how, including traditional know-how, by enhancing and complementing them. Finally, let us not underestimate the capacity of nature itself to adapt to climate change. A recent study published in Geology highlights the ability of some islands and their coral reefs to move and rise when faced with rising waters.[14]

1 - Nicolas Hulot Foundation For Nature and Man, *Climate Change: What role for ecosystems?*, 19 April 2017.
2 - Quirin Schiermeier, "Great Barrier Reef saw huge losses from 2016 heatwave" *in Nature*, 18 April 2018.
3 - Deforestation - Forest Hectares Destroyed Worldwide" *in* Planetoscope (statistics website).
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9 - WHO, *Secretariat Report on Traditional Medicine. 56th World Health Assembly*, 2003.
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12 - Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment.
13 -International Institute of Rural Reconstruction (IIRR) with Bahir Dar University, *Partners for Resilience (PfR) Ethiopia Integrated Risk Management Program: Final Evaluation*, Addis Ababa, October 2018.
14 - Megan E. Tuck, Paul S. Kench, Murray R. Ford, Gerd Masselink, "Physical modelling of the response of reef islands to sea-level rise" *in Geology*, 5 July 2019.

Example of good practice

INTEGRATED RISK MANAGEMENT BY PARTNERS FOR RESILIENCE (DUTCH RED CROSS, CARE NEDERLAND, CORDAID, RED CROSS AND RED CRESCENT CLIMATE CENTRE AND WETLANDS INTERNATIONAL)

Partners for Resilience works with communities in 11 countries to integrate climate change adaptation and ecosystem management and restoration into disaster risk reduction. It enables communities to withstand the impacts of natural hazards and support their development by securing or transforming their livelihoods.

Integrated risk management involves raising community awareness on the importance of ecosystems and landscapes as livelihoods and buffers against climate impacts such as droughts, floods, landslides, etc.

By integrating the dimensions of climate change and ecosystems, integrated risk management addresses not only imminent risks - namely weather risks - but also potential future hazards that could affect communities. For example, in Mali, Partners for Resilience promotes reasonable and equitable water management by reviewing the irrigation system with the goal of maintaining ecosystem services in wetlands and protecting against natural disasters.

Partners for Resilience, by collaborating with institutional, private and association partners, has succeeded in improving the living conditions of communities in the countries of intervention by creating cohesion between all stakeholders around a common interest - protection of natural resources - and by building on existing know-how.

Learn more: partnersforresilience.nl

Our recommendations

> Mobilise policymakers and the public to urge governments to comply with their legal obligations in terms of protecting and rebuilding ecosystems.

> Build community resilience through a multidisciplinary and multisectoral approach: consider human, animal and ecosystem health as a whole.

> Fund and implement long-term programs to build solid, sustainable resilience.

> Strengthen education, from early childhood to lifelong learning, by mobilising all civil society stakeholders (not only schools and families).

> Foster reduction of human activity environmental impact, particularly those of humanitarian operators.

> More sustainable land use, reduced overconsumption and food waste, elimination of forest clearing and burning, reduced use of firewood and reduced greenhouse gas emissions offer real potential for improvement, and would help address climate change issues related to land."

PANMAO ZHAI, Co-Chair of IPCC Working Group I

Land and Climate Change

Land surface is a fundamental resource according to the Intergovernmental Panel on Climate Change (IPCC) in its latest report, Climate Change and Land (August 2019). The land is under pressure from anthropogenic activities and climate change.

The frequency and severity of droughts, floods, storms and other climate-induced disasters have intensified over the past three decades, amplifying damage in the agricultural sectors of many developing countries, with the mounting risk of food insecurity, as warned by the Food and Agriculture Organisation of the United Nations (FAO).[1]

Ecosystems are being destroyed, crops ravaged, leading to reduced yields and higher prices. As when soil suffers degradation, it becomes less productive: it becomes more difficult to cultivate and loses its capacity to absorb carbon. Food security and livelihoods are thus severely impacted.

The situation is all the more alarming as it is the most vulnerable people who suffer the impacts of climate change, especially women, children and the poorest populations. For the most part, those who suffer the most are the poorest households in countries in the southern hemisphere (regions most vulnerable to climate change), mostly small producers who depend on subsistence farming, fisheries or livestock farming.

However, while climate change affects the land surface, land itself is sometimes an aggravating factor in climate change. “Agriculture, forestry and other land uses account for 23% of our greenhouse gas emissions,” stated Jim Skea, Co-Chair of IPCC Working Group III. At this rate, by 2050 the expected level will be 15 Gt of CO2, or 70% of the total acceptable emissions targeted in 2050, and therefore need to be significantly reduced right away in order to contain the temperature rise below 2°C.[2]

Yet, population growth requires constant land productivity to ensure food security for all.

Part of the solution may come from land itself. “Natural terrestrial processes absorb almost one-third of the carbon dioxide emissions from fossil fuels and industry,” indicates Jim Skea. It is therefore essential to reconcile the need for production with land protection in order to guarantee people’s food security without harming our environment, while striving to mitigate climate change.

Better land management and crop diversification over the long term can help address climate change. To this effect, reforestation and energy crops (bioenergy-producing crops) are some of the potential solutions. However, bioenergy must be exploited in a reasonable manner in order to be considered as renewable and not lead to negative impacts on soils.

1 - FAO *et al., The State of Food Security and Nutrition in the World*, 2018.
2 - Tim Searchinger *et al., Creating a Sustainable Food Future. A Menu of Solutions to Feed Nearly 10 Billion People by 2050,* World Resources Institute, 2019.

The French Red Cross facing Climate Change

The French Red Cross has been contributing at its own level, for several years now, to the struggle against the causes and consequences of climate change.
This has been reaffirmed at its General Assembly in 2019, in a resolution entitled "*Le climat change, La Croix-Rouge française aussi*" (The climate changes, the French Red Cross too). You will find hereafter some actions illustrating its involvement in the fields of mitigation and adaptation.

Organisational Social Responsibility

Mobilisation to address the effects of climate change takes place on two levels, as adapting to the present and future consequences of climate change is critical, but so is mitigating its causes. Climate change mitigation concerns everyone and is therefore everyone's responsibility. From individuals, companies, associations to governments, everyone can and must commit themselves at their level.

As a major player in the social and solidarity economy and international humanitarian action, the French Red Cross strives to optimise the social impact of its activities, as well as to control and reduce negative external factors. In other words, this involves better accountability for the environmental impact of day-to-day activities and strengthening the organisation's social commitment to all, with the aim of continuous improvement.

Reducing the environmental footprint of the daily activities of operators working for the French Red Cross is a major challenge. In this regard, the Red Cross must comply with:

> a duty of responsibility towards assisted populations who suffer the full brunt of climate change effects;

> consistency with regard to the general public and the principles of the International Red Cross and Red Crescent Movement;

> a duty of exemplary behaviour vis-à-vis operators who rely on the French Red Cross to exercise their commitment to the common good (volunteers, employees, students, donors and funders), but also to serve as models to demonstrate the way forward.

Thus, in 2019, the French Red Cross adopted an Organisational Social Responsibility (OSR) strategy, relayed across the country by its network of ambassadors. Among the measures taken were: the establishment of a national carpooling platform; opting for contracted green energy at the French Red Cross Campus (administrative services of the association); a national strategy for responsible procurement; awareness-raising on consumption methods, such as at the Solferino Residential Facility for Dependent Elderly Persons; a waste management policy, such as at the Margency Children's Hospital; clothes recycling and clean alternatives to cleaning products, such as at the Savoie Lamartine Early Childhood Care Facility; water consumption reduction, such as at the Regional Institute of Health and Social Training of Occitania; or, the energy performance inventory, such as at the Regional Delegation of New Caledonia.

All this is in line with activities based on sustainable development: sustainable, because it promotes activities that are respectful of man and the environment, sustainable, because on a long-term basis for the benefit of all, and sustainable, because it no longer pits "mitigation" against "adaptation" or "social" against "environmental."

"All THYM BUSINESS employees and I are proud to have accompanied the French Red Cross in the organization of the world conference on the consequences of climate change, in Cannes in the spring of 2019. This partnership is in line with our desire to be an actor in raising awareness on climate change and demonstrates our commitment to raising collective consciousness. As such, THYM BUSINESS has committed to a voluntary CSR approach with a program to offset our carbon emissions by planting nearly 3,000 trees each year.

GEOFFROY DUBOIS, CEO of THYM BUSINESS

The French Red Cross Helps Combat Causes Climate Change Causes through its Textile Branch

For over 30 years now, the French Red Cross has been collecting, sorting, donating and selling second-hand textiles. This well-established enterprise is driven by 16.500 volunteers in a network of 600 thrift shops and 300 changing rooms.

Thanks to the public's generosity, the French Red Cross collects more than 15,000 tonnes of used textiles each year, i.e., 7% of the volume collected in France. It is also stepping up partnerships with collectors/sorters to recycle surpluses and unsold items. In 2012, the French Red Cross signed an agreement with ECO-TLC, an eco-organisation, thereby affirming its commitment to the circular economy for sustainable development.

Solidarity shops, open to all audiences, offer a wide range of second-hand items and add value to what would otherwise be discarded. Textile customisation or creation workshops are arranged by volunteers in local units and in French Red Cross institutions. These activities not only foster social ties, but are also consistent with an eco-friendly and ethical approach. Volunteers play a primary role in terms of raising public awareness. The goals are to change behaviour, to alert on waste, to train on the right sorting gestures, but also to inform people about the traceability of the branch and its environmental impact.

Committed to a new strategy for its textile enterprise, the French Red Cross is currently taking a large-scale approach to strengthen its social and environmental impact through its network of solidarity shops. The first results are expected by early 2020.

French Red Cross Youth Committed to the Fight Against Climate Changes

French Red Cross youth have been committed to environmental issues for 10 years. This day-to-day hands-on commitment is embodied in the International Red Cross and Red Crescent Movement Youth Declaration (2009), which calls on National Societies and the international community to "adapt to climate change and respond to disasters." The rallying call is extended in the Youth Declaration of the French Red Cross (2010), which states that young people particularly want to invest in environmental protection and thus "rise to the environmental challenge that must guide our prevention actions and our daily practices, and promote sustainable humanitarian action."

Since then, young people have been regularly implementing measures, including raising awareness on environmental issues. Examples include "L'île coule" (sinking island) on the topic of climate-related migration and "Tri-attitude" (sorting-attitude) on waste sorting. This is a long-term commitment and, in 2018, the young people highlighted climate change and the environment as topics that motivate them to get involved. Young people are indeed the driving force of the French Red Cross on these issues, the "compass of our commitment" as mentioned by members of the general assembly of the association in 2019. They adopted a landmark resolution: "The climate is changing, so is the French Red Cross."

Drawing on this dynamic, on 24 August 2019 the youth organised a task day titled "Our Climate Priorities!" with more than 70 volunteers, to inspire, question, project, launch and initiate. After a morning specifically devoted to the question "Why is it urgent to act as the French Red Cross?" the participants worked on three topics:

> Social inequalities, environmental inequalities: for and with vulnerable people.
> Population resilience and social ties: for and with the general public.
> Minimising the Red Cross carbon footprint: for volunteers and employees.

The participants provided very comprehensive work that proposes ambitious actions and goals, in order to involve the entire French Red Cross in this dynamic. Among the priorities highlighted by participants were:

> The need to adapt our actions to the environment and the needs of target audiences.
> Reducing our carbon footprint.
> Strengthening social ties and including all those concerned in all our actions.
> Information, awareness and education.

The French Red Cross Response to Climate Change Overseas and Internationally: the Example of Regional Intervention Platforms

Since the early 2000s, the French Red Cross has been operating three Regional Intervention Platforms (PIR) for regions to the southwest of the Indian Ocean (PIROI, based in the Reunion), the Caribbean and Central America region (PIRAC, based in Guadeloupe) and in the South Pacific region.

These regions are highly exposed to natural hazards, whether of geological or climatic origin (cyclones and tropical storms, floods, droughts, forest fires). Over the past decade, several million people have been affected by so-called “natural” disasters in these regions, whose increasing intensity is linked to global warming, which in turn affects ocean temperatures and hurricane trajectories. Governments, particularly island states in these areas, often struggle to cope with the consequences of such disasters. Moreover, climate variability and change also result in increased vector-borne diseases such as malaria, dengue and yellow fever, and diarrhoeal diseases.

PIRs are involved with disaster risk management and climate change adaptation at several levels:

Advocacy activities

PIRs intercede with governments to better integrate natural disaster and health risk management as well as climate change impacts into national and international policies. They also ensure that disaster risk reduction becomes a national priority, especially through youth prevention.

Risk prevention

PIR awareness-raising activities are aimed at disseminating the risk culture and knowledge of the major natural and health risks associated with climate change to as many people as possible. The Reunion-based “Paré pas Paré” (ready or not) is a good example of a successful project that involves the communities through many activities and original educational tools for the general public and schools.

Disaster preparedness

Approximately 10 warehouses containing basic humanitarian supplies and emergency equipment (shelter, water treatment and sanitation, essential non-food items), as well as prior installation of water purification plants, provide a rapid, effective and efficient response to the needs of populations in the event of disasters.

The development or strengthening of contingency plans, early warning systems and epidemiological surveillance also serve this purpose.

Finally, human resources remain essential to disaster preparedness, which involves strengthening National Societies’ response teams and training volunteers and employees in the fields of emergency water treatment, logistics, basic health care, telecommunications, first aid and management.

Disaster response

The French Red Cross PIRs have emergency response units made up of professionals (technical advisors for water and sanitation, public health and telecommunications) and regional disaster response teams, consisting of volunteers and employees of the National Red Cross and Red Crescent Societies, who have been selected for their solid experience in emergency response. They also have physical and logistical means, complementary to and integrated into the relief chain, ready to be rapidly deployed to set up distribution operations (hygiene kits, temporary shelters, kitchen, tools for reconstruction), but also water supply, basic health care and telecommunications operations.

Post-emergency

PIRs also respond after emergencies by rehabilitating and rebuilding populations’ infrastructure and livelihoods, improving access to essential services (water, sanitation, hygiene, etc.) and promoting better climate-friendly planning and construction models.

Between 2019 and 2021, the “Agence Française de Développement - AFD” (French Development Agency) and Interreg Caraïbes will offer €8 million in funding for a project to reduce the impact of natural disasters, health crises and the effects of climate change on the populations of the three ocean basins where the PIRs and their partners are the main operators.


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Dedication
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Amazing
Action
FutureGen
Local Adaptation
Metamorphosis
Positive
DreamTeam
Simplicity
Reality
Possible
Inspiration
ActNow
Empowerment
Vulnerable
Prevention
Biodiversity
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THIRD PART

Our Nine Recommendations

1 Consolidate our knowledge: develop **multidisciplinary research** and build on science to better understand climate change, its direct and indirect effects on health and propose appropriate and innovative responses.

2 Understand human, animal and ecosystem health as a whole: **one Earth, one health.**

3 In the name of the principle of humanity, legally recognise **the right to a healthy and safe environment**, on an international scale.

4 Develop collective **climate diplomacy**, based on evidence and testimony in order to advocate for the most vulnerable people and do proposals in view of climate change.

5 Build **community resilience** through a multidisciplinary approach that builds on the culture and know-how of each community, while strengthening social and intergenerational ties: the interdependence of climate change consequences demands a comprehensive, participatory and inclusive approach.

6 Promote **education and reduce inequalities** to reduce vulnerabilities to climate change, ignorance and precariousness given their role in multiplying risks and consequences.

7 Increase and enhance the efficiency of long-term **funding** for adaptation programmes, to build strong and sustainable resilience by increasing the share of funding dedicated to adaptation, in addition to developing forecast-based funding.

8 Everyone must play an active role: reduce **the environmental impact** of our humanitarian actions and our activities in general.

9 Promote **fairer development models that are more respectful** of ecosystems and people in all their dimensions: the climate crisis is also an opportunity to rethink our economic and social models.

Thematic Recommendations

CHALLENGE 1

Mitigating Health Risks Related to Disasters

> Build community resilience through a multidisciplinary and multisectoral approach: closely link disaster risk reduction and public health development.
> Build community resilience through a participatory approach: acting for and with communities in an integrated manner, while drawing on their knowledge and expertise.
> Ensure continuity of health care after disasters and among the least accessible populations and raise their awareness on the importance of their health, which is often neglected in favour of basic needs such as food and shelter.
> Develop forecast-based funding for an early, appropriate and effective response.

CHALLENGE 2

Adapting to Heatwaves in Urban Areas

> Engage all levels: individuals, communities, education systems, health services, all the way to policymakers.
> Generalise early warning systems. Goal: 500 million people reached and informed by 2030.
> Strengthen social ties for greater solidarity and more effective communication.
> Generalise green solutions in cities (planting, cool areas) by drawing on nature (trees, plants, water).
> Make the National Red Cross and Red Crescent Societies catalysts for action: they must be the driving force behind new initiatives and promote solutions that work.

CHALLENGE 3

Preventing Epidemic Risks: Community-Based Approach and Public Health

> Build community resilience through a multidisciplinary and multisectoral approach: consider human, animal and ecosystem health as a whole.
> Build community resilience through a participatory approach: train and endow populations with capacities for monitoring, early warning and response, promotion of good practices, in order to better contribute to health systems.
> Develop research and use science to better understand climate change and its direct and indirect effects on health and propose appropriate responses.

CHALLENGE 4

Addressing Mental Health and Psychosocial Support Needs

> Build resilience of individuals and communities by designing appropriate, positive messages. The messages must incorporate behaviours designed to limit climate change, while ensuring that everyone continues to adopt a positive growth mindset in keeping with an outlook that accounts for consequences of climate change.
> Build community resilience through a participatory approach: act for and with communities, by strengthening social ties and community solidarity while respecting their cultural values.
> Include continuous psychosocial support at all stages:
- Prior to crises in a consistent manner in order to boost social cohesion and the capacity for resilience. These actions also entail strengthening humanitarian operators' capacities through appropriate training and support.
- During crises to limit the risk of exacerbated consequences on their mental health. This entails providing support activities such as psychological first aid or "child-friendly spaces."
- In post-crisis recovery, or as backing for continued adaptation to climate change effects, in order to foster positive constitution or reconstitution of individuals and communities.

CHALLENGE 5

Addressing Food Insecurity and Malnutritionn

> Build community resilience through a multidisciplinary and multisectoral approach for greater effectiveness and efficiency: associate food security, health and health care, sanitation and livelihoods.
> Build community resilience through a participatory approach: acting for and with communities in an integrated manner, while drawing on their knowledge and expertise.
> Act at all levels, from individuals to policymakers, households, communities, health services, the education system; communicate and raise awareness.
> Fund and implement long-term programs while building solid, sustainable resilience; develop forecast-based funding.
> Strengthen nutritional care by accounting for malnutrition as a whole (undernutrition and overnutrition).
> Strengthen innovative practices and methods such as early warning systems as well as rapid and safe cash transfers.

CHALLENGE 6

Addressing the Health Challenges of Climate-Induced Population Movements

> Establish universal health coverage to ensure access to basic health care for all, regardless of individuals' administrative status.
> Provide early psychological support, upstream of population movements, to persons at risk of displacement.
> Deploy health centres along migratory routes, within "humanitarian services points," and develop tools that make it possible to monitor the health of people in transit, and which are endowed with the capacity to protect their personal data, and avoid interruption of treatment.
> Provide access to primary health and psychological support services in all camps and places where migrants are detained.
> Adapt the infrastructure of camps hosting migrant populations to make them resilient to natural disasters, to limit the risk of contagion and maintain hygienic conditions that mitigate spreading of certain pathologies.

CHALLENGE 7

Preventing Health Needs Related to the Combined Effects of Conflict and Climate Change

> Integrate climate risk into operational planning in an armed conflict context in a coherent manner, including through funding based on forecasts and appropriate techniques, such as emergency preventive health programmes, water supply systems and capacity-building for communities and local authorities, including their health facilities.
> Build community resilience through a participatory approach: acting for and with communities in an integrated manner, while drawing on their knowledge and expertise.
> Strengthen coordination between local authorities and humanitarian operators in order to avoid creating parallel aid systems.
> Mobilise policymakers and the public to urge governments and warring parties to respect their legal obligations, in order to ensure access to and quality care for vulnerable persons.
> Encourage mitigation, in the general sense and especially among humanitarian operators, while avoiding possible adverse effects on communities.

CHALLENGE 8

Protecting Ecosystems to Promote Health

> Mobilise policymakers and the public to urge governments to comply with their legal obligations in terms of protecting and rebuilding ecosystems.
> Build community resilience through a multidisciplinary and multisectoral approach: consider human, animal and ecosystem health as a whole.
> Fund and implement long-term programs to build solid, sustainable resilience.
> Strengthen education, from early childhood to lifelong learning, by mobilising all civil society stakeholders (not only schools and families).
> Foster reduction of human activity environmental impact, particularly those of humanitarian operators.

THE COMMISSION FOR FUTURE GENERATIONS

Climate change concerns all of us, and we should expect its consequences to be higher in number and more intense in the future. To this effect, the solutions to be implemented must focus on a long-term perspective, so as to account for future generations.

Because these issues are crucial to their future, and, because no lasting solution can be established without the people's input, the Cannes World Conference "Taking Care of Humankind at +2°C" sought to consult with the youth and take their solutions into account, by assembling a Commission for Future Generations. Composed of 25 community-focused young leaders from all over the world, the Commission reflected on challenges related to climate change adaptation and mobilisation.

During the discussions, around 15 countries were represented, with 15 women and 10 men, bringing together a wide variety of cultures, backgrounds and opinions (KEA Medicals, Young Leaders for Health, Game Lab, IFMSA, One Young World Europe, CliMates, EHESP, HealthSetGo, European Students' Union, MP Productions). Along with the 6 members from the French Red Cross, 19 participants came from the medical, scientific, association, academic, digital and communication communities, thus emphasizing the willingness and need to open up to others in order to rise to a challenge common to all humanity.

Under the leadership of Marie-Esther Rouffet, the Commission for Future Generations met during the two days of the conference. Its distinctiveness resided in the absence of imposed restrictions or agenda, in order to offer a fresh and novel perspective. The conference resulted in participants developing a plea, #Act4ClimHealth, as well as a practical tool that aims to mobilise people around climate and health issues.

Conclusion

Our Responsibility

Beyond the sometimes-prevailing sense of powerlessness given the gravity and urgency of the situation, we have the capacity to limit the causes and consequences of climate change. The combination of mitigation and adaptation actions must begin with a good understanding of the phenomena, their complexity and interdependence.

The consequences of climate change on health may sometimes seem abstract or distant to some, but they are present, increasingly serious, and threaten the very existence of some island states. Their severity and characteristics may vary from season to season or from one region to another, but they are increasingly noticeable. However, health remains the poor relation in addressing climate change with only 0.5% of global funding dedicated.

The health consequences of climate change are serious, complex, and some are unknown

The consequences of climate change are complex because they affect health directly and indirectly: directly during natural disasters or epidemics, for example due to increased mortality and morbidity; indirectly through disruption of health systems or decline of social determinants related to health (food insecurity, migration, conflict, etc.). While most of these consequences have been presented in this paper, the spectrum of future consequences is broader, often irreversible and, in part, still unknown.

Moreover, in terms of both causes and consequences, it is almost impossible to isolate a single climatic factor. For example, poor harvests due to limited and difficult access to resources, extreme drought and community tensions can have impacts on food security, physical and mental health, financial resources, population movements, the exacerbation of latent conflicts, etc. The interconnectedness of the various causes and sectors affected by climate change must be integrated into our response and therefore requires caution and a good knowledge of all the issues.

Humanitarian operators and the International Red Cross and Red Crescent Movement as a whole have a key role to play

The consequences of climate change act as a catalyst for vulnerabilities. They mainly affect already fragile populations and generate new vulnerabilities. Indeed, humanitarian operators' activities are already affected by climate change, will continue to be affected, and they will need to account for these changes to a greater extent in the future.

Whether in terms of assisting vulnerable populations on a daily basis or during crises, humanitarian workers are already at the forefront in terms of dealing with the health consequences of climate change. Their experience, expertise and capacity to act, both globally and locally, are valuable.

Finally, they are endowed with a major asset in overcoming the current deadlock: the trust of the majority. Indeed, they can rely on a firm community presence, but also on their ability to engage with other operators, to cooperate with all types of stakeholders and to mobilise as many people as possible.

The health consequences of climate change require us to thoroughly revise our thinking

This is the first time ever that humanity is facing challenges of this magnitude in its history, and the means at our disposal are inadequate. They are not conducive to designing global or long-term solutions. Given the complexity of climate change, the seriousness of the health consequences and the intricacy of the various sectors affected, the response must be comprehensive and collective.

Comprehensive, as it must associate mitigation and adaptation measures above all. Indeed, the effects of climate change cannot be addressed without addressing its causes as well. Ecosystems must be protected, carbon impact limited, culture of waste abandoned and rational consumption encouraged.

Comprehensive still, because we need a multisectoral and multidisciplinary approach. Because the impact of climate change on health is multifaceted, responses will have to go beyond the usual isolated approach to thought and action. We must involve humanitarian operators, researchers, scientists, economists, doctors, donors, etc., in the service of an integrated and holistic response.

It is in this sense that the response must be collective and requires cooperation between the various stakeholders. Whether it is governments, businesses, citizens, research, associations or international organisations, none of them have the means to act alone. It is therefore a matter of building and promoting new models of partnership and cooperation.

Collective and participatory, because communities affected by climate change impacts must be part of the solution, by placing their knowledge and know-how at the very heart of the action. Indeed, only a participatory approach will help build populations' resilience in a lasting way.

"Let's build together stronger and more united societies and people in the face of climate change-related disasters in France and around the world!"

JEAN-CHRISTOPHE COMBE, Managing Director of the French Red Cross

Stéphane Rémael@LaCompany

The health consequences of climate change require new and tailor-made responses

In order to deploy resources commensurate with the challenges, we need to be creative; we need to invent new solutions and to innovate. The unprecedented and sometimes obscure nature of the health consequences of climate change calls for measured action, which can only be achieved by leaving much room for experimentation.

Paradoxically, however, innovation in this context means returning to our most fundamental principle: Humanity. Climate change violates a number of individual and collective rights. More and more citizens are taking legal action to have their right to health and a healthy environment recognised. The right to safe drinking water and sanitation was recognised by the United Nations General Assembly in July 2000. The Oslo Principles on Climate Change Obligations set forth that each individual is entitled to the "right to live in an ecologically healthy environment conducive to his or her health, well-being, dignity, culture and development." Similarly, the French Constitutional Charter for the Environment dated 2004 states in its first article that "everyone has the right to live in an environment that is balanced and respectful of health."

For more than 150 years, the International Red Cross and Red Crescent Movement has been defending vulnerable people when their humanity and most basic rights are violated. Need we even mention that Henry Dunant, Founder of the Movement, initiated international humanitarian law in the 19th century, with the visionary goal of protecting the forgotten in battlefields, the most vulnerable who suffer the effects of hostilities without having contributed to them?

One of the main challenges of the 21st century is climate change and its impact on human health. Thus, it is our duty to advocate for the most vulnerable, in order to restore their dignity and their most fundamental rights. It is our duty to advocate for each individual's right to a healthy environment before public and private decision-makers. It is our duty to work towards a humanity that is aware of its limits, is respectful and altruistic. It is our duty to not give up, to not forge ahead with resignation, and not to extinguish the hopes of a concerned youth. It is our duty to listen to scientists and to trust field operators. It is our duty to hold everyone accountable. And it starts with ourselves.

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