

Companies and Climate Resilience: **Mobilizing the power of the private sector to address climate risks**



by Edward Cameron, Julie Arrighi, Fleur Monasso, Pablo Suarez, Eddie Jjemba
and Carina Bachofen

Illustrations by Rebeka Ryvola

Executive summary

Climate impacts are intensifying around the world with serious implications for the humanitarian community. Rising average global temperatures are leading to more severe weather events, changes in disease vectors, and exacerbating food and water insecurity. The impacts on the vulnerable and marginalized communities are acute and disproportionate, in particular affecting the development aspirations of women, children, migrants, the urban poor and indigenous peoples.

The private sector is an essential partner in reducing the impacts of climate change and extreme-weather events on vulnerable people. The innovations, products, services, political influence, capacity to shape behaviour, and investments of both multinational corporations and small and medium-sized enterprises (SMEs) are essential for enhancing the resilience of marginalized and vulnerable communities across the world in the face of climate variability and weather extremes. This paper argues for the Red Cross and Red Crescent Movement (“the Movement”) to reimagine its engagement with the private sector in addressing the humanitarian consequences of climate change.

The private sector has emerged as a source of significant climate leadership. More than 6,000 companies and investors from 120 countries, representing at least US\$36 trillion in revenue, or half the global economy, have made ambitious climate commitments. Most of these are focused on the reduction of greenhouse gas emissions. It is now time for those companies to demonstrate leadership on climate resilience.

There are two key entry-points for the Movement to partner in mobilizing private-sector leadership on climate resilience. First, businesses can do a better job of diagnosing climate risk, both for their supply chain as well as for the frontline communities that service that supply chain. Most private-sector risk analysis is focused on analysing hazard and exposure and does not include the third critical element of vulnerability analysis. Failure to understand the vulnerability of people and assets amplifies the climate and disaster risk facing a business. The Red Cross Red Crescent can play an important role in collaborating (with technical expertise) on analysing and reducing vulnerability, especially in at-risk communities.

Second, businesses need to broaden their understanding of climate resilience, specifically by recognizing how human, social, natural, physical, financial and political capital assets can become integral parts of a successful enterprise risk management system. These six types of capital assets are building blocks to private-sector resilience and they are closely aligned to the Movement’s definition of the six characteristics of a disaster-resilient community. Leveraging these strong parallels and potential interplays can help to catalyse resilience-building across private-sector supply chains and within vulnerable communities. The humanitarian community has a pivotal role to play in mobilizing the private sector through the provision of expertise and a commitment to partnership.

Introduction

The Red Cross and Red Crescent Movement (“the Movement”) is a global network comprised of 191 National Societies, 160,000 branches and 17 million volunteers. The Movement has a global reach and local presence. It’s deep roots in frontline communities allows it to understand and respond to local contexts and priorities and bring these perspectives to national and international processes. The Movement is a clear partner of choice in building community resilience to disasters and climate risks.

The Red Cross Red Crescent Climate Centre (“the Climate Centre”) supports the Movement and its partners in reducing the impacts of climate change and extreme-weather events on vulnerable people. The work is steered by an overarching vision for communities across the world to be more resilient and better prepared for climate change impacts now and in the future. This includes a) ensuring that the needs of individuals and communities most vulnerable to climate change and variability are addressed within policies, investments and plans; b) increasing finance for adaptation and resilience; c) ensuring the role of local actors in climate action is enabled; and d) implementing integrated risk management approaches to build resilience.¹ The private sector – ranging from micro enterprises to multinational corporates – is essential to this vision.

Corporate innovations, products, services, political influence, capacity to shape behaviour, and finance are key to building resilience, inside individual companies, across complex global supply chains, and within the front-line communities most vulnerable to climate change. To date, more than 6,000 companies, collectively representing at least US\$36 trillion in assets, have adopted climate commitments.² In addition, more than 1600 companies are using corporate reporting to disclose their exposure to climate risk to shareholders and investors.³

The climate resilience of micro, small and medium Enterprises (MSMEs) is also crucial. Small and Medium Enterprises (SMEs) are instrumental in restoring economic activity at the community level following disasters; the faster the business community recovers from a disaster, the faster the wider community will recover. SMEs are also drivers of job creation, innovation, supply chains and societal resilience.

In Africa, SMEs contribute more than 50 per cent of gross domestic product (GDP) and, on average, 60 per cent of employment across the continent.⁴ And in a 2014 study of 20 countries, the Asian Development Bank found that SMEs contribute on average 96 per cent of all enterprises, 62 per cent of employment and 42 per cent of GDP.⁵

In recent years, the humanitarian and development sectors have coalesced around an understanding of the basic building blocks of climate resilience, emphasizing that investments in human, social, physical, natural, financial, and political capital assets are key to building socio-ecological resilience.⁶ Growing

1 International Federation of Red Cross and Red Crescent Societies (2017) Framework for Climate Action Towards 2020. IFRC, Geneva.

2 Hsu, A.; Widerberg, O.; Weinfurter, A.; Chan, S.; Roelfsema, M.; Lütkehermöller, K. and Bakhtiari, F. (2018). Bridging the emissions gap - The role of non- state and subnational actors. In The Emissions Gap Report 2018. A UN Environment Synthesis Report. United Nations Environment Programme. Nairobi.

3 Goldstein, A., Turner, W., Gladstone, J., and Hole, D (2019) The private sector’s climate change risk and adaptation blind spots in Nature Climate Change, Volume 9. January 2019, pp18-25.

4 Muriithi, S. M. 'African Small and Medium Enterprises (SMEs): Contributions, Challenges and Solutions'. *European Journal of Research and Reflection in Management Sciences*, Vol. 5, No. 1, 2017.

5 Asian Development Bank (2015) Asia SME Finance Monitor 2014. ADB, Manila. <https://www.adb.org/sites/default/files/publication/173205/asia-sme-finance-monitor2014.pdf>

6 Overseas Development Institute (2016) Resilience Measurement Frameworks and Approaches: A bird’s eye view. Windward Fund and the Rockefeller Foundation. New York.

momentum and leadership within the private sector, coupled with deeper understanding of risk and resilience within the climate community, means the time is right to develop or advance effective partnerships in the service of front-line communities. The growing recognition of the importance of deeper understanding of climate risks and disaster resilience within SMEs is a trend which further underlines the need to advance such partnerships.

Building productive relationships between companies and Red Cross and Red Crescent National Societies and their partner CSOs to reduce the impacts of climate change and extreme-weather events on vulnerable people is key to strengthening community resilience; it can increase the impact, sustainability and scale of our resilience initiatives. The objectives of this working paper are to:



- **Articulate** the role and importance of climate risks as a shared global challenge representing significant material risks to MSMEs, individual companies with complex global supply chains, vulnerable populations, and the humanitarian mission of the Movement.
- **Increase** the understanding and opportunities of collaboration on business preparedness activities for SMEs in conjunction with National Society agendas.
- **Guide** the Movement on the scale and nature of corporate climate leadership, with the goal of highlighting the growing alignment between the capacities and interests of the private sector and the Movement's vision, thus supporting communities across the world to be more resilient and better prepared for climate impacts now and in the future.
- **Identify** tangible ways to mobilize the respective comparative advantages of the private sector and the Movement in support of climate-resilient, low-carbon, and inclusive development.
- **Provide** a direction and offer internal capacity building to the wider Movement to facilitate closer collaboration with the private sector based on an improved understanding of incentives, motivations and capabilities.

1. Communities, companies and climate risk

The humanitarian implications of a changing climate are very serious. Climate impacts are already widespread, consequential and expected to increase in intensity and frequency.⁷ The recently published Intergovernmental Panel on Climate Change (IPCC) *Special Report on Global Warming of 1.5°C* provides a comprehensive, scientifically robust, and specific overview of the potential impacts and associated risks. Chief among these are the increase in intensity, frequency and uncertainty of extreme-weather events; an increase in both heavy precipitation and drought; changes in the availability of fresh water; dramatic changes in both terrestrial and marine biodiversity and ecosystem services; and sea level rises.⁸

These cumulative risks create a series of interrelated and cascading effects including widespread loss of life, significant threats to public health, stalling of economic development, undermining human rights, enhanced societal fragility and risk of conflict; and increased displacement and involuntary migration.

The International Federation of Red Cross and Red Crescent Societies (IFRC) calculates that between 1996 and 2015 extreme weather killed 528,000 people worldwide, while 92 per cent of natural hazards were climate related and the total damage came to US\$3.08 trillion.⁹

The 2018 *Report of the Lancet Countdown: tracking progress on health and climate change* estimates that 153 billion hours of work were lost in 2017 due to extreme heat and 157 million more people were exposed to heatwave events in 2017 compared with 2000.¹⁰ With the Lancet Commission also estimating that fossil fuel pollution is the largest environmental cause of disease and premature death in the world, responsible for an estimated 9 million premature deaths in 2015 or 16 per cent of all deaths worldwide, it is clear that both climate change and its underlying causes are significant in premature death.¹¹

According to the World Health Organization and UNICEF over 1 billion people, or 18 per cent of the world's population, already suffer from water stress. An estimated 2°C temperature rise will expose between 2 billion and 3 billion people to water shortages as glaciers melt, droughts become more common, and sea-water seeps into freshwater supplies.¹² These trends are leading to unprecedented risk and create urgent need for risk reduction measures from a variety of stakeholders including the Red Cross Red Crescent.

These risks emerge not only from climate-related hazards (storms, droughts, heatwaves and floods as well as slow-onset events like sea-level rise and glacial retreat), but from a combination with exposure (people and assets in harm's way) and vulnerability (susceptibility to harm) of human and natural systems.¹³

In addition, the impacts of climate change will amplify other stresses. Many natural ecosystems are already subject to urban encroachment, fragmentation, deforestation and pressure on water resources. Some societies suffer conflict and civil unrest, population pressure, poverty and rising inequalities.

7 IPCC. 2014. *Climate Change 2014: Impacts, Adaptation, and Vulnerability*, technical summary. Cambridge University Press: Cambridge and New York.

8 IPCC, 2018: Summary for Policymakers. In: *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. World Meteorological Organization, Geneva, Switzerland, 32 pp.

9 The International Federation of Red Cross and Red Crescent Societies (2017) *Framework for Climate Action Towards 2020*. IFRC, Geneva.

10 Watts, N. et. al. (2018) *The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come*. *Lancet Review* Vol 392 pp 2479-2514 [http://dx.doi.org/10.1016/S0140-6736\(18\)32594-7](http://dx.doi.org/10.1016/S0140-6736(18)32594-7)

11 The Lancet Commissions (2018). *The Lancet Commission on pollution and health*. *Lancet* 2018; 391: 462–512.

12 WHO/UNICEF Joint Monitoring Programme (2005) *Water for life: Making it happen*. WHO, Geneva.

13 International Federation of Red Cross and Red Crescent Societies (2017) *Framework for Climate Action Towards 2020*. IFRC, Geneva.

Multiple stresses do not simply add to each other in complex systems like these; rather, they cascade in unexpected ways.

Climate change has disproportionate impacts on the vulnerable and marginalized, in particular affecting the development aspirations of women, children, migrants and indigenous peoples. The most vulnerable people have a limited capacity to cope with and adapt to the changing weather and climate patterns and risk being left behind. For example, gender disparities in ownership and access to resources (such as land, credit and technology), coupled with sociocultural barriers, impoverish and isolate women, lower their adaptive capacity and increase their exposure to climatic risk.

Since women's livelihoods in agrarian societies are highly climate-sensitive, climate change imperils their lives more than it does men's. Increasing natural disasters caused by climate change also disproportionately affect women due to their role as mothers, carers, and workers in the informal sector, among other roles. The 1991 cyclone in Bangladesh illustrates many of these issues.

More than 90 per cent of the estimated 140,000 fatalities were women; their limited mobility, skills, and social status exacerbated their vulnerability to this extreme-weather event.¹⁴ The Indian Ocean tsunami on 26 December 2004 killed more than 220,000 people in 12 countries and leaving 1.6 million homeless. A survey later reported that four times as many women than men were killed in the tsunami-affected areas of Indonesia, Sri Lanka, and India.¹⁵

Some of the reasons for this are similar across these countries: women died because they stayed behind to look for their children and other relatives. Women in these areas often can't swim or climb trees, which meant that they couldn't escape. Some cultural differences between men and women also contributed to the disproportionate death toll. Recurring natural disasters also lead to further violations of women's rights and dignity, such as human trafficking, child marriage, sexual exploitation and forced labour.

In most economies, the private sector holds up to 85 per cent of all investment and makes over US\$80 trillion of institutional investments globally each year. According to the International Finance Corporation, small and medium enterprises constitute 90 per cent of businesses worldwide and generate 50 per cent of employment.¹⁶ Obviously, the private sector is a vital partner to reduce the risk of disasters. Building resilience at the scale needed will not be possible without the active participation of the private sector. In turn, the private sector needs to take steps in order to protect itself from the potential dangers of natural disasters and actively contribute to the crucial task of building resilience of its assets, workforce, supply chains, and customers.¹⁷ In doing so, the resilience of people and communities is strengthened through access to economic security which builds capacity to withstand or recover faster from climate extremes.



14 Oxfam. 2008. "Climate Wrongs and Human Rights," Oxfam Briefing Paper (September 2008). <http://www.oxfam.org/sites/www.oxfam.org/files/bp117-climate-wrongs-and-human-rights-0809.pdf>

15 Oxfam (2005) The tsunami's impact on women.2005: http://www.oxfam.org.uk/what_we_do/issues/conflict_disasters/downloads/bn_tsunami_women.pdf.

16 IFC, Leveraging the power of the private sector https://www.ifc.org/wps/wcm/connect/37e8210049cfbc32b940bbe54d141794/IFC_AR15_Section_2_Private_Sector_Impact.pdf?MOD=AJPERES

17 Resilient businesses for resilience nations and communities, UNESCAP, <https://www.unescap.org/sites/default/files/Resilient%20Business%20Book-Final-lowres.pdf>

While there is not a universal definition of *micro*, *small* and *medium* enterprises. A commonly used estimate defines micro enterprises as those with five employees or less, small enterprises as 50 employees or less, and medium enterprises as having fewer than 250 employees.

Definitions typically also include ranges for annual turnover and balance sheets.¹⁸ Financial thresholds can vary wildly. In the EU, for example, a medium enterprise is one with less than 50 million euros in annual turnover and a small enterprise is one with less than 10 million euros in annual turnover.¹⁹ In contrast, in smaller markets these ceilings can be much lower. For example, in Uganda, medium enterprises should have less than 360 million Uganda shillings in annual turnover (US\$98,000).²⁰

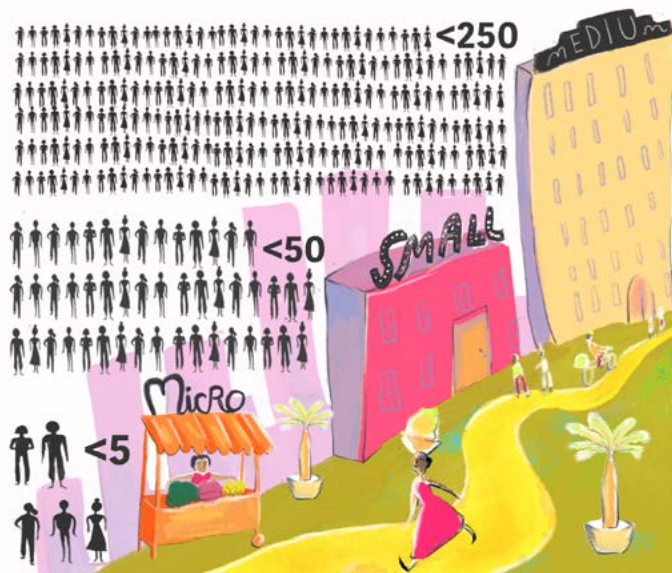
The Climate Centre seeks to advance understanding of climate risks and how these risks impact the most vulnerable. One of the most significant drivers of climate action in recent years comes from the growing recognition that climate change poses a material risk to business. In 2016 the World Economic Forum (WEF) described climate change as the “highest impact risk to business” out of a total of 29 reviewed.²¹ Research in the journal *Nature* suggests the impact of climate change on the market value of global financial assets to



be US\$2.5 trillion and could be as high as US\$24.2 trillion under worst-case scenario.²²

Businesses who fail to properly understand and manage climate change and extreme events are exposed to both horizontal and vertical risks: strategic, financial, operational and marketing risks or others related to compliance and human resources.

Horizontal risks are experienced across every connected link in complex global supply-chains during the extraction of raw materials, the development of discrete components for large goods and services, manufacturing, the transport and distribution of goods and services, and the interface between retailer and consumer.



18 OECD <https://stats.oecd.org/glossary/detail.asp?ID=3123>

19 European Union (2015) User Guide to the SME Definition. European Union, Luxembourg <https://web.archive.org/web/20180423143957/http://ec.europa.eu/DocsRoom/documents/15582/attachments/1/translations>

20 Uganda Investment Authority: <http://www.ugandainvest.go.ug/sme/>

21 World Economic Forum (WEF). 2016. Global Risks 2016, 11th Edition. WEF, Geneva. 2016.

22 Dietz, S., Bowen, A., Dixon, C., and Gradwell, P. 2016. Climate value at risk of global financial assets. *Nature Climate Change*. 6, 676–679. Macmillan Publishers Limited.

For example, Hurricane Maria slammed into Puerto Rico on 20 September 2017, levelling homes, flooding vast swathes of the island; and because the impact of climate change sometimes follows a circuitous path, it affected the health of people thousands of miles away. Pharmaceuticals and medical devices constitute Puerto Rico's leading exports, and drug companies and device makers represent a US\$15 billion stake there. Baxter International manufactures intravenous (IV) bags on the island – in fact, the Fortune 500 healthcare company constitutes more than 40 per cent of the United States' IV solution market. When Hurricane Maria forced the shutdown of those Puerto Rican plants, hospitals that relied on these products were unable to resupply. When an unusually severe flu season swept across the United States, hospitals were left scrambling for IV bags to care for dehydrated flu patients.

In some cases, clinics nowhere near the storm suddenly found themselves paying up to a 600 per cent above the standard cost. In 2011, Hewlett-Packard Technology, at the time the world's leading personal computer manufacturer, suffered in excess of US\$4 billion in lost revenue when monsoon floods in Thailand undermined the supply of components vital for the production of hard-disk drives.

These examples are not unique. A 2000 study of 861 public companies found that with the announcement of a supply-chain malfunction such as production or shipment delays, a company's stock price tumbled nearly 9 per cent on average. Furthermore that stock lost 20 per cent of its value within six months of its announcement.²³

Vertical risks are experienced inside individual companies and include:

- **Financial risks** include potential risks to profits, especially where they are dependent on natural resources threatened by climate impacts; reduced availability of capital as banks, investors and insurance companies seek to reduce their own exposure to potential liabilities; and threats to existing assets and investments that may be exposed to hazards.
- **Operational risks** result from damage to vital infrastructure caused by climate hazards; production shortfalls and procurement problems when the communities and resources behind the supply chain are adversely impacted; and logistics failures when transport routes are shut down by extreme weather.
- **Human resources risk** involves impacts on workforce safety and liability through extreme-weather events. In addition, talent recruitment and retention may be affected when companies fail to take sustainability issues such as climate change seriously.
- **Compliance and legal risks** arise when companies fail to adhere to laws and regulations designed to enhance adaptive capacity; from liability arising from climate-



23 Hendricks, K. B., and Singhal, V. R. (2003) The effect of supply chain glitches on shareholder wealth. *Journal of Operations Management* 21 (2003) 501–522.

related lawsuits; and from failure to fully disclose climate risks through mandatory reporting mechanisms.

- **Marketing and sales risks** result when brand value declines, customer relations deteriorate, and reputation is damaged. These can happen when a company is judged to have failed in core responsibilities to protect the environment, workers in the supply chain, or is seen to be exacerbating vulnerability to climate change through its sourcing, procurement and operations.
- **Strategy risks** such as losing out to competition who are better adapted to climate change; and reputational damage because of failure to prepare /respond to an extreme event.

Of all the lingering reminders of 2012's cataclysmic Hurricane Sandy, a line on a wall at Verizon's Lower Manhattan offices represents the high-water mark from the massive storm. Before October 2012, Verizon's telephone infrastructure depended on copper-based systems to support its landlines nationally, including in New York and New Jersey. But when the hurricane sent a surge of saltwater sweeping through the company's facilities, its copper wiring dissolved. As a result, thousands of Verizon customers lost service, the company suffered reputational and operational damage, and ultimately the company lost approximately US\$1billion.²⁴

MSMEs are similarly prone to the impacts of climate extremes. The 2011 floods that struck Thailand affected over 500,000 SMEs and 2.3 million people lost their jobs as a result.²⁵ In the aftermath of Hurricane Haiyan SMEs suffered from disruption in supplies, loss of inventory, delays in operations and a decline in sales. The overall impact of this disruption was estimated as a 15 per cent decline in the annual GDP of the Philippines in 2013.²⁶

In sub-Saharan Africa, where formal and informal SMEs account for 80 per cent of all employment,²⁷ a recent publication illustrates the adverse impacts of the 2015–16 El Niño on MSMEs in the cities of Nairobi, Gaborone and Lusaka. Though there were relatively low climate anomalies, system vulnerabilities led to localized flooding, power outages and water-supply disruptions which consequently led to interruptions in local supply chains, customer demand, asset losses and significant reductions in business productivity and profitability.²⁸

MSMEs play a crucial role in the economic security of people and communities. They provide resources for people to meet their daily needs, and contribute to local business districts, as well as regional and global supply chains. The faster the business community recovers in the wake of a disaster, the faster the wider community can also recover. However, despite the crucial role that SMEs play studies also show that the vast majority have not taken disaster preparedness measures to reduce their risk of being impacted by natural hazards. A study by the Asian Disaster Preparedness Center of SMEs in Indonesia, the Philippines, Thailand and Vietnam showed that more than 80 per cent do not have a business continuity plan in place.²⁹ The primary reasons cited for a lack of planning were a lack of knowledge and the high costs of hiring a

24 Cameron, E; Erickson, C; and Schuchard, R (2014) Business in a Climate-Constrained World: Catalyzing a climate-resilient future through the power of the private sector. BSR, New York.

25 APEC, Preparing SMEs for disasters, https://www.apec.org/Press/Features/2014/0324_smes

26 Financial Times, The economic costs of typhoon Haiyan, <https://www.ft.com/content/d8199e65-5551-3828-b2bb-6016a75bf6ff>

27 Jan de Kok; Claudia Deijl; Christi Veldhuis-Van-Essen, Is small still beautiful? https://www.ilo.org/employment/Whatwedo/Publications/employment-reports/WCMS_216909/lang-en/index.htm. International Labor Organization.

28 Gannon KE et al (2018). Business experience of floods and drought-related water and electricity supply disruption in three cities in sub-Saharan Africa during the 2015/2016 El Niño. Global Sustainability 1, e14, 1–15. <https://doi.org/10.1017/sus.2018.14>

29 Asian Disaster Preparedness Center (ADPC) (2016) Strengthening Disaster and Climate Resilience of Small and Medium Enterprises in Asia. ADPC. Bangkok, Thailand.

consultant. Armed with the right knowledge and tools, this is an area where the Red Cross Red Crescent can play a crucial role in helping businesses prepare for disasters and reducing the extreme impacts often felt in the wake of major disasters, such as the ones cited above.

The risks to communities and to SMEs and multinational companies may at first appear to exist in parallel worlds, but look more closely and it becomes clear that the fate of these companies and front-line communities are intertwined. For example, the ILO calculates that approximately 190 million women work in global supply chain-related jobs in the 40 countries for which estimates were available. In sectors such as consumer products and food the proportion of women in the labour force can be as high as 70 per cent in some countries.³⁰ And yet, most companies, large and small, fail to understand the asymmetrical impacts of climate change resulting from social, political, economic, and cultural norms, and consequently fail to develop meaningful interventions to protect their women workers, maintain productivity, and ensure business continuity.

A more effective partnership between the private sector and the humanitarian community would deliver improved enterprise risk-management while delivering resilience for some of the world's most vulnerable constituencies. At the same time, if they lack awareness of changing risks, private-sector stakeholders can also create risk by making investments that can later be lost to extreme events, derailing the lives and livelihoods of people and communities depending on business enterprises and their decisions.



30 International Labour Office (ILO) (2015) World Employment and Social Outlook 2015. ILO Research Department. Geneva, Switzerland.

2. Paris and the power of the private sector

In December 2015, the international community adopted the Paris Agreement, an unprecedented commitment to climate compatible development and an era-defining attempt to reduce climate risk. Article 2 of the agreement outlines three interrelated goals, each designed to strengthen the global response to the threat of climate change. The first commits governments to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels. The second goal stresses the importance of increasing collective capacities to adapt to the adverse impacts of climate change and foster climate resilience. The third pledges to mobilize finance consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.³¹

The private sector played an important role in mobilizing political capital in support of the agreement, in shaping the contours of the final deal through policy advocacy, and in complementing the ambition contained within national climate action plans with aggressive climate plans of their own.³²

By 2017, researchers tracked 6,225 companies and investors from 120 countries, representing at least US\$36.5 trillion in revenue logging commitments.³³ The sheer scale of these commitments is remarkable. The World Bank estimated the global economy as being worth US\$74 trillion in 2017, meaning corporate climate commitments now represent half the global economy.³⁴ To put this into context, humanitarian finance flows for the same year were estimated to be US\$27.3 billion.³⁵

One of the great strengths of the private sector is its unrivalled ability to mobilize and channel money for investments. It is crucial to recognize that the humanitarian implications of those investments are likely to be much larger than those resulting from private- or public-sector donations to humanitarian organizations. The private sector has unrivalled ability to mobilize money, yet its ability and efforts to address physical climate risks and resilience is a new area of expertise, often not well embedded in corporate-risk strategies.

While adaptation finance flows have increased in recent years, the current finance levels continue to fall short of both current needs and future projections. According to UNEP, current adaptation costs are likely to be at least up to three times higher than international public finance for adaptation. Looking forward to 2030, the assessment of national and sector studies shows that adaptation costs in the period around 2030 are likely to be in the range of US\$140–300 billion per annum, and as high as US\$500 billion by 2050. International public finance for adaptation in 2015 was around US\$9.5 billion.³⁶

The actual funding of adaptation reaching most vulnerable groups and places is still dismally low. While the figures are for different points in time and differ in terms of definition and coverage, they illustrate that, to meet finance needs and avoid an adaptation gap, the total finance for adaptation in 2030 would have to be six to 13 times greater than international public finance today. Moreover, the potential adaptation

31 The Paris Agreement was adopted as a decision of the Conference of the Parties to the UNFCCC, and its text is included as an annex to that decision. Conference of the Parties, Draft decision _/CP.21, Adoption of the Paris Agreement, at 20, U.N. Doc. FCCC/CP/2015/L.9/Rev.1 (12 December 2015) <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>.

32 Hsu, A., Cheng, Y., Weinfurter, A., Xu, K. and Yick, C. (2016) 'Track climate pledges of cities and companies'. Nature, 532:303-306. Available at: http://www.nature.com/polopoly_fs/1.19764!/menu/main/topColumns/topLeftColumn/pdf/532303a.pdf.

33 Hsu, A., Xie, Y., Feierman, A., Nicolai-Scanio, Z., Rauber, R., Weinfurter, A., Huang, T., Martin, G., Thomas, R., Janaskie, S., Long, S., Yan, C., Hochstrasser, F. and Li, A. Z. (2017) Who's Acting on Climate Change? Subnational and non-state global climate action. Available at: http://datadriven.yale.edu/wp-content/uploads/2017/11/DDY_Taking-Stock-of-Global-Climate-Action.pdf.

34 World Development Indicators Database, 2017. Available at: <http://datatopics.worldbank.org/world-development-indicators/>.

35 <http://devinit.org/wp-content/uploads/2018/06/GHA-Report-2018.pdf>

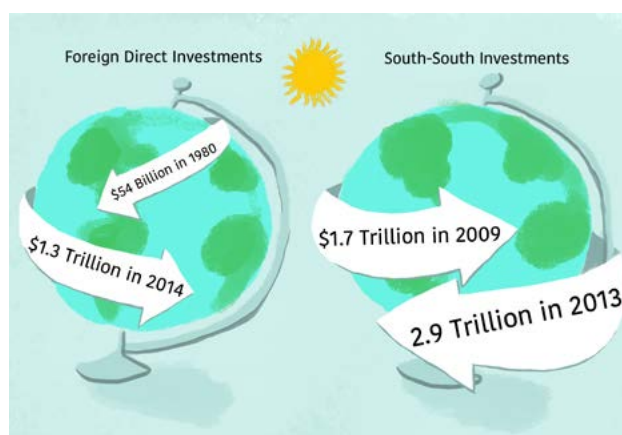
36 Oxfam Shadow Report on climate finance: https://www-cdn.oxfam.org/s3fs-public/file_attachments/bp-climate-finance-shadow-report-030518-en.pdf

finance gap in 2050 would be much larger – some 12 to 22 times current flows of international public adaptation finance.³⁷

Historically climate adaptation finance has been focused mostly on the disbursement of public money, or when addressing the private sector on using public money to leverage private capital in support of large-scale adaptation initiatives drawn from a project pipeline. Very little has been done to understand the myriad ways in which the private sector puts money to use, by expenditure, procurement, the allocation of investment capital, and the management of risk. As a result, the true scale of private-sector investments in resilience is unknown as data is scarce; the effectiveness of private-sector investments is unclear; and most of the research to date has focused on quantifying, classifying or reviewing approaches to leveraging private-sector finance using public funds.³⁸

The potential to mobilize significant investments in resilience by leveraging existing finance flows through corporate procurement systems is massive. Research from the United Nations Conference on Trade and Development (UNCTAD) calculated that as much as 80 per cent of global trade is integrated in global supply chains, including trade in procured goods and services of about US\$12 trillion.³⁹ Many of these supply chains are also increasingly sourcing goods and services from parts of South-East Asia, South Asia and Africa that are most vulnerable to climate impacts.⁴⁰ Incorporating climate-risk management in procurement contracts and capacity-building schemes across these supply chains has the potential to significantly increase the resilience of local businesses and local economies in disaster prone communities.

Foreign direct investment (FDI) inflows have increased by a staggering 25 times since 1980, rising from US\$54 billion to US\$1.23 trillion in 2014, as marked by shifts from manufacturing to services and from developed to developing and emerging markets. South-South investments have also intensified, growing by two-thirds, from US\$1.7 trillion in 2009 to US\$2.9 trillion in 2013.⁴¹ What is immediately striking about these numbers is how they dwarf the figures that are discussed within UN climate negotiations, or numbers mobilized by multilateral development banks, or even the numbers identified earlier as being needed to build adaptive capacity in the face of varying climate-risk scenarios. Taking steps to ensure that these financial flows are directed towards climate resilience would therefore safeguard assets, minimize liabilities and make a significant contribution to broader socio-ecological adaptive capacity.



37 UNEP (2016) **The Adaptation Finance Gap Report 2016**. United Nations Environment Programme (UNEP), Nairobi, Kenya.

38 UNEP 2016. **The Adaptation Finance Gap Report 2016**. United Nations Environment Programme (UNEP), Nairobi, Kenya, p 32.

39 UNCTAD (2013) **World Investment Report, 'Global Value Chains: Investment and Trade for Development'**. United Nations, Geneva.

40 Standard Chartered (2015) **Global Supply Chains: New Directions. Global Research Special Report**. Standard Chartered Research. Singapore. P9

41 World Economic Forum (2016), "The Global Risks Report 2016", 11th Edition, WEF, Geneva.

To date, corporate climate commitments have focused almost exclusively on mitigation and the reduction of greenhouse gas emissions. Companies now need to revisit their understanding of climate leadership and balance their portfolios with a greater emphasis on resilience. In research conducted by two business-focused groups, Business for Social Responsibility (BSR) and Carbon Disclosure Project (CDP), 72 per cent of suppliers stated that climate risks could significantly impact their operations, revenue or expenditure, yet only half of these are currently managing this risk.⁴²

More recently, a team of researchers reviewed more than 1,600 corporate adaptation strategies, and found significant blind spots in companies' assessments of climate impacts and their approaches to resilience, and in their development of strategies for managing them.⁴³ In 2016, CDP collected voluntary public disclosures on physical climate change risks from 1,959 companies representing 69 per cent of global market capitalization. Among the respondents, 1,630 companies disclosed the physical climate risks they faced in the reporting year, as well as the potential business impacts of those risks, the estimated financial implications, the method implemented by managers to deal with risks and the cost of that adaptation. More than half of reporting companies expect that climate change will increase their operational costs (56 per cent) and/or reduce or disrupt production capacity (52 per cent); 17 per cent report that at least one identified climate risk could result in an "inability to do business" for a particular geography or time period.

However, these companies appeared to be underestimating and misunderstanding the various pathways through which climate change can be manifested in business impacts, from lost consumer purchasing power to employee absenteeism to raw material shortages. The authors highlight that most global estimates predict that the cost of climate impacts will run into the trillions of dollars, yet the aggregate financial risk reported through corporate disclosures runs only in the tens of billions, a discrepancy of at least two orders of magnitude.

The researchers conclude that companies report the costs of both physical climate impacts and the strategies required to manage them sporadically and inconsistently, while the strategies themselves overall reflect a narrow view of risk that underestimates supply chain and broader societal impacts. The study concluded by suggesting a wider view of climate-risk management in the private sector with new partnership models.

In sum, there are two main reasons to look at climate risks: both for business continuity, and for climate-smart disaster-risk management amongst vulnerable groups. Synergies and overlapping benefits can certainly emerge from collaboration between the humanitarian sector a wide array of private-sector players, ranging from large corporates with complex global supply chains and their frontline communities, to SMEs, to the youngest of street vendors in informal urban settlements.

42 Chase, M., Norton, T., and Wright, C (2016) From Agreement to Action: Mobilizing suppliers toward a climate resilient world. CDP Supply Chain Report 2015 | 2016. BSR and CDP. New York.

43 Goldstein, A., Turner, W., Gladstone, J., and Hole, D (2019) The private sector's climate change risk and adaptation blind spots in *Nature Climate Change*, Volume 9. January 2019, pp18-25.

3. Collaborating with private sector and strengthening capacities to lead on climate resilience

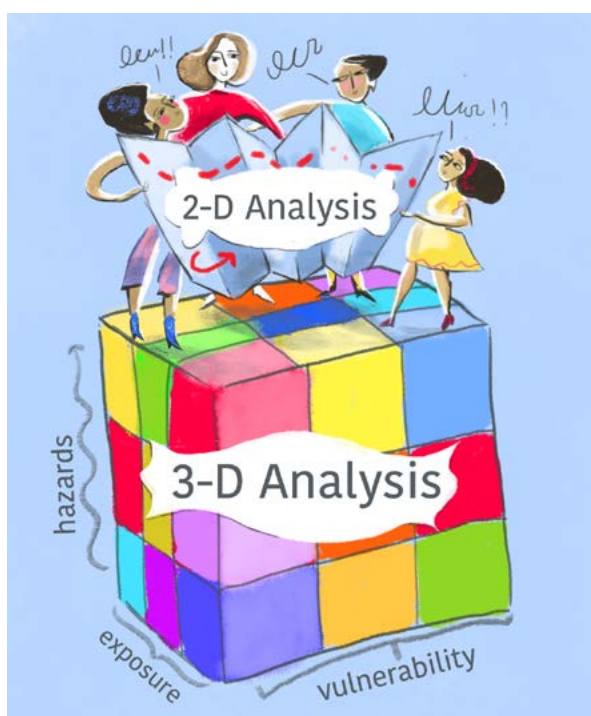
The IFRC Framework for Climate Action Towards 2020 outlines a vision for “communities across the world to be more resilient and better prepared for climate change impacts now and in the future.”⁴⁴ Achieving this vision will require mobilizing the full capabilities of the private sector. This in turn requires building the capacity of the private sector to lead on climate resilience.

In order to address the humanitarian consequences of climate change and extreme events, the Climate Centre aims seeks to influence investments, focusing on the management of physical climate risk and resilience.

The IPCC defines resilience as “the ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions.”⁴⁵

A resilient business must be able to anticipate, absorb, accommodate and rapidly recover from climate events. Business continuity requires these abilities to be present within own operations, throughout the supply chain, and within frontline communities. A complex, global and interconnected business cannot be resilient if it focuses exclusively on efforts within its own four walls. It needs to reach out to reduce harm to socio-ecological systems and enable people, the economy and natural systems to rebound quickly in the face of adversity. Businesses can be agents of climate resilience, benefitting from the availability of resources, the security of supply chains and transport routes, the protection of workers and infrastructure, and the rising prosperity of consumers and shareholders.⁴⁶ At present, two major shortfalls prevent business from realizing resilience in their own operations and beyond.

First, the private sector is misdiagnosing climate risk. Rather than focusing on a three-dimensional analysis of risk – hazard, exposure and vulnerability – the private sector focuses on a two-dimensional problem diagnosis, only hazard and exposure. This framing limits its capacity to build effective and comprehensive resilience strategies inside individual companies, across complex global supply-chains, and within front-line communities vulnerable to climate impacts. Companies are experiencing amplified climate risk because of this two-dimensional diagnosis and as a result, they are not only underprepared but also create systemic risk



44 International Federation of Red Cross and Red Crescent Societies (2017) Framework for Climate Action Towards 2020. IFRC, Geneva. p13.

45 IPCC (2012) *Summary for policymakers. In Managing the Risks of Extreme Events and Disasters to advance climate change adaptation.* A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK and New York.

46 Cameron, E.; Harris, S.; Pratico, E. 2018. "Resilient Business, Resilient World: A Research Framework for Private-Sector Leadership on Climate Adaptation" Report. BSR, San Francisco.

costly to the economy and to society. (See text box below for definitions of hazard, exposure and vulnerability.)

In 2012 the IPCC reassessed its approach to managing climate risk, creating a new paradigm for the climate science and policy communities. Drawing on disaster management principles, these groups now take a more comprehensive approach that includes defining climate risk in terms of hazard, exposure and vulnerability. Yet most corporations have thus far failed to update their own analyses. It is time for business to expand their perspective and embrace this three-dimensional approach to diagnosing risk that evaluates a company's vulnerabilities, as well as hazards and exposure.

Box 1. Definitions hazard, exposure and vulnerability

- **Hazard** refers to the possible occurrence of natural or human-induced physical events that may have adverse effects on vulnerable and exposed elements.⁴⁷ What is the likelihood of a climate-related event? And what types of events are most likely to occur?
- **Exposure** refers to the inventory of elements in an area in which hazard events may occur.⁴⁸ The presence of people, livelihoods, environmental resources and infrastructure, as well as economic, social or cultural assets turn a looming hazard into risk exposure. Does a particular business lie in the path of the hazard?
- **Vulnerability** refers to the likelihood of people, ecosystems, biodiversity, economic sectors, complex supply chains or individual companies to suffer adverse effects when exposed to climate-related physical hazards.⁴⁹ What underlying weaknesses can exacerbate risk for a business?

Most companies understand climate-related hazards and their exposure to them, but this limited view fails to account for a broad range of factors that can skew assessments and amplify risk – creating false alarms when a company may be relatively secure or missing important vulnerabilities altogether.

Second, the private sector is uninformed about the essential building blocks of climate resilience and therefore is failing to mobilize its full potential.

Investing in six **capital assets** represents the most effective and comprehensive means for the private sector to absorb, accommodate and recover from climate events. These are interdependent capacities that together address the underlying causes of vulnerability such as poverty, inequality, and environmental degradation.⁵⁰

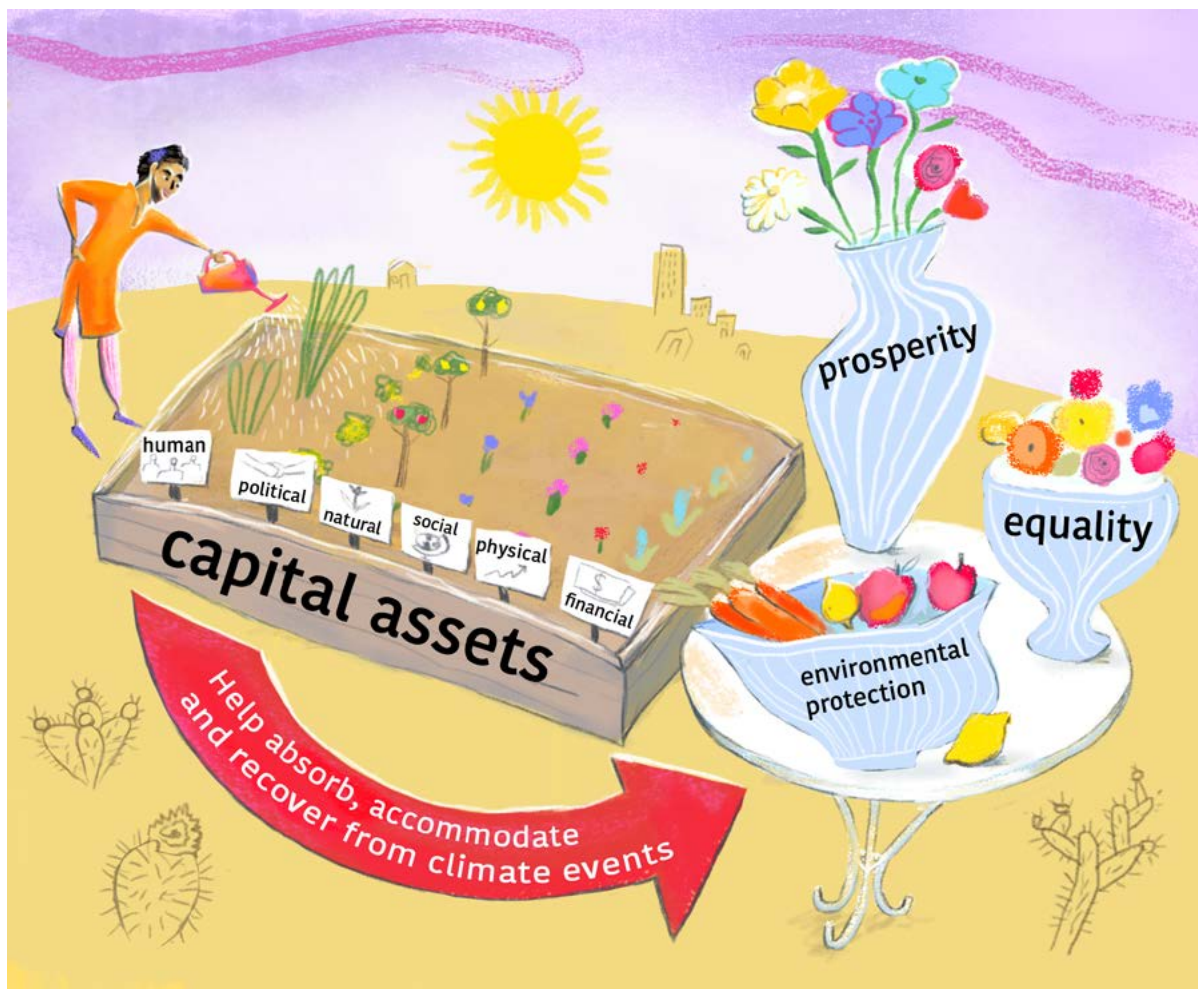
47 IPCC. 2012. Summary for policymakers. In *Managing the Risks of Extreme Events and Disasters to advance climate change adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK and New York. Pp 67-68.

48 IPCC. 2012. Summary for policymakers. In *Managing the Risks of Extreme Events and Disasters to advance climate change adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK and New York. P 69

49 IPCC. 2012. Summary for policymakers. In *Managing the Risks of Extreme Events and Disasters to advance climate change adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK and New York. P 67.

50 Keating, A. et al (2014) *Operationalizing resilience against natural disaster risk: Opportunities, barriers and a way forward*. Zurich: Zurich Flood Resilience Alliance.

- **Human capital** refers to the skills and knowledge of available human resources, particularly in the workforce. A company might enhance human capital by investing in skills and training for the workforce to cultivate agents of broader household and community resilience. They might lead on technology development, transfer and diffusion; conduct hazard- and vulnerability-mapping focused on their workforce; work with government to produce early-warning and response systems for their communities; and undertake participatory scenario development to prepare workers for climate impacts. Businesses also decide who has access to their jobs through their diversity and inclusion programs that seek to bring marginalized groups such as refugees, the homeless, or the formerly incarcerated into the workplace. Businesses also decide who has access to employment with them by the choice of whether to locate their facilities near public transport or in regions of a country with high unemployment.



- **Social capital** refers to strong relationships, collaborations, and bonds of mutual support and cooperation that are essential for addressing a systematic global challenge such as climate change. When reciprocal claims for support can be made within communities in times of stress, this adds considerably to adaptive capacity. Activities and businesses that strengthen social bonds and aid the spread of ideas and resources are considered extremely important elements of social capital. A company might enhance social capital by establishing planning boards designed to evaluate risk and create strategies for resilience. These boards should include worker representatives. Social media and technology companies might work to enhance virtual social-networks that can provide support in times of crisis.

- **Natural capital** refers to the full range of services from biodiversity and ecosystem services, including land and water. For example, wetlands are vital to climate resilience because they protect upland areas, including valuable residential and commercial property, from flooding due to sea-level rise and storms. They further prevent coastline erosion due to their ability to absorb the energy created by ocean currents. Companies might work to enhance natural capital by maintaining wetlands and urban green-spaces, reducing other stressors on ecosystems and habitat fragmentation, diversifying water resources and improving integrated water management, changing cropping, livestock, and aquaculture practices, and investing in green infrastructure.
- **Physical capital** refers to infrastructure, equipment, facilities, logistics, communications, utilities, and even genetic agricultural resources. Physical capital is vital in securing communities against extreme-weather events that are increasing in intensity and frequency. Flood defences and storm shelters are increasingly common in low-lying states and coastal regions. Climate-proofing infrastructure is recommended in locations experiencing stronger storms. And investments in roads, bridges, and stronger protections for utility services are vital for ensuring continued links across supply chains and between workers, employers, and consumers in the aftermath of climate-related events.
- **Political capital** refers to access to decision-making to shape policy environments to enable resilience. Just as climate change undermines the realization of human rights, the strengthening of human rights is arguably the most important intervention to enhance resilience. Access to information helps vulnerable populations anticipate climate-related events and take preventative action. Being more considered in decision-making enables marginalized communities to help shape public policy in a manner that accounts for their specific vulnerabilities. And access to justice enables communities to hold both the public and private sector accountable for failures to build resilience in a manner that is proportional. Political capital is also critical to addressing the social, cultural, and economic inequalities that exacerbate risk to climate change. These inequalities include the differentiated vulnerability faced by women, indigenous peoples, and the urban poor. Companies can enhance political capital by advocating for several things: reduced gender inequality and marginalization in all its forms; the extension of social safety nets and protection to women; and improved access to information, decision-making, justice, education, health, energy, and housing. Businesses exert great influence over the public policy environment on issues that affect inclusion. In the US, trade associations frequently engage in lobbying actions on issues such as minimum wage, overtime, unions, and affordability of health insurance and prescription drugs, all of which affect outcomes in inequality in income, wealth, and health. Similarly, company choices around tax-payment practices also affect the degree to which governments can provide basic services like health, schools, and infrastructure.
- **Financial capital** refers to the volume of available financial resources and access to financial goods and services. It concerns both the mobilization of increased financial flows in support of resilience and the critical expansion of financial services to frontline sectors, companies, and communities. Companies can enhance financial capital through the provision of insurance schemes, the diversification of income, assets, and livelihood, the provision of catastrophe bonds, the development of microfinance products, and the facilitation of cash transfers to front-line communities. Improved employment practices can also enhance financial capital, as business can set wage and working conditions for individuals impacted by climate change. Companies make strategic choices around whether to pay a living wage to their front-line workers, as well as whether these workers will receive the same benefits in insurance, paid holiday, and predictable and flexible working hours that the white-collar workforce receives. This has implications for the financial resources individuals can call upon in times of exposure to climate hazards.

In addition, it is worth noting the strong parallels between the capital assets and the IFRC's six characteristics of a disaster resilient community.⁵¹ A safe and resilient community

1. ...is knowledgeable and healthy. It has the ability to assess, manage and monitor its risks. It can learn new skills and build on past experiences
2. ...is organized. It has the capacity to identify problems, establish priorities and act.
3. ...is connected. It has relationships with external actors who provide a wider supportive environment, and supply goods and services when needed.
4. ...has infrastructure and services. It has strong housing, transport, power, water and sanitation systems. It has the ability to maintain, repair and renovate them.
5. ...has economic opportunities. It has a diverse range of employment opportunities, income and financial services. It is flexible, resourceful and has the capacity to accept uncertainty and respond (proactively) to change.
6. ...can manage its natural assets. It recognises their value and has the ability to protect, enhance and maintain them.

The Movement, including the IFRC's Climate Centre, brings existing comparative advantages to its engagement with the private sector. It has considerable substantive expertise and the ability to generate information products on risk and resilience at the precise moment when the need in the private sector is becoming starker.

Its deep roots in front-line communities through 191 National Societies, 160,000 local offices and an extensive network of 17 million volunteers are particularly relevant for SME and supply-chain resilience. The Movement has considerable abilities to deliver large-scale information campaigns through community volunteers, a strong track record and ability to influence disaster law, and existing collaborations with the private sector around areas of risk management such as the common alerting protocol.

The Climate Centre supports practical action to address climate rising risks, by providing technical inputs to Red Cross Red Crescent actors and their partners, so they can integrate climate-risk management approaches into their work, across sectors and scales, from local, national, and regional to global level. Engagement with the private sector should begin by educating companies on the three dimensions of climate risk and outlining the specific ways in which individual companies can invest across the full six capital assets.

The Climate Centre's ability to develop information products that communicate climate risk and propose strategies for climate resilience is a primary comparative advantage. This ability can be used to propose action that the private sector can take across complex global supply chains as well as the policies they should advocate (e.g. social protection that is sensitive to climate shocks) and the investments they should make.

51 FRC (2012) Characteristics of a Safe and Resilient Community: community-based disaster risk reduction study. IFRC, Geneva. https://www.ifrc.org/PageFiles/96986/Final_Characteristics_Report.pdf

Similarly, the centre's ability to design and facilitate connections among diverse actors and nurture innovative communications with far-reaching results is a key comparative advantage. The private sector is exhausted by the style of communication common in the international public sector in which stakeholders are invited to participate in tedious meetings with prepared statements and no real dialogue. Stakeholder engagement that is accessible and actionable is in strong demand.

Just as climate emission reduction strategies (climate change mitigation) are beginning to take a full supply-chain approach, so too will corporate resilience strategies. As a result, the Climate Centre and the wider Movement will have a competitive advantage based on the depth of experience and relationships in key geographies. The Movement has a global outreach and local presence that allow it to understand and respond to local contexts and priorities and bring this perspective to national and international processes.⁵² This makes the Red Cross Red Crescent a clear partner of choice in climate initiatives, seeking to make a difference on the ground and with the last mile to communities themselves.

52 IFRC, Federation wide data bank and information system, <http://data.ifrc.org/fdrs/report/who-we-are>

4. Conclusion

Climate change amplifies existing risks and creates new ones for natural and human systems. As a consequence, it undermines the mission of the humanitarian community and poses a threat to business, threatening to disrupt supply chains and reduce corporate competitiveness and profitability. Companies are emerging as climate leaders, greatly expanding their leadership roles with aggressive greenhouse gas emissions reductions and advocacy on policy. It is now time for them to expand their climate portfolios with a greater emphasis on resilience.

Such an expansion would bring immediate and significant advantage to the humanitarian community. Companies can help scale up to efforts to manage risk and build resilience. They have the capacity to mobilize finance that dwarfs the current investments from public funds and the humanitarian sector. Companies can also enhance access to products, services, innovations and finance, helping to expand the six types of capital assets that are key building blocks of resilience: *human, social, natural, physical, political* and *financial capital*.

Multinational companies are important components of global supply-chains and have footprints in every community and the ability to strengthen the capabilities of those most vulnerable to climate including low-income populations and women. Companies have political influence and consequently can be powerful partners in advocating a greater public policy focus on resilience, including addressing the structural discrimination that exacerbates risk.

But companies also have limitations. Worldwide they misdiagnose climate risk, focusing on exposure to hazards while blinded to the importance of vulnerability. At best they are failing to address underlying weaknesses; at worst they are pursuing strategies that lead to maladaptation.

Businesses are also underestimating the potential impacts of climate change, and so passing on elevated risk to shareholders. They have little climate-resilience expertise, lack an understanding of the six capital assets, and are therefore failing to mobilize their full capabilities in support of greater resilience.

It is clear that companies will not realize their full potential as partners in resilience without collaboration and capacity building from the humanitarian community and the community of practice in resilience. Collaboration will be enhanced if the humanitarian sector can adopt the motivations, incentives, priorities and language of the private sector.

Typically, companies make decisions based on an understanding of risk and rewards related to finance, operations, human resources, compliance and legal issues, marketing and sales, and strategy. While they rarely speak the language of vulnerability, companies do speak of enterprise risk-management, business continuity, and supply-chain competitive advantage. Learning this language and appealing to these incentives will heighten the possibility of productive collaboration.

As humanitarians we confront an urgent need to ensure increased investments in climate risk management and adaptation. We can do much more through concrete strategies to address climate risks for and with companies. If we recognize the transformative power it holds to reduce risk through ongoing and future investments, the private sector can work with us to shape the future of risk management. From better use of climate information across timescales (linking early warnings to early actions) to methods that empower them to understand the vulnerability dimension of climate risks, the Red Cross Red Crescent Movement can and must harness the power of the private sector to improve community resilience across the globe.