

# RCRC

Red Cross Red Crescent

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## Climate of fire

Long after the flames die down, wildfires leave their mark

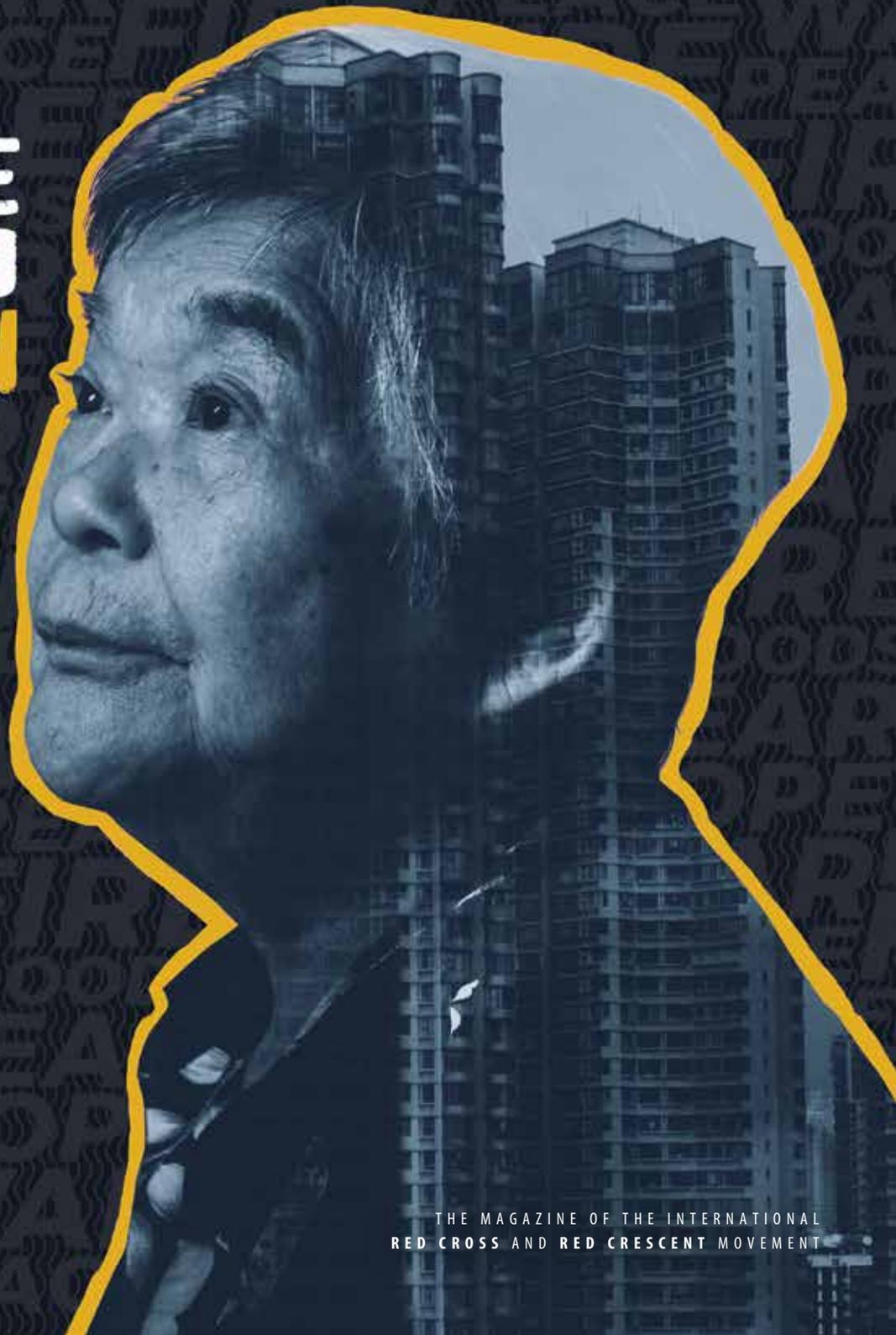
## Climate of war

The overlapping impact of climate change and conflict

## Climate of hope

What we all need to do, together, to adapt to a warming world

CLIMATE  
FOR **SPECIAL CLIMATE  
CHANGE ISSUE**  
ACTION



THE MAGAZINE OF THE INTERNATIONAL  
RED CROSS AND RED CRESCENT MOVEMENT

# The International Red Cross and Red Crescent Movement is made up of the International Committee of the Red Cross (ICRC), the International Federation of Red Cross and Red Crescent Societies (IFRC) and the National Societies.



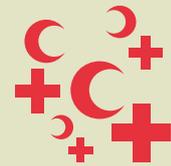
ICRC

**The International Committee of the Red Cross** is an impartial, neutral and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance. The ICRC also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles. Established in 1863, the ICRC is at the origin of the Geneva Conventions and the International Red Cross and Red Crescent Movement. It directs and coordinates the international activities conducted by the Movement in armed conflicts and other situations of violence.



International Federation of  
Red Cross and Red Crescent Societies

**The International Federation of Red Cross and Red Crescent Societies (IFRC)** is the world's largest volunteer-based humanitarian network, reaching 150 million people each year through its 190 member National Societies. Together, the IFRC acts before, during and after disasters and health emergencies to meet the needs and improve the lives of vulnerable people. It does so with impartiality as to nationality, race, gender, religious beliefs, class and political opinions. Guided by Strategy 2020 — a collective plan of action to tackle the major humanitarian and development challenges of this decade — the IFRC is committed to 'saving lives and changing minds'.



**National Red Cross and Red Crescent Societies** embody the work and principles of the International Red Cross and Red Crescent Movement in more than 190 countries. National Societies act as auxiliaries to the public authorities of their own countries in the humanitarian field and provide a range of services including disaster relief, health and social programmes. During wartime, National Societies assist the affected civilian population and support the army medical services where appropriate.

## The International Red Cross and Red Crescent Movement

is guided by seven Fundamental Principles:

**humanity, impartiality, neutrality, independence, voluntary service, unity and universality.**

All Red Cross and Red Crescent activities have one central purpose:

**to help without discrimination those who suffer and thus contribute to peace in the world.**

# Small numbers, tremendous change

One degree Celsius. It doesn't sound like much. Most of us wouldn't even notice if the air around us went up or down by that amount. Nearly everywhere on earth, the thermometer goes up and down far more than that just between daytime and night.

But it's a very powerful number: 1°C is the average amount that global temperatures have risen since pre-industrial times due to human activity.

And what a difference a degree makes. Temperature is an expression of energy and when more energy is put into the atmosphere, the land and the oceans, weather patterns change. Heatwaves get more extreme and periods of rain and floods are more intense and unpredictable, while other areas may face longer droughts, aggravated by higher temperatures. Ocean currents are altered and sea levels rise, sending storm surges further inland.

We are already seeing the impacts. Droughts are creating perfect conditions for wildfires, from Indonesia to the Arctic Circle in Sweden. The powerful tropical storms last year that devastated coastal communities and caused record damages are now three times more likely due to climate change.

How could it be that such a seemingly insignificant difference in temperature has such a powerful impact, especially when that change has happened over more than a century?

First, we have to understand that the 1°C figure is an average. Oceans warm more slowly than land but, in some regions, average land temperatures have already risen by more than 3°C in the last 150 years.

And temperature rise is not steady. We see much more rapid changes in the extremes. In the last several years, record-setting — and even life-threatening — hot spells have hit in Canada, India, Iraq, Japan, Pakistan and the United Kingdom, among others.

So what happens when global temperatures rise, as predicted, even further? This was exactly the question asked to the Intergovernmental Panel on Climate Change (IPCC) as part of the Paris Agreement.



Photo: Associated Press

What they discovered should alarm anyone who cares about life on earth. In short: drastic steps need to be taken to limit temperature rise to 1.5°C and even then, the storms,

droughts and other climate phenomena related to climate change will get far worse.

If we limit the rise to 1.5°C, we could manage the impacts by climate-proofing our cities, shorelines, farms, etc. If we fail, and average temperatures rise by 2°C, the impacts will be far more severe. Even limiting warming to 2°C will require drastic changes in energy use. But if we continue with the status quo, we are headed to at least 3°C and at this point (and even at 2°C), it will be very difficult and expensive to adapt. Some impacts will likely be irreversible.

The situation is dire. But don't lose hope. We have momentum. There is growing volume and urgency to calls for an energy transition that prevents even more dramatic consequences. There is an equally urgent call to help the most vulnerable among us adapt (see more on page 26). So what do we need to do?

First, we need to recognize that climate change is already here; this is no longer a matter for the future.

Second, we need to invest more in prevention, rather than just responding to an ever-growing number of disasters. This includes systems that anticipate climate risks and allocate funds for prevention and preparedness before floods, fires and droughts have a chance to wreak their havoc.

Third, we need to work together. These are complex problems and they require responses from nearly every sector. We need multidisciplinary responses that combine disaster risk planning, disaster law, emergency financing, urban planning, agriculture, water management, scientific research, education and other sectors. And we need a combination of global commitment, national planning and local implementation.

Fourth, we need to flag the particularly harsh impact climate change is having on people living in conflict situations or who are on the move because of violence, insecurity or extreme poverty (see page 18).

Lastly, we need to show that it's not just about what we lose if we don't act, but what we gain if we do. Climate-proofing our economies and our communities will not only save money, it will reduce risk and provide the stability needed to encourage prosperity in places now too fragile to thrive.

Yes, the IPCC report is scary. It shows how even small degrees of warming carry tremendous consequences. But we can reduce and manage the risks if we're willing to take the big steps necessary. The coming decade will be crucial.

## By Maarten van Aalst

Maarten van Aalst is the director of the Red Cross Red Crescent Climate Centre. He is based in the Netherlands.

In stories throughout this edition, Maarten van Aalst explains the links between climate change and the wildfires, droughts, storms and cold snaps we increasingly see today.

# In brief...

## Two ICRC health workers executed in Nigeria

Two ICRC health workers held hostage in Nigeria by an armed group were murdered by their captors this year. The two women, who worked in a health centre supported by the ICRC, were abducted in March during an attack in the north-eastern town of Rann. Six months later, on 16 September, Saifura Hussaini Ahmed Khorsa, a midwife, was deliberately killed. The second execution, of Hauwa Mohammed Liman, also a midwife, came almost a month later. Their ICRC colleagues were devastated. "Hauwa and Saifura's deaths are not only a tragedy for their families, but they will also be felt by thousands of people in Rann and other conflict-affected areas of north-east Nigeria where accessing healthcare remains a challenge," said Patricia Danzi, ICRC's regional director for Africa.

## Red Cross responds to migrant 'caravan'

National Red Cross Societies in Honduras, Guatemala and Mexico mobilized to provide first aid, medical care and help in maintaining family links to thousands of people moving north through Central America in October. Volunteers report that many of the people they helped, a majority of whom are women and children, suffered from dehydration, stomach infections and foot injuries. The IFRC and National Societies' approach to all migrants is strictly humanitarian, based on the belief that everyone, regardless of migration status, should be treated with dignity and respect.

## Floods put millions at risk in Nigeria

Torrential rains caused Nigeria's two major rivers, the Niger and the Benue, to burst their banks in September, devastating crops, killing livestock and impacting more than 1.9 million people. "We lost our rice farm and fishnets, and could only salvage a few household items before the flood submerged our house," said Yahaya Musa, sitting inside a temporary shelter he constructed next to his flooded home. The disaster affected 34 of the country's 36 states and has caused 141 deaths. In response, the IFRC launched an emergency appeal on behalf of the Nigerian Red Cross Society, seeking US\$ 5.4 million to support 300,000 of the most vulnerable people for nine months.

## DPRK: floods and landslides

Heavy flooding and landslides in the Democratic People's Republic of Korea (DPRK) killed at least 76 people and injured 35 others in the provinces of North and South Hwanghae in September. Some 75 people, including many children, were still missing following the disaster. DPRK Red Cross volunteers and staff conducted search-and-rescue operations, giving first aid and psychosocial support to survivors, and transporting injured people to hospital. The Red Cross also gave out blankets and hygiene kits and deployed mobile water treatment plants. More than 10,000 people were displaced by the floods, which destroyed some 800 buildings including homes, clinics and schools.



Photo: Benjamin Suomela / Finnish Red Cross

## Destructive earthquakes and tsunami

A series of earthquakes triggered a powerful tsunami on the Indonesian island of Sulawesi in late September, killing more than 2,000 people, injuring 10,000 and damaging more than 67,000 houses. "The aftershocks make me nervous," said one survivor, a woman named Rosnawati whose home of 20 years was destroyed. "We have nothing left," said her 60-year-old mother. Nearly 600 volunteers from the Indonesian Red Cross Society, known as Palang Merah Indonesia, went to the hard-hit city of Palu to help distribute relief items, provide medical care, assist people in coping with their trauma and fear, and help reunite families separated by the earthquakes and tsunami. As the rainy season approached, communities faced the further risk of waterborne diseases.

## ICRC facilitates detainee releases in South Sudan

The ICRC facilitated the release of 24 individuals detained in relation to the conflict in South Sudan, marking the first release of prisoners supervised by the ICRC following the signing of the latest peace agreement in which parties to the conflict agreed to free detainees. "Our role in this week's releases was to first ensure that all detainees were handed over voluntarily and that they had the opportunity to confidentially share their concerns," said François Stamm, the head of delegation for the ICRC in South Sudan.

## Iraq: Red Crescent responds to water crisis in Basra

After a water contamination crisis in the southern Iraqi city of Basra led to more than 6,200 hospitalizations, the Iraqi Red Crescent Society provided desalination and purification systems. As both the Tigris and the Euphrates rivers, major sources of potable water for Basra's 4 million residents, fell to low levels at the same time, the salty waters of the Persian Gulf were rising, polluting scarce water supplies. Hospitals in Basra saw an influx of patients suffering from diarrhoea and various intestinal infections, according to the Iraq Red Crescent.

## Voices

*"I was looking out the window of my room when I saw the waves coming. I grabbed my wife, who was in the room with me, but the waves ripped through the house and carried us inland."*

Pak Junaidi, whose two-storey home was broken to pieces when a tsunami, created by a series of earthquakes, tore through his home on the Indonesian island of Sulawesi.

## Humanitarian index

- 1:** Number of degrees in Celsius that the earth has warmed since the pre-industrial era.\*
  - 1.5:** Number of degrees the earth is expected to warm on average (above pre-industrial levels) between 2030 and 2052.\*
  - 60:** Approximate percentage of water lost in urban and rural water systems due to leaks or other malfunctions in certain parts of Jordan, Iraq and Lebanon.\*\*
  - 84.2:** Percentage of natural hazards recorded by the EM-DAT emergency data service that have 'weather-related triggers', with floods and storms alone accounting for almost two-thirds of those hazards.\*\*\*
  - 730 million:** Number of people affected by floods between 2008 and 2017.\*\*\*
  - 827 million:** Number of people estimated to have been impacted by incidents of drought and extreme temperature between 2008 and 2017.\*\*\*
  - 1.65 billion:** Amount in dollars of estimated damage caused by disasters between 2008 and 2017.\*\*\*
- Sources: \* Intergovernmental Panel on Climate Change; \*\*ICRC, \*\*\*EM-DAT emergency data service.

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## ■ Cover story

### The great heat

It's 5 o'clock in the morning and 82-year-old Shuk-man Wong is down at the park, trying to beat the heat as temperatures in Hong Kong soared this past summer during record-setting heatwaves. Is this a sign of things to come as big cities confront global warming?

### The lost cabin

A native elder returns to a remote hunting and fishing cabin to see if it survived a devastating fire. Along the way, he wonders whether the cabin is still there and whether his traditional way of life will survive the latest blows of climate change.

### The host town to the ghost town

The tiny Canadian town of Wells, British Columbia, was relatively lucky. It was spared by fires that destroyed some communities nearby. But as a gift shop owner and a nearby farmer in Wells explain, even far-away fires can have long-term impacts on local economies.

### "Nobody sleeps when it rains"

After fires swept the hills above Bonaparte, British Columbia last year, mudslides are the long-term legacy. "The scariest part is when they start at night in the hills above home. All you can hear are rocks rolling and trees breaking," says one resident. "But you don't know if they are heading towards you," adds another.

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## ■ Focus

### 4 Mysterious ways

Climate change works in mysterious ways. In the Mongolian steppe, climate change is causing extreme cold snaps that kill livestock and leave communities struggling. Elsewhere, it's leading to unusual phenomena: fires in the Arctic Circle, drought and flooding in the Sahel, record-setting heatwaves in unlikely places. Photos from around the Red Cross and Red Crescent world tell surprising stories.

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Will a warming planet lead to a more violent world? Or will it simply continue to inflict more suffering on those living through conflict? Or both? An analysis of the intersection between climate change and conflict.

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It took more than a century of human activity to raise the global temperature by 1 degree Celsius. Reversing that trend, therefore, is not something that will be fixed overnight. But that doesn't mean there's no hope. Here are ten things global organizations, National Societies and individual humanitarians can do to help reduce suffering brought on by climate change.

## ■ Resources

All the most notable publications, videos and online resources from around the Movement.

We gratefully acknowledge the assistance of researchers and support staff of the ICRC, the IFRC and National Societies.

The magazine is published twice a year in Arabic, English, French and Spanish and is available in 190 countries, with a circulation of more than 45,000.

The opinions expressed are those of the authors and not necessarily of the International Red Cross and Red Crescent Movement. Unsolicited articles are welcomed, but cannot be returned.

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# The great heat

As the planet heats up, cities and the people in them may bear the brunt of high temperatures.

IT'S 5 O'CLOCK IN THE MORNING and 82-year-old Shuk-man Wong is already down at the park, playing her *erhu*, a type of traditional Chinese bowed instrument. It's one of the few ways she has found to beat the heat — and enjoy a little music — as temperatures soared in Hong Kong (China) during record-breaking heatwaves this past summer.

"I cannot do this during the day when it gets hot, so I come here at 5 or 6 in the morning," she says. "I can exercise, talk with other people, but especially I can play my *erhu*. My house gets too hot during the day and I can only play for a little while because I must keep my door wide open to let the air circulate. But then the neighbours complain and I must stop."

Wong lives in a multistorey apartment building in Kwun Tong, a district in Hong Kong that registered the highest temperatures during the city's streak of extremely hot nights between May and August.

Kwun Tong district is also home to the city's highest proportion of low-income and elderly people who are often the most vulnerable to heat,

yet have little means to protect themselves. With little ventilation and often no air-conditioning, the stifling heat is even worse inside the tiny one-room flats in which many people like Wong live.

When it's time for lunch, for example, Wong cooks in the hallway. It's simply too hot inside the apartment. "I must bring my rice cooker out here," she says. "And I eat here every day, because it is cooler here. I am suffocating inside".

In Wong's ten-square-metre flat, the one tiny window is blocked by a stack of her belongings: she has little room to choose where to store her things.

Originally from Fujian, China, she has been living in Hong Kong for more than 30 years and she's noticed a change over the years. "Hong Kong is getting hotter," she says, adding that on some days, it keeps her from doing much of anything. The worst was the day they call 'the great heat' when it reached over 36.6° Celsius.

"For the day of the 'great heat', on 23 July 2018, I did not dare to go out, but then I felt lonely," she recalls. "So I finally went to the elderly community centre".

Catherine Wong Kuk-ching, senior manager of the True Light Villa District Elderly Community Centre, knows situations like Wong's very well.

Photos: Alexia Webster/IFRC

# Degrees of desperation

Fires in the Arctic Circle. Prolonged drought across much of Africa and the Arabian Peninsula. Heatwaves in nearly every continent. Massive hurricanes and cyclones in the North Atlantic and southern Pacific.

These are just some of the ways in which climate change manifested itself in 2018. While none of these phenomena is new, their intensity, scale and frequency are setting new records and taking a heavy toll on people from big cities to remote rural areas.

According to a recently released report from the Intergovernmental Panel on Climate Change, all these phenomena will become even more frequent and more intense based on what's in the atmosphere already. And they will get much worse if major steps are not taken quickly to reduce carbon emissions and greenhouse gases.

In this issue of *Red Cross Red Crescent* magazine, we bring you to Hong Kong, where record-setting heatwaves hit elderly people particularly hard and give a hint of what's to come for big cities (page 4); we take you to remote rural Canada,

where another season of unparalleled wildfires threaten entire communities that make their living off the land (page 8); and we analyse the interaction between climate change and armed conflict in the Arabian Peninsula, the Middle East and the Sahel (page 18).

"Around the world, people are now recognizing that climate change is about people being hurt today, not a long time in the future," says Maarten van Aalst, the director of the Red Cross Red Crescent Climate Centre based in the Netherlands.

So the response cannot wait. "There are two aspects to that," says van Aalst. "The first is to avoid future risks by reducing emissions and we need to speak out from a humanitarian perspective to say, 'If we do not reduce these emissions we are in trouble'. But even if we do reduce emissions, we still face higher risks based on the climate change already under way. So the second, and equally important, aspect is that we need to do a lot more to help vulnerable people deal with the various serious impacts climate change is having on their lives."



To beat the heat in her stifling, tiny flat, Hong Kong resident Shuk-man Wong goes to the park early every morning and plays the *erhu*, a traditional Chinese instrument. Left, the Hong Kong skyline is a graphic example of the challenges megacities will have to face in dealing with climate change.



Like many elderly residents, Shuk-man Wong visits a local senior centre to take advantage of the air-conditioning (above). During heatwaves, Hong Kong Red Cross volunteers visit elderly people who live alone to make sure they are taking measures to protect themselves from the heat (right). Photos: Alexia Webster/IFRC

“Elderly people, especially when living alone, can suffer badly from the consequences of heat,” she says. “To protect themselves, they must stay at home, but this is risky as they can start to feel very isolated and, in the worse cases, develop depression.

“Also, many people do not use air-conditioning because it is too expensive for them. So community centres can become people’s ‘second’ homes. They come here to talk with their friends and for the programmes we offer. But, of course, they also like to cool down in the air-conditioning we have at the centre.”

Heatwaves are not just a matter of discomfort. They can be deadly. Elderly people or those with chronic illnesses are more vulnerable to two very common symptoms: heatstroke or dehydration. In eastern Canada, some 70 people died during the 2018 summer heatwave, while record temperatures in Japan killed more than 90 people this year. In May, a heatwave in Karachi, Pakistan claimed 65 lives. Many heatwave deaths aren’t even counted as such. Contrary to floods and storms for instance, where these statistics are gathered as standard practice.

Compared to heatwaves elsewhere, Hong Kong’s is far from the hottest. A critical factor is not necessarily how high the temperatures go, but whether people have access to ways of cooling down.

This is one reason that the Hong Kong Red Cross reaches out to elderly people and, in some cases, visits their homes to ensure that people know how to take care of themselves in the heat.

“Hot temperatures are dangerous for elderly people,” explains Irene Lui Sau-lan, manager of

the local emergency service of the Hong Kong Red Cross. “Many of them live alone and cannot count on the support of family. Often this situation is made worse when they live with chronic illnesses. Heat also affects their everyday life, reduces the time they can spend outdoors and makes them feel lonely.”

The Hong Kong Red Cross tries, in particular, to keep in touch with single elderly people. “During home visits our volunteers talk about health risks and what steps people can take to keep cool when it’s very hot,” says Sau-lan. “Volunteers check that cooling equipment works well and there’s no risk of fire. It is simple things. But it can help.”

For Shuk-man Wong, these are very real concerns. “I have heart disease and three blood vessels are blocked. I cannot stand the hot weather. I keep the door open when I sleep. I just leave it open.”

The visits from the volunteers, she says, were a welcome relief. “The volunteers cared about me very much,” she says. “They reminded me to use the ‘call and care service’ to get help if I am unwell. They gave me a whistle to draw attention in case of fire. They also noticed my ten-year-old electric fan. The fan had no cover but I did not want to throw it away. They helped replace it and now I have a better one.”

### The warm season

According to the Hong Kong Observatory, the city’s leading meteorological agency, the heatwaves are part of a significant long-term warming trend, which data from 2017 and 2018 confirm: 2017 was warmer than usual, with 41 hot nights (above



## Silent killers

Heatwaves are sometimes referred to as invisible disasters. “Heatwaves are tricky; they are silent killers,” says Maarten van Aalst, director of the Red Cross Red Crescent Climate Centre in The Hague, Netherlands.

“With heatwaves, it can be elderly or chronically ill people dying of dehydration in their rooms, often on their own. So it’s not as visible. It only pops up in health statistics weeks later. Initially these deaths are not counted by doctors as heatwave-related deaths.”

Van Aalst uses his own country as an example. In 2003 and 2006, record heatwaves hit Europe. In those two years combined, more than 1,000 people in the Netherlands died due to the heat. But even at the time, few people realized the extent of the problem. “Every Dutch person knows about the 1953 floods in which 2,000 people died, but no one knows about those two heatwaves. They are really big disasters.”

Until recently, people in the Netherlands never thought of themselves as being prone to heatwaves. But their frequency in the country has increased by a factor of ten in recent decades so, in 2006, the Netherlands created a national heatwave plan based partly on propositions from the Netherlands Red Cross. The National Society also developed programmes for reaching out to ensure elderly people take precautions against the heat. Still, many people died in the autumn of 2006 when a heatwave struck unexpectedly late in the year.

“The Netherlands is a well-developed, rich country,” says van Aalst. “But what about a farmer in a far less-developed country, on his own, not being able to count on all these forecast systems and support from authorities? If a country with all these means can get thrown off, how will it play out for people who are so much more vulnerable?”

28°C) and 29 very hot days (above 33°C), ranking the highest and the sixth highest on record respectively. The 2018 ‘warm season’ opened with the hottest May on record since 1885 — with temperatures hitting 36.7°C.

“When we talk about climate change, we look at the big picture,” says Lee Sai-ming, senior scientific officer at the observatory. “We look at how the climate changes over long periods of time, not at specific years. But if put in the context of climate change, this year’s heatwaves in Hong Kong, and the many heatwaves going on around the world, show that it is increasingly likely to have very hot summers.”

Temperature readings in Hong Kong since 1885 show that heat levels are indeed rising — at a rate of 1.2°C per century, though data show that the rate of increase has become faster in the last few decades.

### Are cities making things worse?

But as cities get larger and larger, do they also play a role in pushing temperatures on the streets even higher? According to studies conducted by the Hong Kong Observatory, urbanization contributes to about 50 per cent of the warming in cities like Hong Kong.

Tall buildings block air circulation and reduce wind speed, limiting the sea breeze that the city would naturally enjoy. In addition, buildings made of dense materials such as concrete and steel trap and retain heat longer than wooden structures used in suburban and rural areas.

At night, buildings release the heat they absorb during the day, but that heat cannot easily escape the narrow spaces between the lower floors. This

means the city is less able to cool down at night, compared to rural areas. Studies show that temperature differences between countryside and the city can be very high. In some cases, records show minimum temperatures in urban and rural areas differing by as much as 10°C.

There are other elements, too. “Emissions of traffic and transportation contribute to the formation of rain-bearing clouds, so urban areas can get more rainfall than rural areas,” explains Sai-ming. “A study we conducted shows that the increase of rainfall in Hong Kong is higher than in rural areas. A possible cause of this is high urban activity.

“So, because of urban activities and hotter temperatures, the intensity and frequency of precipitation are also increasing in Hong Kong. Hot weather causes more evaporation from the oceans and the warmer atmosphere can hold more moisture. So when it rains, the chance of extreme rainfall increases.”

### What now?

What can be done in response to a trend that seems irreversible? In short, the city needs to adapt. “We can increase greening in the city,” suggests Sai-ming. “Planting more trees and vegetation can help cool the city without increasing carbon emissions. We can use heat-proof materials to reduce the amount of heat absorbed by buildings and use reflective materials on the top of structures, to reflect more solar radiation back to space.” ■

### By Elena Pedrazzani

Elena Pedrazzani is communications officer for Red Cross Red Crescent magazine.

# The lost cabin

**A native elder returns to a remote hunting and fishing cabin to see if it survived the Elephant Hill fire of 2017. Along the way, he wonders how his traditional way of life will weather climate change's latest blows.**

**A**S WE PULL OUT of the parking lot, the man at the wheel of the 4x4, Terry Deneault, explains we'll have to take a long detour to get to our destination. The country road we were planning to take had been washed out the night before. "There's mud all over the place," Deneault tells me. "So for safety, we're going the long way."

After the fires in 2017 in this central region of British Columbia, Canada, Deneault says, mudslides began rolling down the mountains all over the territory. As the charred hillsides can no longer absorb rainfall and the soil is not held in place by living root systems, water and earth often come tumbling down, taking out roads, bridges, fences and sometimes even cars.

The slides, he adds, can hit at any time. "These washouts come down really fast now," he says. "You never used to see this. The rain right now is what we are afraid of."

Deneault is known as a 'cultural knowledge-keeper' for the Skeetchestn Indian Band and as we wind our way upwards, it becomes clear why. He tells stories of growing up in a remote mountain camp with his grandfather where he learned how to hunt, fish and gather plants in the traditional way. Some of his stories are funny, some are sad. He talks about being taken away to a residential school as a boy, then returning as young man and spending all of his time working to keep the traditional way of life alive. With the pressures of the modern world, development and now these fires and mudslides, it's not an easy job.

## **Everything has changed**

"The place I'm taking you to, is one of the lower-elevation places that is plentiful with everything that we need," says Deneault. "But because of the mudslides, we have to go way around to get to our mountain," he says, adding that getting to hunting and gathering grounds normally takes one hour. Now it can take three times that. "This fire has literally changed everything. It's had a deep impact on our culture.

"The Elephant Hill fire burned 75 per cent of the territory that I'm taking you to," he continues. "So now what do we do? How do we feed ourselves traditionally? Where do we go to find the berries, the plants, the roots to put the medicines in our body that keep us going?"

The wildlife is also suffering as there are no saplings or clover for the moose, deer and other large animals to eat. "We're having reports of starving

The Elephant Hill fire of 2017 scorched much of the forested mountains that the Skeetchestn Indian Band rely on for hunting and fishing. Photo:

Marko Kokic/Canadian Red Cross

moose because they survive on the twigs [of young saplings] and clover. Now, it's all gone."

Until the fires, almost everyone in this community of 250 people relied on the land for a significant portion of their sustenance. After the fires, many subsist on imported food.

"Unfortunately, we have to rely on the system now," says Deneault, who as knowledge-keeper runs numerous activities to keep traditional ceremonies, language, music and food gathering alive. "I was bringing back the hunting camps, I was bringing back the fishing camps. I was bringing back the teachings for our children so they could go hunt and gather whatever they needed for the winter. So all this has really changed us."

### The last straw?

The problem, says Deneault, is that the fires came on top of other pressures on the traditional way of life. "In the old days, in my era, you could go



***"What does climate change really mean? I know what it's done to us already but how can we look 20, 30, 40 years ahead? Are we even going to be around?"***

**Terry Deneault**, a cultural knowledge-keeper with the Skeetchestn Indian Band.

Photo: Katherine Mueller/IFRC

up in the old reserve, you had gunny sacks full of dried things. We had hanging and drying racks for medicinal plants — we had plenty of food to pull us through the winter; no problem. But you don't see as much of that today. Now we have all the big stores that a lot of our people go to and get that processed food."

Meanwhile, the construction of new roads, housing developments and changes in seasonal fish runs due to a warming climate were already putting pressure on their ability to live off the land. "The effects of climate change have been hurting the river systems," Deneault says. "The rivers are lower, slower and warmer, and salmon are coming up in bad shape because all the run-off causes diseases."

Other changes affected the forest. As the summers got warmer, new infestations of insects

## Climate of fire?

Wildfires are not ignited by climate change as such. In most cases, it's a random strike of lightning or a careless act of an individual that sets forests or mountainsides ablaze. The way forests are managed can also play a role. But the chances of a wildfire starting, the quickness of the fire's spread, the intensity of the burn and the endurance of the fires can be augmented by climate change.

"If it's drier and warmer, the risk of wildfires increases," says Maarten van Aalst, director of the Red Cross Red Crescent Climate Centre. "In certain parts of world that often have wildfires, such as Indonesia and other areas of South-East Asia, the intensity is clearly worse during the El Niño years. Although the fires aren't caused by climate factors alone, the risk of their spreading increases a lot during El Niño episodes."

Here's how it works: warmer global temperatures intensify the El Niño phenomenon, the vast and irregular increases in sea-surface temperatures in the eastern and central equatorial Pacific. Rain that is normally centred over Indonesia and the far western Pacific shifts eastward, according to the United States' National Aeronautics and Space Administration (NASA). As a result, parts of Indonesia and neighboring countries experience drought.

"This dry weather. . . intensifies seasonal fires, which are intentionally lit by farmers to clear land and manage crops," says a report by NASA. When rainfall patterns are normal, far fewer fires can "[escape] their handlers and [burn] uncontrolled".

In some northern forests, meanwhile, long-term warming has also led to pests spreading into new areas. With few natural defences, entire forests are sometimes killed off, becoming the perfect kindling for massive wildfires. At the same time, recent studies in the journal *Nature Climate Change* suggest that one of the leading causes of wildfires — lightning — is also posing a greater threat due to climate change. Lightning-caused fires have risen 2 to 5 per cent a year for the last four decades, and they are moving further north, even as far as the Arctic tundra, according to the journal.

# The host town to

In the tiny Canadian town of Wells, British Columbia, the Frog on the Bog gift shop is one of only a few businesses. But it's a community hub for people from kilometres around. "So many people from so many places come here," says Cheryl Macarthy, the owner. "They want to know about gold. They want to know about shopping. They want a cup of coffee."

Yes, gold. Macarthy shows off some nuggets recently brought into the store by modern-day prospectors. "This was taken out two weeks ago and it's fabulous," Macarthy says, pointing to a thumb-sized nodule of the precious mineral. "People quit their jobs or take the summer off to get gold."

Most people come for the nature, in particular to canoe or kayak in the chain of narrow, serpentine lakes that make up the Bowron Lakes. "The Bowron Lakes are one of the largest and best lake chains in the world for paddling. People come from all over the world," she says.

Along with mining, paddling has given the town new life in recent years. "We used to stand in the middle of the road and



Photo: Katherine Mueller/IFRC

Many rural, tourist-based businesses like The Frog on the Bog, in Wells, British Columbia, continue to suffer due to lingering fears of wildfires, as well as smoke that settles in the otherwise picturesque valleys.

Photo: Katherine Mueller/IFRC



📍 A satellite photo shows the extent of the burn. Photo: NASA

killed off thousands of trees. "That's why the Elephant Hill fire spread so fast — the forest was red from where bugs had killed everything. Everything left was bone dry; there was lots of fuel for the fire to go through non-stop."

This is one reason many here fear that the worst is yet to come. "If another fire sparks up, it'll be even more devastating; trunks are all dried out now."

## "What does this mean?"

Finally, after about two hours of driving, Deneault pulls the pick-up on to a grassy area. We get out and walk to the cabin. "This is one of the most important areas for us as hunters and gatherers," he says as we march through the grass.

A few yards on, he stops. "Oh, my god. My cabin's gone. We had a hunting and fishing cabin right here," he says, standing by the only remaining remnants, a twisted metal structure. "These are drying racks for fish, moose and deer. This is where we did a lot of work. It was a beautiful cabin. There's nothing left of it."

He takes me to a small creek where fisherfolk used to pull out fish. "It's sad to see this." But then he spots a sign of hope: a moose track in the grassy bank. "Good to see that moose track. Looks like they came in and ate stuff growing out of the water."

"Culturally, traditionally, spiritually, I'm still trying to put two and two together," he says. "What does climate change really mean? I know what it's done to us already but how can we look 20, 30, 40 years ahead? Are we even going to be around? With our language, with what we know about our land? Will there be land around to continue this lifestyle? That's what I need to know." ■

By **Katherine Mueller**

Katherine Mueller is a humanitarian, writer and communicator based in Ontario, Canada.

# to the ghost town

talk to our neighbours and if there was a car it would go around us. With the mining coming in, it's gotten busier. Wells has changed a lot."

Another attraction nearby is Barkerville, a ghost town where local people dress up as characters from the old frontier. "We call Wells 'the host town to the ghost town'. Barkerville was a town in the 1860s and now there are just the performers and they come back to Wells at night. They live here."

But two seasons of intense wildfires across the western Canadian province mean that very few people come to Barkerville and Wells these days. The fires are far away but media reports of blocked roads, fires and smoke have kept tourists away and that has left businesses struggling.

The host town to the ghost town is starting to feel eerily like a ghost town itself. "It's pretty demoralizing," says Macarthy. "And it's really disheartening to go to Barkerville and see the performers doing their show. But there's no one there to watch them."

Still, Macarthy says Wells has been relatively lucky because the town didn't burn and they never needed to be evacuated. But the smoke is taking its toll and people are now beginning to think twice before hitting the road.

"It's the smoke that has been the straw on the camel's back for a lot of people."

KM

## Where there's smoke...

On the side of the Trans-Canada Highway, just outside Spences Bridge, British Columbia, the Hilltop Gardens Farm fruit and vegetable stand has been a fixture for many summers. It's a place where people can get fresh tomatoes, melons, apples and peaches, all grown on land just across the busy highway.

With wildfires hitting the province these last two years, the farmers behind this family business say life for produce growers has been particularly tough.

"Mother Nature is really throwing us a curveball with the fires and the floods," says Steve Miles, who owns the farm just down the road.

First, the fires and frequent mudslides caused regular road closures that cut off drive-by business.

"I had all this stuff to sell but couldn't go north because everything was burning up there," says Miles' brother Mike. "He couldn't open the stand last year because there was no traffic on this road," adds Steve Miles.

But the worst part was what smoke from the fires did to their actual farm production. "This blanket of smoke came in and there was just no sun," adds Miles. "There was this low-hanging cloud and the sun was not even filtering through it was so thick. That was when the problems began."

Not only did the smoke prevent the photosynthesis necessary for growth, but fruit trees and many plants such as tomatoes, peaches and melons must be pollinated by bees. "Well, the pollination was really problematic because bees hate smoke," explains Miles. "So plants weren't pollinated. We didn't get a lot of tomatoes because once the smoke came in the bees took off."

To make matters worse, colder night-time temperatures further stunted many of the more sensitive plants. Steve and Mike Miles are now wrapping up their shortest growing season in 30 years. "First the blanket of smoke then the low night-time temperatures. It was a perfect storm not to have for a farmer."

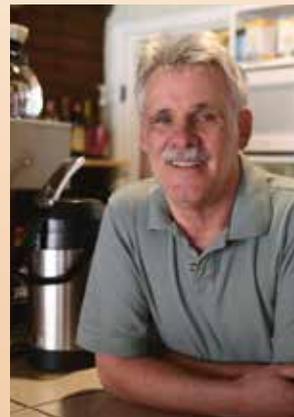


Photo: Canadian Red Cross



*"It's the smoke that has been the straw on the camel's back for a lot of people."*

**Cheryl Macarthy**, business owner in Wells, British Columbia

# “Nobody sleeps when it rains”

After the fires, mudslides are the long-term legacy.

**T**HE SCARIEST PART, says Trina Thompson, is not being able to see where the crashing sounds are coming from. “All you can hear are rocks rolling and trees breaking. You can hear water flowing and water shooting out from culverts under the highway.”

And because mudslides sometimes happen at night, it can be terrifying, not knowing if they have your home in their crosshairs. “Just being able to hear it and not knowing where it was and what was happening — that was the scariest part.”

Thompson lives with her father, Norman Retasket, on family land in a small valley just outside Bonaparte in the Canadian province of British Columbia. Surrounded by large hills, three houses are built on the property, nestled between an often fast-running creek and a provincial two-lane highway. After a season of massive wildfires in 2017, mudslides have become a constant threat in the fire-scarred hills. Retasket says the last one, which came within metres of their home, was terrifying.

“The ground was shaking like there was a freight train coming at you. You could hear the rocks rolling



and crashing through the trees. You don't know how big the rocks are, where they are going to stop and if they are coming at you.”

In the area just around Retasket's house, mudslides have claimed one life. A couple had stopped at the side of the road to admire the scenery. Within the blink of an eye, the hills came to life. Tonnes of soil, rocks and water came gushing down, sweeping away roads, bridges, fences and the couple's vehicle. One person was saved. The other remains unaccounted for.

Mudslides are becoming increasingly common because the fires destroyed the trees, bushes, grasses and undergrowth that normally hold forest topsoil in place during the rains.

“There's nothing to hold the water,” Retasket says. “Every time it rains or there are storms, this is going to happen again. If we get record amounts of snowfall, this will happen several times in the spring when it begins to thaw. The threat is going to be here for years until we get vegetation to grow again in the mountains.”

Until then, the psychological impact is constant. “Nobody sleeps when it rains,” Retasket says.

## Unrecognizable landscape

The mudslides have literally changed the topography of Retasket's land. Not only did they smash a newly installed fence, they also wiped out a bridge





Wildfires destroy the plants and root systems (below) that hold the forest floor in place, so mudslides are now a common and dangerous feature in some parts of British Columbia. Norman Retasket (left) stands in a gully created by a mudslide (also seen above) that happened the night before. A member of the Bonaparte Indian Band, Trina Thompson took these photos as well as a selfie photo as rescue workers evacuated people across a torrent of mud and water in 2018.

Photos: Trina Thompson

that Retasket had built to get his family to the other side of the creek.

"This has changed so much I wouldn't recognize it if I hadn't walked out here a few times already," he says, standing on a rise of earth that was not there only months ago. "This is maybe 10 or 15 feet [three or five metres] deep," he says.

The loss of the fence is particularly painful. "Every post for that fence I planted myself. I carried them up the hill and planted them, then grabbed another and walked up that hill, around the whole property. Some of the holes in hard ground took a whole day to dig."

### 'Screaming' trees

The combined impact of the fire and the mudslides has put a stop to nearly all his agricultural endeavours and a good portion of his time, energy and money is spent on building defences to future mudslides and fires.

Memories of the 2017 fires, which came to within a few hundred metres of his home, are seared into his mind. He remembers when some 450 firefighters were working in the woods nearby and intentionally started a backburn (a fire created to burn in the opposite direction to the advancing fire) in order to push the fire back up the hill away from his homestead.

"You could feel the heat. Because all these trees were burning. And you could hear the trees screaming," he adds, making a high-pitched whistling

sound. "All the moisture and pitch going out." Retasket also makes and sells traditional drums and he teaches drum-making at a local college. But he lost much of that income when he was evacuated in 2017 due to the fires. He did receive a small grant from the Canadian Red Cross Society as part of its support to small businesses affected by the wildfires. Those funds, combined with his own assets, provided the means to be proactive.

He's built a raised bank and dug channels to redirect water that might come from further mudslides and floods, and constructed a separate building to house firefighting equipment such as pumps, sprinklers, generators and fire hoses. He also keeps some pumps and hoses near the creek, ready for action, and sandbags are piled up around the well.

"Maybe I'm weird about fire," he says. "But if this burnt down, my kids wouldn't have anything."

Meanwhile, the family lives in a constant state of readiness. "Our freezer is full. Our fridge is full. Because if we get evacuated, or stranded by mudslides, we don't want to run out of anything. We have our firefighting equipment ready to go. In a way it's good to be prepared, but emotionally it's not good. You know? We shouldn't have to think about this all the time." ■

By **Katherine Mueller**

Katherine Mueller is a humanitarian, writer and communicator based in Ontario, Canada.



# Mysterious ways

In the remote steppes of Mongolia, a sheep herder picks up his dead animals and carries them towards a pile where they will later be burned. Here, summer droughts are often followed by heavy snows and a long, cold winter and this phenomenon is becoming more and more frequent. Increasingly, this pattern (known as a *dzud*), leads to extremely cold temperatures that kills livestock and leaves communities across the vast grasslands of Mongolia reeling. It may be counter-intuitive that global warming can be linked to freezing weather, but climate change often works in mysterious ways. In drier, hotter climates, people are experiencing an abnormal 'one-two punch' of longer droughts followed by short, intense periods of flooding. In the Arctic Circle, wildfires are no longer a rare occurrence while record-setting heatwaves in usually temperate regions are becoming what some are calling 'the new normal'. These photos from around the International Red Cross Red Crescent Movement help explain some of these surprising stories.





➤ Mongolian herder Munkhbat Bazarragchaa, 48, drags dead sheep to a pile of dead animals in Khuvsgul province, northern Mongolia. As droughts have become more severe in the province, so have deadly winter cold spells (which often come after periods of drought).

Photo: Mirva Helenius/IFRC

➤ When much of the Ewaso Ngiro riverbed dried up in Isiolo county, central Kenya, there was no option for many herding communities but to sink shallow wells into the river bed and scoop out the filthy, mud-coloured groundwater with domestic utensils, then lug it on donkey carts to villages. In the merciless heat of the dry, unshaded riverbed, it's exhausting work. If rains continue to be poor, pastoralists fear they will have to begin large-scale destocking of their herds.

Photo: Denis Onyodi/Kenya Red Cross Society

➤ As a heatwave swept across the Korean Peninsula in 2018, the Red Cross of the Democratic People's Republic of Korea deployed an emergency team with 20 pumps to bring water to crops, which during heatwaves need more water to grow. The National Society also reached out to people in hard-hit communities to help them avoid heatstroke.

Photo: IFRC



# Focus

⇒ Unusual weather patterns are now the norm in many parts of the world, often confounding critical systems meant to protect people. That's what happened to the neighbourhood of Nangka, Marikina city, Philippines, after the combined effects of Tropical Storm Yagi (local name: Karding) and the south-west monsoon dumped more than 50 per cent of the expected August rainfall in just one day over large parts of Metro Manila, the province of Rizal and other nearby provinces. The downpour forced several dams to release water after they reached critical levels.

Photo: Patrick Mongaya/Philippine Red Cross

☺ Sounds of camel bells and running water signal the onset of a busy morning in Qodqod village, located in Galgaduud region of Somalia. Herders fill their jerrycans with water as camels, followed later by flocks of goats and sheep, jostle for room along the water troughs. Water has been a scarce resource in the country exacerbated by years of conflict, neglect of infrastructure and climatic shocks. The water comes from a well drilled by the ICRC.

Photo: Anisa Hussein/ICRC





➦ Following poor harvests caused by drought and erratic rainfall, more than 350,000 people in Mauritania suffered from severe food insecurity. The situation is looking brighter for the women's cooperative in the village of Karama, where Tisslima Mint Moussa (right) comes every day to water the plants, remove weeds or pick vegetables. Income from the garden helps families with urgent needs or is used to maintain the solar-run water system.

Photo: Moustapha Diallo/IFRC

➦ A woman goes to get drinking water at a water point provided by the ICRC in the Yemeni city of Sana'a.

Photo: Yeyha Arhab/EPA for ICRC



# Climate of war

**Will a warming planet lead to a more violent world? Or will it simply continue to inflict more suffering on those living through conflict? Or both?**

**W**ell before Yemen descended into conflict and into what many have called the world's worst humanitarian crisis, the country's capital, Sana'a, was already on track to run out of water.

National water authorities and a host of international development actors were warning that unless urgent steps were taken, water resources in the Sana'a basin could disappear. One report said the city's 4.2 million residents could become "water refugees by 2025".



Long-term declines in rainfall. A growing population. Increasing cultivation of water-intensive crops. Mismanagement of water resources and inefficient water systems. All these factors have been causing water tables beneath the city to shrink by roughly three to four metres per year.

Before the war, numerous international agencies were working with the Yemeni government on ambitious, multimillion-dollar plans to reduce agricultural water use, improve water collection and cut down waste in urban water systems.

Today, there is little talk of sustainable development, only urgent calls for humanitarian action: impending famine caused by drought and conflict; some 1.2 million people believed to have been infected by cholera; mass casualties on a daily basis; cities under siege; malnutrition; aid blockages; and

energy cuts that allow people to pump water for only a few hours a day.

“The economy is in freefall so to remain economically active, people are turning to water-thirsty crops that deplete the water table even further,” says Johannes Bruwer, a water engineer who has worked in Yemen for many years and now heads the ICRC’s delegation there. “It’s a perfect storm for creating long-term water problems.”

Along with shortages of fuel, which make water production and transport of goods expensive, the shortage of water is hurting a critical part of the Yemeni economy. “People cannot work in agriculture the way they used to,” says Moosa Elayah, a Yemeni researcher with the Centre for International Development Issues in Nijmegen, the Netherlands. “Food prices are completely beyond what anyone

📍 People walk to collect water in an area north of Yemen’s capital Sana’a, in March 2018.

Photo: REUTERS/Mohamed al-Sayaghi



can afford.”

Even highly developed countries in times of peace are hard pressed to tackle these challenges. But Yemen’s ongoing war has pushed sustainable solutions off the table.

“We are facing starvation levels in many parts of the country and I think it will get even worse with climate change,” says Elayah.

### Double-edged sword

Yemen is not alone. Across the Middle East and other regions strongly impacted by conflict and climate change, similar stories are unfolding. Unpredictable weather patterns, including prolonged heatwaves, droughts and floods, are exacerbating already horrendous situations for people living under siege, displaced by conflict, forced into migration, confined in detention or living in cities that host large numbers of displaced people.

It’s a sword that cuts two ways: as climate change makes it more difficult for people to cope with the hardships of war, conflict makes it almost impossible for people to adapt to climate change.

“Conflict is where vulnerability to climate change

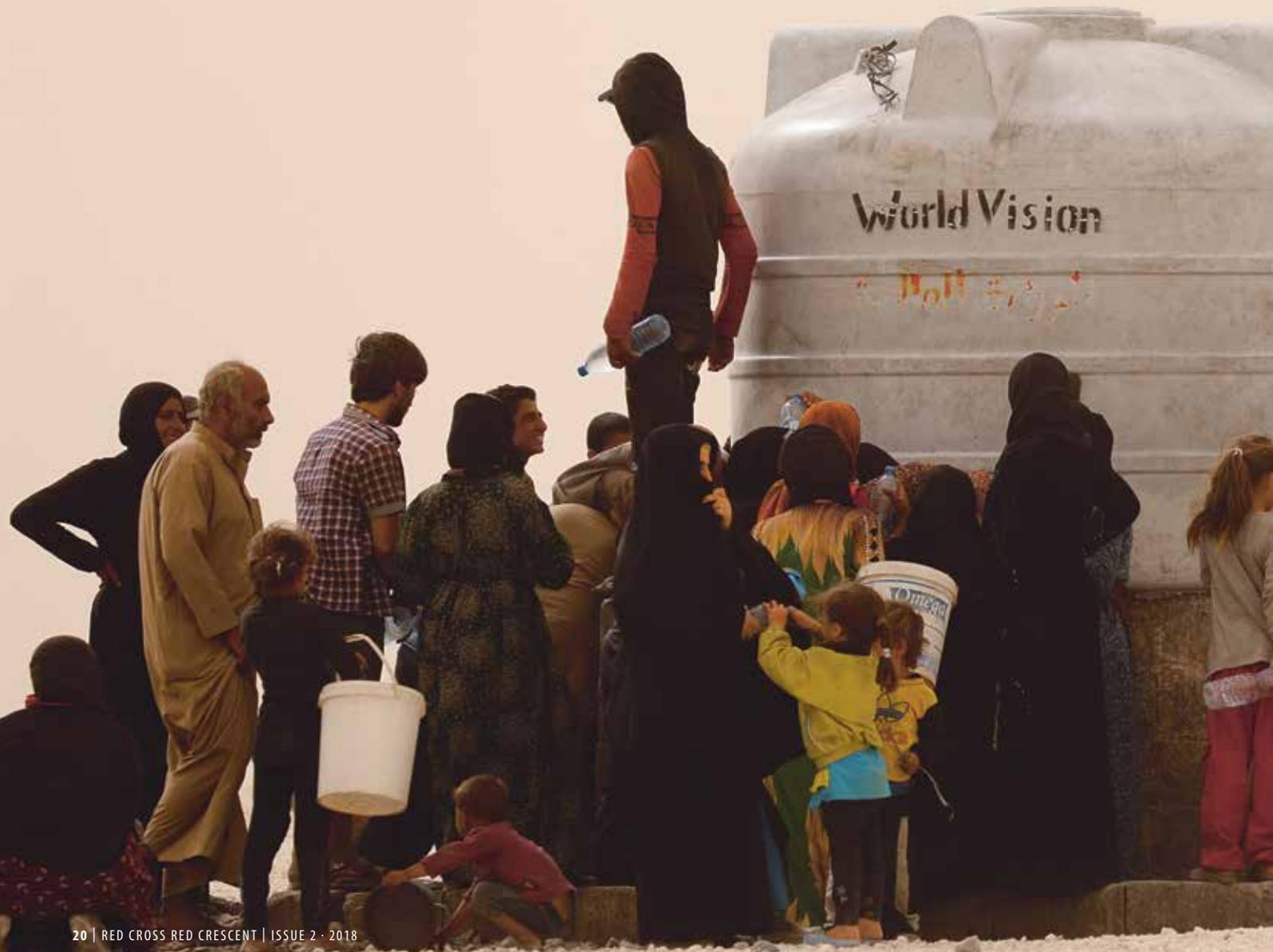
is especially high,” says Maarten van Aalst, director of the Red Cross Red Crescent Climate Centre in The Hague, Netherlands. “A climate-related shock has a much bigger effect on farmers in a conflict zone than it would in a stable, diversified economy where they would have crop insurance, subsidies and social security systems.”

In countries with conflict, safety nets for farmers often evaporate just as climate change makes the environment even harsher for agriculture, notes Michael Mason, director of the Middle East Centre of the London School of Economics and Political Science. Rainfall is diminishing while ground temperatures are rising. The problem is that as temperatures rise, food crops require more water to grow.

“There are technological means of overcoming temperature- and precipitation-based impacts on agriculture,” says Mason. “But many countries in the region lack the economic development and political stability to invest in those solutions.”

Mason and other experts warn against blaming the region’s water woes on climate change. Ageing, leaking water systems, over-pumping of water from aquifers, contamination of existing sources from waste

☺ Internally displaced people who fled Raqqa, Syria, gather to fill water containers in a camp near Ain Issa in northern Syria in May 2017. Photo: REUTERS/Rodi Said



water or agricultural run-off are just some of the factors causing far greater impact on available water supplies (see sidebar, Systems under stress, right).

Still, there is general agreement that climate change adds even more stress to precarious situations. In the years since war broke out in Syria in 2011, for example, at least 1 million refugees fled into neighbouring Lebanon, with many settling in host communities that already had inadequate water services.

“If there is a year of no rain or a storm creates a massive flood, these vulnerabilities become even more acute,” says Andres Casal, water and habitat coordinator for the ICRC in Lebanon. “The systems are not resilient enough to cope with these additional stresses.”

### Changing patterns

Climate change also means that in many conflict zones, weather patterns are less stable. The arid Lake Chad region in Africa, for example, has been getting hotter and drier for some time while seasonal rains no longer come when expected. When they do come, they are more intense so rainwater tends to wash along the surface rather than sink in and recharge

## Systems under stress

Even in highly developed cities, water systems are leaky. For every cup filled from the tap in London, for example, roughly one-fifth of that amount was lost along the way due to leaky pipes. Tokyo is considered a very water efficient city, with less than 5 per cent wasted between water sources and consumers’ homes.

In some Middle Eastern water systems, water-loss rates are generally far higher — as high as 60 to 70 per cent. For every ten litres pumped, only four reach the people, plants or animals that need it to live.

In the northern governorates of Jordan, which have been experiencing long-term reductions in rainfall and diminishing aquifers, anywhere from 50 to 60 per cent of pumped water is lost or unaccounted for by water metering systems, says Michael Talhami, an urban policy adviser for the ICRC who formerly coordinated water and habitat in the Middle East for the ICRC.

At the same time, the population being served by these systems has soared in recent years. The conflict in Syria forced some 1.3 million people to flee into northern Jordan, increasing the population of many host communities by as much as 25 per cent.

The situation is a good example of compounding vulnerabilities of conflict, climate change and inadequate water resource management and service delivery. Water was already scarce and overused, service provision was unreliable and the groundwater quality was deteriorating before the refugees arrived.

Government officials have been very open about the fact that the water network was not up to the task. “The lack of water supply is the result of lack of water sources, weak networks, lack of appropriate diameter pipes and ageing networks,” says Mohammad Al-Rabab’a, general manager of the Yarmouk Water Company, which serves a large part of the Mafraq Governate in northern Jordan.

Today, the water company works with numerous aid agencies, as well as the ICRC, to rehabilitate water supply infrastructure (pumping stations, transmission lines and treatment plants) and, more importantly, to combat the vicious cycle in which water losses result in less revenue for authorities while less maintenance translates to even more water loss.

In places of active warfare, all this is much more difficult, if not impossible. In some cases, water, power and sanitation systems have come under attack.

On top of that, increasing climate variability means that less water infiltrates into the groundwater while surface run-off has intensified. “In the Middle East and North Africa, there is less rain,” says Talhami. “But when it does come, it’s more intense.” In areas where the infrastructure to store water is non-existent, this water often flows off to lakes, rivers and the sea. “People can’t make use of that water throughout the year,” Talhami adds.

The good news is that a significant amount of water can be conserved by reducing waste and leaks, increasing the collection and storage of rainwater and managing demand through improved water efficiency in the domestic, industrial and agricultural sectors (see Engineering resilience, page 25).





➤ Maintaining urban water systems, often damaged by conflict, is not just about big pipes and heavy equipment. It's about people: skilled workers and engineers who can analyse problems, design solutions and do some heavy lifting in difficult conditions. Here, workers for the Syrian Arab Red Crescent repair damaged pipes in coordination with the ICRC and local water committees. Photo: ICRC

aquifers. Dry periods, meanwhile, are getting longer.

“Without conflict, people would be better able to cope when the rains don't come on time,” says Janani Vivekananda, a researcher with Adelphi, a Berlin-based think tank commissioned by the European Union to study the insecurity risks associated with climate change.

“In the past, if crops failed, the landowner might agree to let the farmer pay after the next crop cycle,” she says. “Now, because so much land is inaccessible due to the fighting, landowners can't wait for their money. So the farmers have to pay even when crops fail. But how are they going to pay?”

In some areas, traditional dispute-resolution systems have been rendered non-functional, while customary laws about who can fish or farm where and when have also been disrupted, says Vivekananda.

To survive the hard times, people sometimes cope by cutting down forests to make charcoal, provide sex for food or join armed groups, according to reports Adelphi provided to the European Union.

Climate change is also aggravating another standard feature of many armed conflicts: control over natural resources. While resource disputes may not be a primary cause of the fighting, the struggle to control scarce resources can exacerbate a conflict or have a significant effect on the dynamics of the fighting.

In many areas impacted by climate change and conflict, competition for arable land and water has been a common feature, with tensions sometimes rising to violence between those who need land and water to grow crops and those who need

them to herd livestock. Such tensions are not only caused by climate patterns but also other dynamics such as displacement, the encroachment of warfare on traditional farming and grazing areas or other pressures.

In Yemen, disputes over water and land have been part of the political landscape for centuries and, with water becoming scarcer, those conflicts are rising, according to numerous reports and experts interviewed for this story. While many of these local water fights are relatively small skirmishes at the periphery of the larger conflict, many experts see the country's dwindling resources as fertile ground for escalation or future conflict.

These dynamics are leading some to worry that conflicts are likely to worsen in places most affected by climate change and where community or government coping mechanisms are weak, especially given the dire warnings issued this year by leading scientific groups such as the Intergovernmental Panel on Climate Change (see *Degrees of desperation*, page 5). Still, there is no consensus among security experts as to whether climate issues have played — or will play — much of a role in causing conflict (see *Climate for war*, [www.rcrcmagazine.org](http://www.rcrcmagazine.org)).

There is general agreement, however, that climate change will make the lives of people living under conflict even more miserable. In a series of reports in 2018, climate scientists predict that global warming associated with climate change will have particularly harsh consequences for places such as the Middle East, North Africa and the Sahel, where temperature rises are outpacing the global average.

Another recent study in the journal *Nature Climate Change* went even further, predicting that unless big steps are taken to reduce greenhouse gases, peak temperatures in the region around the Arabian Gulf are “likely to approach and exceed” a critical threshold above which the human body cannot survive.

For humanitarian organizations, all this is a cause for some deep reflection: how should humanitarian organizations prepare for a future in which many of the places where they work are getting hotter, drier and more susceptible to shocks such as floods, sandstorms, heatwaves and drought? Does the humanitarian response in conflict need to adapt to climate change?

“The humanitarian response tends to be short term and [humanitarian organizations] often don't think about the full environmental impact of their interventions,” says Adelphi's Vivekananda.

She points to a recent example in the Lake Chad region. “[Humanitarian organizations] provided plenty of food, but they did not provide fuel to cook the food,” she says. “So there was massive deforestation as people searched for sources of

## Climate for war?

Will a warming world lead to yet more conflict?

Read more at

[www.rcrcmagazine.org](http://www.rcrcmagazine.org)

fuel. This degraded the landscape and worsened desertification, exposing people even more to sandstorms and floods.”

Similarly, the often knee-jerk response of drilling more wells to meet the urgent need for water during emergencies also has consequences, says Michael Talhami, an urban policy advisor for the ICRC who has worked for years in the Middle East.

“We now have a policy of not drilling any more wells unless we can justify it based on an understanding of the local hydrology and we are sure it will not do irreparable harm to local water tables,” says Talhami, adding that drilling more wells in water-depleted areas can cause other wells and springs to dry up or for the water source to become contaminated. “Of course, in conflict, it is often difficult if not impossible to do extensive hydrological studies.”

In Yemen, this issue is brought into stark relief. “Normally, drilling a well would require a permit and a study so as not to over-tap the aquifer,” says Bruwer. “What we’ve seen in Yemen is a large-scale violation of this with people drilling boreholes left and right.”

The result is not only a receding water table, but in some parts of the country, the contamination of

the water supply. As more fresh water was pumped out, salt water from the ocean slowly seeped in, rendering many wells useless.

Some of this over-drilling was done by well-intentioned humanitarian organizations. But much of it started earlier, as Yemen became more industrialized in the 1970s and people, farms and businesses bought their own water pumps. Age-old customs of regulation through local imams and local leaders fell apart.

With conflict now creating a further state of lawlessness, “we made a conscious decision to systematically reinforce the water authority’s role and work on sustainable solutions”, says Bruwer.

### Forcing a change

In that case, climate change reinforced an approach evolving over the past two decades as conflict became increasingly prolonged and urban: working with local water authorities to repair, upgrade or replace ageing pumps, pipes, booster stations and water-treatment facilities.

Climate change is also adding weight to calls for multi-year planning and multi-year financing so international and local organizations can accom-

👉 Boys cool down in water from a damaged water pipe in Aleppo, Syria in August 2016.

Photo: REUTERS/Abdalrhman Ismail





➤ An ICRC staff member inspects a solar-powered water project during its inauguration in the al-Khansaa area of Dhamar governorate in Yemen.

Photo: Iscander al-Mamari/ICRC

## Web extra!

### The human element

Resilience during conflict and climate change is not ultimately about technical fixes; it's about people. A deeper look at how communities are adapting to climate shocks in the midst of violence.

### It takes a village

Adapting to climate change goes far beyond basic needs such as water. It's an holistic approach that includes diversifying local economies, exploring new ways to produce food, protection of vulnerable people as they try to cope, and much more.

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pany communities over longer periods to develop more durable solutions to very complex and interconnected urban systems.

At a global level, climate change “is one factor forcing a re-examination of the way aid groups respond”, says Talhami. “We have been in reactive mode. Now we need longer-term thinking.”

But exactly what kind of long-term thinking is needed? To Talhami, one key element is “do no harm”, a critical humanitarian principle which should apply in both emergencies and long-term protracted crises. To find more answers, the Red Cross Red Crescent Climate Centre and the ICRC are hosting a series of expert round tables in 2019 focusing on climate change and conflict. By bringing expert practitioners and researchers together, they hope to build up a better understanding and perhaps some consensus about the best way forward.

### A drop in the bucket

Given the broad impact that climate change and conflict have on water, energy, agriculture, governance, commerce, health and transport systems, any meaningful solution will require a comprehensive, massive and long-term investment. All players (including development banks, international governmental bodies, national governments and community organizations) will need to be involved.

In this context, the contribution of the humanitarian sector will likely be just a drop in the bucket. It's a crucially important drop, given that it could provide a vital safety net for the most vulnerable people, but quite small when compared to the overall investment needed.

Still, humanitarian actors with experience in conflict zones can have influence on those who hold the bigger buckets in terms of funding or who hold sway over aid strategy.

Some of the biggest funding buckets are tied to the Paris Agreement, under which developed nations pledged to help less developed nations with mitigation and adaptation efforts through a variety of international funding mechanisms. Other buckets are

tied to post-conflict infrastructure redevelopment. At an April 2018 conference in Paris, for example, donor countries pledged US\$ 11 billion in low-interest loans to Lebanon, roughly half of which is earmarked for overhaul the country's ageing infrastructure (including water, energy, transport and sanitation systems).

How money in these buckets will be spent could have a significant impact on strengthening the resilience of essential services and communities to future conflict and climate shocks. Will that money be used to build water, power and sanitation systems back in a more resilient manner, based on the experience of humanitarians? Or will they be built back following a highly centralized model, leaving the continuity of essential service systems vulnerable if one part of the system is damaged? (See Engineering resilience, right.)

For Mawanda Shaban, a policy and resilience adviser for the Climate Centre, one critical first step is simply to put climate change on the agenda in places where people are talking about conflict — and vice versa. To date, the two issues are not fully linked in regional and global security, environment and disaster risk reduction platforms.

“There is an improvement in this discussion,” says Shaban, who worked to get these issues on the table during the African–Arab Platform on Disaster Risk Reduction earlier this year. “This has not yet happened at the global level, but we are trying hard to influence the discussion worldwide.”

As this debate unfolds, one thorny issue will be the challenge of maintaining important humanitarian principles — particularly independence and neutrality — if humanitarian organizations play a greater role with partners in the agenda for sustainable development. In many contexts, redevelopment and early recovery efforts can be tied to political and economic forces with a stake in the conflict. Might working closely with development actors, United Nations agencies, states or coalitions of states cause others to doubt the humanitarian organizations' impartiality and motives?

However humanitarians navigate this issue, understanding the dynamics between climate change and conflict will likely become an increasingly urgent matter as temperatures continue to rise and conflicts drag on and on.

“It's a bit like the frog in the pot of boiling water,” says the ICRC's Bruwer. “The climate is heating up but it's happening slowly, so people do not always notice the changes. And there are so many things going on around you. But it's very important to keep an eye on it so we can keep adapting and acting before it's too late.” ■

By **Malcolm Lucard**

Editor, *Red Cross Red Crescent* magazine

# Engineering resilience

As Hurricane Sandy slammed into the north-eastern United States in October 2012, more than 8 million people in New York City lost power, in large part because several critical underground substations were inundated by the storm surge.

Because there was no easy way to divert power to the blacked-out areas, millions of people were without electricity for several weeks while those substations were pumped out, dried, cleaned and repaired.

The Hurricane Sandy experience, as well as many hurricanes before and since, has brought increased awareness to concepts such as 'grid resiliency', in which power networks can be quickly reconfigured to keep service going when portions of the electrical network go down.

One way to do this is to create smaller networks of circuits within the larger network. These 'microgrids' are fed by a diverse range of power supplies, from large power plants to small rooftop solar panels and banks of locally managed batteries.

As a result of Hurricane Sandy, the New York State Power Authority developed a plan that uses many of these ideas to overhaul the state's power grid to become more resilient to future climate shocks. But making this happen will take time, cost billions of dollars and face some formidable political, economic and technical challenges.

## Cities aren't built for war

Given these challenges, could any of these ideas bear fruit in highly fragile states where urban infrastructure is being torn apart by conflict? "In times of acute crisis, maybe all we can do is import food and water to keep the population alive," says

👉 An engineer opens a tap powered by fuel given by the ICRC to a local water and sanitation corporation in the city of Taiz, Yemen. Photo: Fareed al-Homaid/ICRC

Michael Mason, director of the Middle East Centre of the London School of Economics and Political Science. "But when the situation allows, if there is some kind of stability, then the infrastructure we design and build should be done in a way that recognizes the pressures that system will face."

The problem is that urban systems aren't designed with these pressures in mind. During conflict, water and energy facilities — often centralized for efficiency and safety — can come under attack, become damaged inadvertently or be deprived of fuel.

"That centralized way of designing was rational; there's economy of scale and it's easier to manage and control," says Federico Sittaro, a strategic planner at the ICRC tasked with finding ways of building resilience into urban systems. "But in conflict, centralization often means that a failure at any one of many points can lead to total system failure. It's proven to be a weakness."

Given the climate predictions for many areas effected by long-term conflict, is it time to think differently about the way cities are rebuilt or assisted during warfare? "Donors sometimes come in and put in these technically impressive systems from the Western perspective," says Mason. "But they may be very fragile because if one point in the system is hit, the whole system goes out."

"Low-tech or even no-tech solutions that are decentralized may be the best in many circumstances," he adds, noting that old methods of capturing and storing water or cooling buildings can be extremely effective. "They are sometimes thought of as backward or less efficient. But in the case of conflict, they may be more resilient."

Working on such large projects during conflict could be extremely dangerous and warring parties may not allow the work to be done. The investment

required might simply be too large and risky to even be considered by donors. That doesn't mean nothing can be done, even during intense fighting.

During a particularly intense period of urban warfare in Aleppo, Syria, in 2013, the city became further divided, infrastructure continued to deteriorate and water cuts became more frequent. The problem was that Aleppo's principal water supply came from one source: the Euphrates River.

In an effort to ensure that all communities would have access to water, the Syrian Arab Red Crescent, UNICEF, the ICRC and municipal water boards worked to create an alternative water network by refurbishing old, broken wells around the city, the majority of which had not been used in decades. Then they created an online GPS-based mapping platform that would help people locate the wells using their mobile phones.

Many other projects have since taken the concept of decentralization further. In Yemen, for example, the ICRC at various times provided small water systems, powered by solar cells, to keep water flowing in certain areas even if a city-wide electrical system went down. It's also helping to repair or build cisterns or ponds with small evaporation surfaces to capture mountain run-off.

At the Ein el-Helweh refugee camp for Palestinians in southern Lebanon, the ICRC took a page from the grid resiliency by rewiring the camp-wide electric circuit so if one part of the system is damaged, the entire system doesn't go down.

In Gaza, the ICRC installed prioritized power supply lines to critical water and wastewater installations, so that if there are reductions in energy production, the service provider can prioritize the critical services such as water, wastewater treatment and health facilities. It also plans to give out smart meters that allow people to customize when and how much power they need. The idea is to avoid blackouts caused by overuse during high peak-use times.





### Use the present tense

Recent reports on climate change have focused a lot on the future. What will happen if the world heats up another half, or whole, degree. But climate change is already here. Measurements taken around the world since the 18<sup>th</sup> century show that global temperatures have risen 1 degree Celsius since pre-industrial times. We could even use the past tense: higher-than-normal storm surges, such as occurred during Hurricane Sandy in the United States in 2012 and Typhoon Haiyan in the Philippines in 2013, have been evident for many years due to rising sea levels. Storms, fires, droughts and other climate events are not necessarily caused by climate change, but their frequency, intensity and size have been, and will be, affected by global warming.



### Stay one step ahead

Too often, funding and action come after a deadly and expensive disaster happens. We know that spending even a fraction of the response money on preparedness could save lives, homes, businesses — and lots of money. But as weather patterns become less predictable, how do we know when and how to prepare? New tools now offer a way forward. One example is forecast-based finance, a funding mechanism in which donors, governments or aid groups agree to release funds before a climate event when forecasts reach a certain risk level. A project of the Red Cross Red Crescent Climate Centre and the German government, forecast-based finance is growing rapidly, with more than ten working pilot projects from Peru to Uganda. The IFRC's Disaster Relief Emergency Fund (DREF), generally used for rapid response immediately after disaster strikes, has added a forecast-based function. Some national governments are adding similar functions to their own disaster response mechanisms.



### Accept risk to avoid bigger threats

To some degree, disaster preparedness is like insurance. You hope you'll never need it, but when you do, you're glad you have it. If you never face a health crisis, it's easy to feel that the amounts you paid for health insurance was money ill spent. The dynamic is similar with forecast-based financing: when a predicted disaster fails to materialize, donors might question their investment. Funds are released, volunteers mobilized, people evacuated, supplies purchased — but the storm veers out to sea, the rains don't come and the waters never rise. But proponents say we should not see that as a loss because over time, it will have been much more efficient.



### Work well with others

"We can either run really fast by ourselves or run with others and go a lot farther." That's the way

# CLIMATE FOR ACTION

## What can we do at the global, national, local and individual levels to make a difference on climate change?



### Here are ten important steps that experts say could lead us in the right direction.

Mawanda Shaban sums up the mentality that humanitarians, disaster management experts and climate scientists need to adopt to take on the many profound impacts of climate change. "We can no longer move forward alone," says Shaban, a policy and resilience adviser with the Red Cross Red Crescent Climate Centre. "To respond effectively to climate risk management there has to be a strong multidisciplinary approach in which we manage both current and future risks." One example is what's going on in Shaban's own country, Uganda. In August 2018, the Uganda Red Cross Society signed a memorandum of understanding with Uganda's National Meteorological Authority in order to share climate data and better respond to risks.

The Uganda Red Cross also looked to link up with other like-minded organizations or people of influence. They talked to legislators about the country's national disaster management and preparedness bill, to young people about how to engage in climate risk management, to educators about curricula that include climate issues and to the ministry of water and environment to influence dam-safety guidelines that will help communities downstream prepare for impending floods. The National Society is also working with government to create a predictive fund that would follow a forecast-based financing model.



## Connect the dots

Up to now, the climate change, disaster reduction and sustainable development agendas have been somewhat compartmentalized. The Sendai Framework for Disaster Risk Reduction is a non-binding document, which aims to build resilience to natural disasters. With the Paris Agreement on Climate Change, governments made binding commitments to reduce greenhouse gas emissions and to help vulnerable communities adapt to climate change. The Sustainable Development Goals commit states to a wide range of poverty reduction, health improvement and education goals — including reducing the exposure of vulnerable communities to environmental shocks. The problem is that communities of interest behind these critical global initiatives, all adopted or agreed on in 2015, don't always work together. "What's missing are the linkages between three areas — development, disaster risk reduction and climate change," says Nicolas Orago, a senior lecturer on international human rights law at the University of Nairobi in Kenya. "Each of these areas is working towards the same thing: enhancing human well-being. But they are to some degree working in different silos."

That's why Orago is conducting a three-year global research initiative aimed at changing that. Supported by the Irish Research Council, the University of Cork in Ireland and the IFRC's Disaster Law Unit, the study aims to show how people are impacted by climate change and to study local and regional efforts to help them adapt using elements of the development, climate change and disaster reduction agendas (including disaster law). The goal is to provide guidance to national and local institutions in the adoption and implementation of innovative 'climate-smart' laws that protect the most vulnerable people.



## Put conflict on the climate change map

The needs of people impacted by conflict should also have a seat at the global climate change, development and disaster risk table. For many good reasons, the global security and humanitarian response to conflict operates on a parallel track to disaster risk reduction. But the undeniable impacts of climate change are increasingly evident in the nearly all the world's hotspots: Afghanistan, Africa's Lake Chad region, the Middle East and Somalia, among others. (For more perspective, see our stories on pages 18–25.)



## Bring it home

Under the Paris Agreement, world leaders have committed to keep global warming under control *and* to jointly address the rising risks, with special attention paid to the most vulnerable people. This includes a pledge by developed countries to mobilize US\$ 100 billion a year to tackle climate change risks by 2020. As that money is transferred from wealthier, developed nations towards middle- and lower-income countries, it is essential that communities involved in building resilience are kept at the centre of the equation. Humanitarian organizations like Red Cross Red Crescent National Societies with a strong local base need to ensure that global



Photo: Kate Marshall/IFRC

climate funds help communities themselves build resilience.



### Speak with confidence

With a few notable exceptions, the international community accepts the science: human activity has already significantly increased our risks. The proof is that all the governments that signed up to the Paris Climate Agreement endorse the findings of the Intergovernmental Panel on Climate Change (IPCC). While climate change is often a touchy political matter, the IPCC's findings concerning the present and coming impacts of climate change will allow even the most non-political organizations to speak more confidently about the links between climate change and the need to build greater resilience to the natural disasters we increasingly see around us today.



### Lead by example

Humanitarian organizations are usually the ones that help clean up the mess caused by climate disasters or they help communities prepare for the storms, floods and infectious diseases that climate change tends to make more prevalent. But some humanitarian organizations are going further — looking at their own carbon footprint and trying themselves to tread a bit more lightly on Mother Earth.

The Costa Rican Red Cross, for example, has taken on the goal of being completely carbon neutral by the year 2020. “We feel it’s our responsibility not just to deal with the consequences of climate change in the community but also to take on our own impact on the environment,” says Karina Diaz, who leads the National Society’s environmental overhaul.

“That’s why we are examining our own level of consumption of things such as electricity, water, consumer products and fossil fuels so that we become more and more efficient and, eventually, climate neutral,” she says.

For a National Society with more than 1,000 paid employees and a fleet of roughly 600 ambulances operating in 122 auxiliary committees, this is not a small order. Motivated largely by socially and environmentally conscious youth within the National Society, the effort started roughly five years ago among several branches and has since spread through most of the organization.

For many branches, it’s a natural fit. Volunteers and staff are already engaged in community health, water and sanitation, environmental protection and disaster risk reduction — all of which relate directly to climate change adaptation and community resilience. “More and more, people see that we are an organization that goes far beyond ambulance and emergency services,” says José Riccardo Arias Mora, head of the auxiliary com-

***“We feel it’s our responsibility not just to deal with the consequences of climate change in the community but also to take on our own impact on the environment.”***

**Karina Diaz**, Costa Rican Red Cross

mittee in Puriscal. “People know we’re also about preventing and reducing the underlying causes of vulnerability.”

Some of the most obvious results of this internal transformation are quite colourful. Old tyres have been recycled and crafted by volunteers into brightly painted tables and chairs as part of an effort to help communities find new means of economic independence.

In many coastal communities, where storms regularly batter shorelines that support both homes and livelihoods, volunteers in bright red and white T-shirts are often seen in the beach-front forests, planting trees to prevent erosion. Those plants also produce oxygen and consume the carbon in the atmosphere linked to global warming.

Solar panels are also becoming a common sight during field operations as the National Society studies ways to reduce energy costs while providing operational resilience when the normal power grids falter.

The initiative has taken root. Today, 59 auxiliary committees, almost half of the total in Costa Rica, participate in the Blue Flag, a national environmental programme that grants awards to volunteer organizations working towards nature conservation and social development. So far, five local Red Cross committees have won Blue Flag awards.

Meanwhile, back at headquarters, one young volunteer is basing a master’s thesis on a management plan for carbon neutrality for operations at headquarters. “At the end of this project, we will know how much greenhouse gas the National Society emits and we can develop a plan to reduce emissions,” says Daniela Borjas, a volunteer working on climate change issues for the Costa Rican Red Cross.

On top of that, energy and water are not free so conservation also saves money, she notes. “At first this initiative might seem a little expensive but when you see how much you save — and you also reduce the carbon footprint — then the benefits become very clear.”

When compared to other major sectors of the economy, the carbon footprint of the humanitarian network is perhaps just a drop in the ocean. Still, some are hoping that even such a small drop will send a strong message linking efforts to reduce carbon emissions to the storms, floods and diseases we help communities deal with every day.



### You tell us

Experts don’t have all the answers. We want to hear from you. What are you doing to build resilience to climate change? Visit our website at [www.rcrcmagazine.org](http://www.rcrcmagazine.org) and follow the prompts to tell us your own climate-for-action stories.

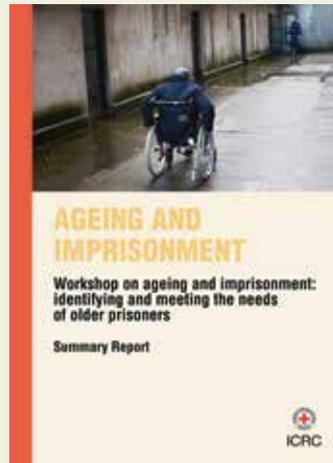
## PUBLICATIONS

### Leaving No One Behind Calling on the international humanitarian sector to do more to respond to the needs of the world's most vulnerable people IFRC 2018

Millions of people living in crisis may not be receiving the humanitarian assistance they desperately need, according to the 2018 *World Disasters Report* released by the IFRC in October. Lack of money is not the only issue, the report contends. Even if all humanitarian appeals were fully funded, many people would still be left behind because of the choices made by donors, humanitarian actors and the governments of affected states, the report argues. The *World Disasters Report* highlights five ways that the international humanitarian system leaves people behind: lack of money; lack of physical access; lack of understanding of who is in need; lack of comprehension of how best to help them; and lack of flexibility in expanding humanitarian assistance to people outside the traditional areas of conflict, disaster, displacement or disease. The report calls for a major shift in how resources are allocated, so that more money and more trust are put in the hands of local and national humanitarian organizations. Full report available in English, summaries in Arabic, French and Spanish

### The Convention on Cluster Munitions: The First Ten Years ICRC 2018

This booklet summarizes the achievements made in the ten years since the Convention on Cluster Munitions was adopted. It also outlines the remaining challenges and what needs to be done to attain key convention benchmarks by 2020. More than 100 states are now party to the convention, which has been remarkably successful in addressing the humanitarian impact of cluster munitions and advancing the goal of a world free of cluster munitions. Available in English



### Ageing and imprisonment — Summary report ICRC 2018

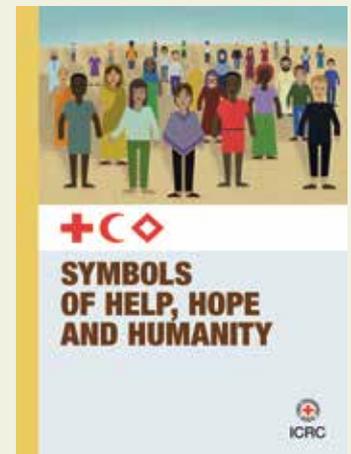
This report is a summary of a two-day meeting the ICRC organized in December 2016 on the needs of older prisoners. It offers in-depth accounting of the presentations and perspectives of experts with practical experience on the legal, ethical, healthcare and management issues concerning older detainees. Available in English

### Displaced in Cities: Experiencing and Responding to Urban Internal Displacement outside Camps ICRC 2018

As conflict becomes more urban, the displacement of people within the country at war has become an increasingly urban phenomenon. In this rapidly urbanizing world, great numbers of people are impacted when cities become sites of armed conflict and other violence. Meanwhile, people from conflict-affected rural areas may also seek safety in cities. This report explores the experiences of people internally displaced in urban settings or outside camps and addresses the concerns of communities that host large numbers of displaced people. The humanitarian response is also examined; challenges and promising approaches are identified. Available in English

### Symbols of help, hope and humanity ICRC 2018

This short but dynamic brochure is adapted from the video animation, *The red cross, red crescent and red crystal. What do they mean? In one word: protection.* Illustrated like a comic strip, it helps people better understand the purpose of the emblems in a simple and straightforward way. Available in English



## DIGITAL



### TalkFutures IFRC 2018

This new app from the IFRC makes it easy to weigh in on critical humanitarian questions through an online platform called TalkFutures. Just download the app, look for themes of interest, push record and speak. The recorded segments then appear on a website, where people can leave comments and highlight or share other posts. It's all about airing ideas on how Red Cross and Red Crescent National Societies can adapt to future challenges. Themes include participation and engagement, emerging technology, climate and disasters, power and governance. Posts are welcome in all languages. <https://talk.future-rcrc.com/>

### A woman's war

ICRC and *National Geographic* magazine 2018

Supported by the ICRC, this *National Geographic* magazine project goes beyond the stereotype of 'women as victims' and explores the multiple, complex, sometimes conflicting roles women play in conflict — fighters, humanitarians, mothers, daughters, labourers, community leaders and survivors. In *A woman's war*, photographer Robin Hammond documents a diverse group of women from Iraq to Nigeria, Peru and the Philippines. <https://www.icrc.org/en/document/women-war>

### IFRC Go

IFRC 2018

IFRC Go aims to make disaster information universally accessible and useful to IFRC responders for better decision-making. The site contains useful statistics on appeals, amounts allocated by the Disaster Relief Emergency Fund and the number of people reached by IFRC and National Society interventions. The team behind IFRC Go aims to support internal change around data services and catalyse collaboration with technology partners, humanitarian organizations, governments and civil society organizations, individuals and communities. Available in English <http://ifrcgo.org>



**During the hottest days of Hong Kong's 2018 heatwaves, 82-year-old Shuk-man Wong beats the heat by playing her accordion to the accompaniment of a whirring electric fan. She plays quietly so as not to disturb her neighbours because her small window and door stay wide open to catch whatever breeze might be wafting by.**

Photo: Alexia Webster/IFRC