



The GAR 2013 brand iconography is based on an image of a person holding an inverted umbrella. The inverted “A” in the GAR 2013 logo is a resonance of this motif.

The person holding an inverted umbrella is about seeing something from a new perspective, a call for creative responsiveness to change. A simple ubiquitous tool, proposed in a new way... the grandest breakthroughs often come from such humble beginnings.

The image represents acting to overturn a legacy of apathy and ignorance. GAR 2013 provides clear and actionable information about the risks and rewards of disaster risk reduction, as well as a wealth of information about how we unwittingly generate, and exacerbate, risks.

The icon also represents the key message of GAR 2013: “Creating Shared Value.” This is nowhere more evident than in the power that each of us has to work together to make our societies more resilient, to reduce disaster risks and enable responsible use of resources. Rain drops, one at a time, may seem insignificant, but given a platform to become pooled resources, they can quickly become a powerful force for good.

Thus, the inverted umbrella is an icon of positive empowerment, advocating disaster risk management as an opportunity rather than a cost, something which makes you — your city, your business, your supply chain, and yourself — more sustainable and more competitive.



# Preface

## The Global Assessment Report on Disaster Risk Reduction: a retrospective

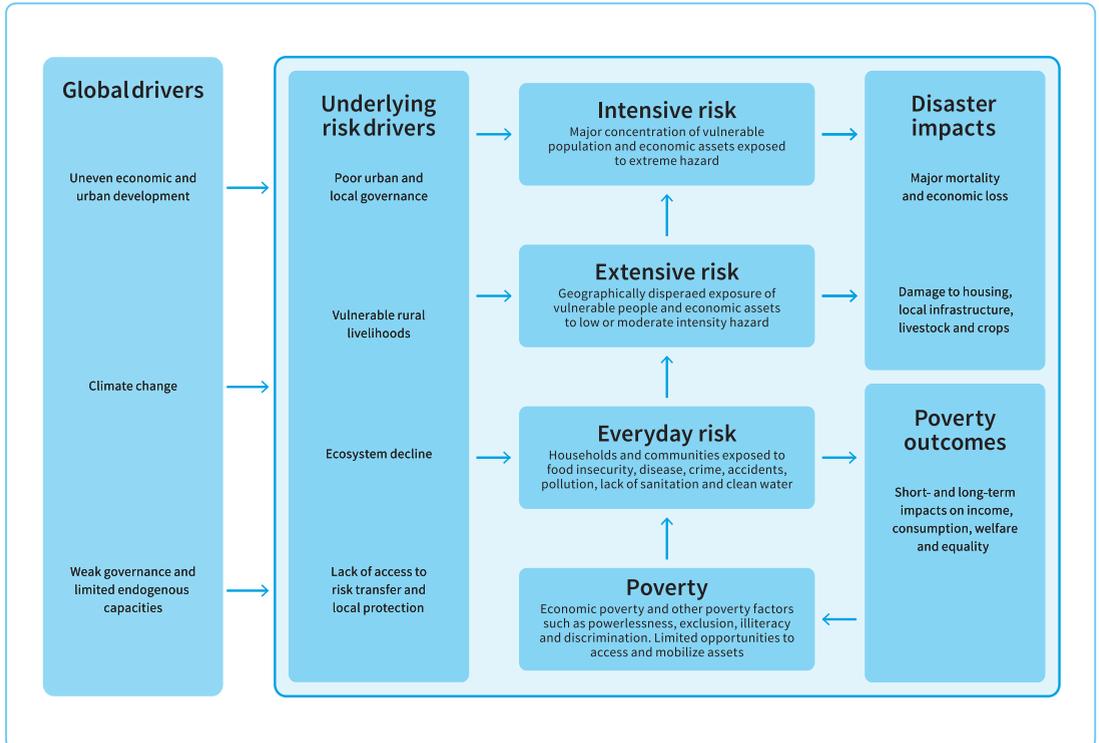
This 2013 Global Assessment Report on Disaster Risk Reduction, *From Shared Risk to Shared Value: The Business Case for Disaster Risk Reduction (GAR13)*, is the third biennial report coordinated by the United Nations Office for Disaster Risk Reduction (UNISDR).

The first Global Assessment Report on Disaster Risk Reduction, *Risk and Poverty in a Changing Climate (GAR09)*, as well as the second, *Revealing Risk – Redefining Development (GAR11)*, focused primarily on public policy and the role of national and local governments in disaster risk reduction. The key message of GAR09 was that addressing the underlying

risk drivers is critical not only to the achievement of the Hyogo Framework of Action (HFA)<sup>i</sup>, but also the Millennium Development Goals (MDGs) and climate change adaptation. GAR11 built on that evidence to provide guidance to governments on how to effectively manage their disaster risk.

GAR09 highlighted how intensive disaster risk is disproportionately concentrated in lower-income countries with weak governance. Within countries, it showed how underlying drivers—such as poor urban governance, vulnerable rural livelihoods and declining ecosystems—concentrate extensive disaster risk in low-income communities and households and drive further the depth and breadth of poverty, undermining development (Figure 0.1).

**Figure 0.1** GAR09 - Risk drivers and poverty outcomes



(Source: UNISDR, 2009)

It also found that, although progress was being made to strengthen capacities for disaster preparedness and response, governments were challenged to tackle underlying risk drivers.

GAR11 provided further evidence on why disaster risk was increasing and why existing efforts in its reduction were failing to address underlying risk drivers. The report provided an updated analysis of global disaster risk and loss trends and a second biennial review of progress against the HFA. It then identified political and economic imperatives for increased public investment in disaster risk reduction. A cost-effective strategy for layering disaster risk management was proposed—which layers of risks to reduce; which to insure; and which to retain.

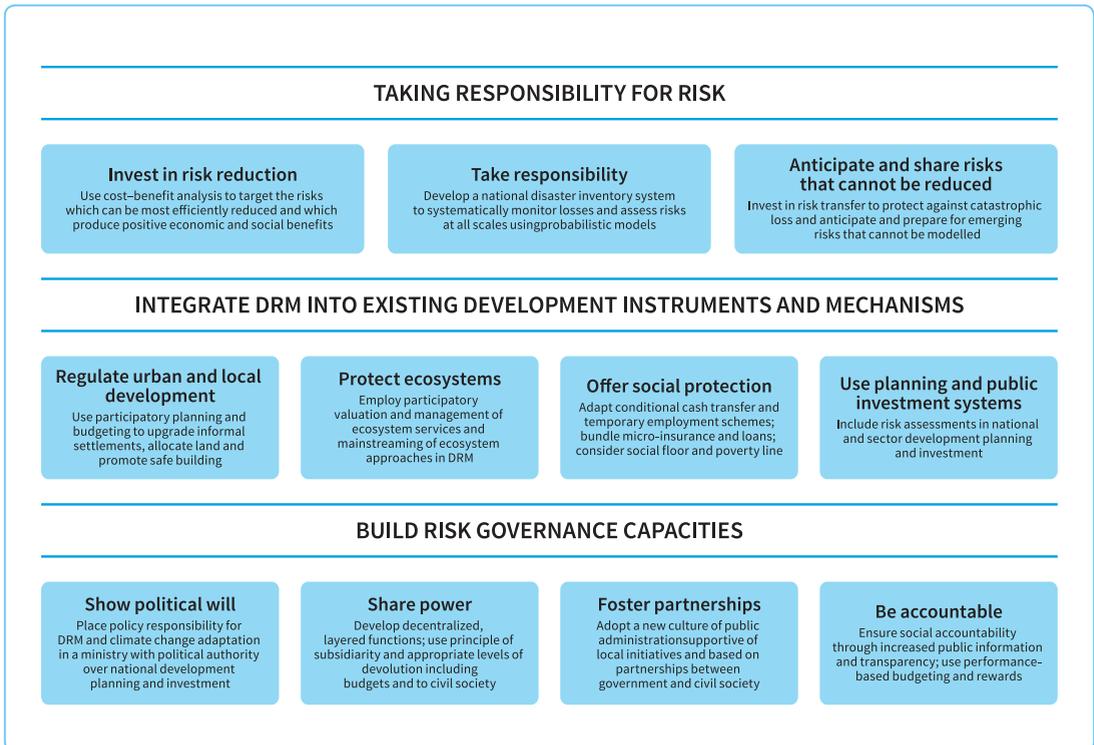
GAR11 described the mechanisms through which governments can deliver responsible and consistent policies for risk reduction, integrate disaster risk management into existing development

instruments, and build and strengthen risk governance capacities (Figure 0.2).

In most economies, public investment represents only 15–30 percent of gross fixed capital formation.<sup>ii</sup> How the other 70–85 percent of investment is made, therefore, has far-reaching consequences on disaster risk accumulation and on the underlying risk drivers identified in GAR09. In future, trillions of dollars of new business investment will pour into hazard-exposed regions, largely determining the future of disaster risk.

Despite their importance, business investment practices were neither highlighted in the HFA nor have interactions between business investment and disaster risk and the factors that mediate those interactions been seriously examined. Like the HFA, research and literature on this topic has concentrated on the role of governments, communities and households rather than of businesses.

**Figure 0.2** GAR11- Key elements for successful disaster risk management (DRM) across governance scales and development sectors



(Source: UNISDR, 2011)

Building on the findings of GAR09 and GAR11, this third Global Assessment Report on Disaster Risk Reduction seeks to fill that gap. It explores why increasing disaster risks represent a growing problem for the economic and business community at different scales. The report examines how paradoxically business investments that aimed to strengthen competitiveness and productivity may have inadvertently contributed to increasing risk.

GAR13 explores how businesses, by investing in disaster risk management, can reduce costs and interruptions represented by disaster losses and impacts; how performance and reputation can also be enhanced by minimising uncertainty and unpredictability; why effectively managing disaster risks should be the hallmark of a competitive, sustainable and resilient business; and why a broader approach to business value creation that also addresses underlying drivers of risk is required.

GAR13 highlights the interdependence of the public and private sectors and why business competitiveness, sustainability and resilience will also depend on governments' ability to manage disaster risk through effective policies. Governments depend on business investment to generate employment and the wealth required to provide public services. Likewise, businesses depend on reliable public infrastructure and utilities, on efficient urban systems, on an educated and healthy workforce and on a range of ecosystem services. Reducing disaster risks in business and in public investment presents a win-win situation for both.

The principal of shared value involves creating economic value that also benefits society by addressing its needs and challenges (Porter and Kramer, 2011). Risk drivers, such as badly planned and managed urban development, environmental degradation, climate change and poverty and inequality, are key societal challenges that also negatively affect business performance. Thus they create shared risks to both public and private sectors. Disaster risk reduction can and should transform these

shared risks into shared value for business, governments and civil society.

### Why do disasters challenge business?

The major disasters that struck Japan and Thailand in 2011 and the United States of America in 2012 revealed how disasters can impact businesses. Earthquakes, floods and storms can damage exposed and vulnerable factories, offices and other facilities and resources, interrupting and paralysing output and business processes.

But disaster risk does not stop at the factory gate. Businesses depend on infrastructure and urban systems run by utilities and the public sector. Damage to transport and energy networks, ports and airports or to neighbourhoods where employees live interrupts business and imposes additional costs. And in today's globalised world, even businesses in safe locations may be affected by disasters that hit suppliers and partners on the other side of the globe.

Extended insurance coverage may enable businesses to compensate for both direct loss as well as supply chain interruption. But disasters have broader, more pervasive effects on business competitiveness. When business is interrupted, skilled workers may leave, market share may be lost to competitors, relationships with key suppliers and partners may be severed and confidence and reputation may be eroded. Once business is lost, it may never come back.

Businesses, of course, come in many shapes and sizes. And different sizes are exposed to different kinds of risk. Small businesses, for example, that serve local markets are affected directly by localised extensive disasters, as associated with flooding or landslides. And these businesses also depend heavily on local public infrastructure. Destruction of a bridge in a flash flood, for example, may isolate a local smallholder farm, workshop or restaurant from markets and suppliers for days. And many such businesses go bankrupt because they lack the cash flow or reserves to be resilient.

Large global corporations, at the other end of the spectrum and owing to their diversity and scale, are largely buffered from local impacts in any particular place. However, a major intensive disaster may critically disrupt their supply chains and global operations; for example, if a major transshipment hub or key supplier is affected. And the recurrent impact of smaller disaster events in regions where corporations seek to establish effective clusters of suppliers and vibrant consumer markets may result in equally significant losses in the medium to long term. Medium-sized enterprises and national industries similarly face different kinds of disaster risk as they may be affected by both relatively small-scale localised events and larger disasters.

### Creating shared risks

Although hazards such as earthquakes, cyclones and tsunamis are natural in origin, there is nothing natural about the way disaster risk has become embedded in the contemporary business landscape. Decades of businesses decentralising and outsourcing production to facilities located in areas with comparative advantages, such as low labour costs and easy access to export markets, has been critical to enhancing business competitiveness and productivity. However, because many of these areas are hazard prone, it has dramatically increased the exposure of businesses and their supply chains to devastating hazards.

Investors have paid insufficient attention to this growing hazard exposure and its threat to business resilience, competitiveness and sustainability. Country briefings, analysts' reports, competitiveness indices and business forecasts rarely mention disaster risk, even in high-risk regions. Cities and countries, competing to attract investment, have generally downplayed the risks, in some cases even offering incentives to businesses to locate in hazard-exposed areas. And the pricing of risk in insurance markets has yet to act as an effective disincentive to investment in hazard-exposed areas.

In other words, economic globalisation has enabled

critical gains in business productivity and efficiency, but those gains have been at the expense of an over-accumulation of disaster risk in many business sectors and in the global economy as a whole.

Many of these risks and costs are externalised, transferred to and shared with governments, society at large and future generations. As GAR09 highlighted, disasters disproportionately affect lower-income countries, communities and households, and those who benefit least from wealth creation owing to economic globalisation.

However, from the perspective of shared value, this process of risk transfer is far from external to business. Losses to public infrastructure and services, to the workforce and to ecosystems also ultimately threaten the sustainability of all businesses—large and small—and thus in the medium to long term, become a shared risk.

### The business case for disaster risk reduction

In today's global economic and political turmoil, rapid technological change and increasing interconnectedness of global trade, financial markets and supply chains, larger businesses perceive an increasingly riskier world. For businesses, this means an array of complex, unpredictable events and sudden change in which risks can manifest swiftly and unexpectedly, with far-reaching ramifications.

Within this landscape, the reduction of disaster risks is taking on new significance and urgency for all global players. Investments in disaster risk management are increasingly being seen less as a cost and more of an opportunity to strengthen resilience, competitiveness and sustainability.

Larger businesses are investing to secure and strengthen their capacities and strategies for risk management. Institutional investors, with a fiduciary responsibility to their shareholders to ensure prudence and sustainability, are now exploring regulatory and voluntary actions to increase the visibility of all risks, including those associated

with disasters and climate change.

More important, if business investment becomes more risk-sensitive, governments will be encouraged to invest more heavily in disaster risk reduction. Effective disaster risk management will become a basic requirement for competitive countries and cities that are successful in attracting business investment.

A growing convergence of public and private initiatives to model and estimate disaster risks is beginning to underpin these efforts. Disaster risk management platforms and applications are now being developed to allow businesses to incorporate these data into their investment decisions. Accurate risk data, in turn, facilitate the development of insurance markets, with appropriate pricing that encourages risk-sensitive investment.

But above all, businesses now begin to perceive investments in disaster risk management as a compelling proposition to create shared value. Investments in climate change mitigation, sustainable water management and green cities directly address underlying risk drivers and at the same time become increasingly important in value creation for businesses of all types.

Businesses are finding huge opportunities in disaster proofing new and existing infrastructure, buildings and supply chains, which are also critical to risk reduction and global sustainability. Investing to reduce the vulnerability and strengthen the resilience of smaller businesses that are suppliers and partners of larger businesses not only strengthens the latter's business sustainability but also generates shared value in securing local employment, increased productivity, tax revenue and welfare.

Disaster risk reduction, therefore, is a compelling shared value proposition for business. This component needs to be recognised in the formulation of the revised international frameworks for development and disaster risk reduction that will be adopt-

ed in 2015,<sup>iii</sup> as well as for future international negotiations around the challenge of climate change, if the world is to achieve a socially inclusive, low-carbon and resilient economy laid out by the Secretary-General of the United Nations (United Nations Secretary-General, 2012).

### **A new and advanced GAR13**

The previous two editions of the Global Assessment Report were predominantly written for an audience of policy- and decision-makers in government departments. GAR09 laid out key recommendations for governments as well as civil society actors engaged in disaster risk management; GAR11 sought to reach beyond this traditional audience and targeted its analysis and findings particularly at finance and planning ministries of national governments.

In expanding its analysis to include and focus on the role of private investment, GAR13 aims at business leaders and private investors, on the one hand, and at local and national regulators, on the other hand. This report seeks to engage businesses in a dialogue on disaster risk management that goes beyond the current emphasis on response and preparedness and instead identifies opportunities for the creation of shared value for business and society.

As with previous Global Assessment Reports on Disaster Risk Reduction, GAR13 has been developed on the basis of original research commissioned to and contributed by a wide range of partners, including academic, scientific and technical organisations, governments and regional organisations, international and non-governmental bodies and most importantly by the private sector on a global scale. This report offers businesses as well as investors for the first time a review of practices that can reduce their risk of disaster loss.

### **Key features of GAR13 include:**

#### **A global assessment of economic disaster risk**

A completely new probabilistic multi-hazard GAR global risk model is being developed in collaboration with scientific and technical partners to replace

the earlier model used in GAR09 and GAR11. This major modelling initiative will provide a unique vision of global disaster risk, generating information and metrics for risk-sensitive investment planning for governments and business, as well as for analysts and forecasters. An overview of the methodology is provided in Annex 1 of the online version of GAR13.

GAR13 also explores the resilience of national economies to these risks through a number of different models, indexes and simulations, including the development of hybrid loss exceedance curves, building on the pioneering work in GAR11.

### **A more complete estimation of disaster losses**

The number of countries developing national disaster loss databases continues to grow. GAR13 features detailed national disaster loss data from a total of 56 countries, including new data from Djibouti, Ethiopia, Guyana, Honduras, Jamaica, Kenya, Lebanon, Laos, Mali, Nicaragua, Timor Leste, Uganda, Uruguay and a regional database for the Pacific Island nations.

A new approach to modelling direct economic losses from these data permits most likely the most complete estimation to date of the real cost of disasters. This approach combines internationally reported economic losses from intensive disasters, as recorded in the EM DAT database, with modelled economic losses in the housing, infrastructure and agriculture sectors from extensive disasters captured in national disaster databases. The detailed methodology and summary of results are available in Annex 2 of the online version of GAR13.

### **Understanding how businesses manage disaster risk**

A centrepiece of GAR13 is an in-depth analysis of how businesses are currently managing their disaster risks.

In partnership with a major consultancy company, workshops were held with 14 global corporations

from Asia, Europe and North America to understand current approaches to disaster risk management, challenges and opportunities. Based on an innovative risk management framework, these workshops provide lessons learned and unique insights into how large global businesses assess disaster risks and how this information is used to inform risk management.

A survey of about 1,200 businesses in six disaster-prone cities in the Americas (Bogota, Kingston, Miami, San Jose, Santiago and Vancouver) provides valuable information on another perspective, in particular, on the capacities of small and medium-sized businesses to manage disaster risks. This survey also examines the enabling environment for private sector involvement in disaster risk reduction.

### **Reviewing progress in disaster risk reduction**

At the time of writing, 131 countries are reviewing their progress against the HFA for 2012–2013, and 94 countries have submitted reports that provide unique insights into the implementation of the HFA. Governments have reviewed their progress against each of the priority areas of the HFA, and provided supporting evidence on challenges in critical areas such as public investment and risk assessment. GAR13 highlights these developments, and a fuller analysis of all national reports is presented in Annex 3 of the online version.

In addition, governments in eight countries in Asia and Latin America have provided detailed case studies of their investments in disaster risk reduction and how these are measured. As new investments flood into emerging economies, results reported in these case studies provide useful context.

In partnership with a major global social research organisation, 30 senior officials in national finance and planning ministries, regional and international organisations were interviewed, providing additional insight into how policy- and decision-makers view the risk landscape.

## **A focus on the urban development, tourism and agribusiness sectors**

GAR13 also commissioned research to examine the challenges and opportunities to risk-sensitive business investment in three sectors: urban development; tourism; and agribusiness. These sectors are not only some of the most dynamic in the world economy, but also play a key role in the configuration of disaster risks. In each sector, GAR13 examines the interactions between business and the public sector and the incentives and constraints for disaster risk reduction.

## **Finance, insurance and public regulation**

Business investment decisions in these and other sectors are mediated by the availability of finance, insurance pricing as well as public sector regulation and incentives.

In partnership with the insurance industry, and through a set of case studies, GAR13 examines the challenges faced in the development of insurance markets that contribute towards risk-sensitive business investment. It also looks at the role of capital markets and financial institutions in providing incentives or disincentives for risk-sensitive investment.

Public regulation has traditionally been privileged as a means to avoid the externalisation of risks and costs by business investments to the public sector and community. But GAR13 also examines how the incentives provided by countries and cities to attract foreign direct investment (FDI) may actually encourage investment in hazard-prone areas. Further, it seeks to identify examples where it has been recognised that the costs of the resulting shared risks are becoming untenable for both business competitiveness and the sustainability of societies.

## **Nascent business practices in disaster risk management**

GAR13 also identifies and describes nascent business practices that are starting to positively transform the landscape of disaster risk management.

These practices include efforts to strengthen corporate risk management strategies; new approaches to supply chain resilience; initiatives to increase the accessibility and usability of risk information; investors' growing appetite for risk disclosure and transparency; and new opportunities for creating shared value by investing in disaster risk management in partnership with the public sector.

## **How to use this report**

GAR13 has been structured around a set of contributed and commissioned Background Papers, as well as risk and disaster data. More in-depth research and case studies than ever before have been developed for this edition of the GAR, including studies submitted in response to a Call for Papers issued to relevant academic institutions and networks in early 2012. GAR13 is available in a number of different formats.

- The Augmented Reality print GAR13 contains enhanced content that provides access to additional digital information, such as dynamic maps, videos, photos and case studies, for users with smartphones and tablets.
- The Pocket GAR provides the main evidence and messages of the report in a short and easy-to-use format.
- GAR13 is also a feature on Tangible Earth<sup>iv</sup> – the world's first interactive digital globe that allows users to view and understand the condition of our planet. Global risk and disaster data that underpin the report, as well as case studies and in-depth analysis of particular disaster events, are presented in a format that offers readers a unique way to visualise disaster risk and its reduction.
- Tablet computer and smartphone users can also enjoy the GAR for Tangible Earth (GfT) free application. GfT, or "gift", is a fully interactive stand-alone application, which features a 3D globe interface that contains decades of dynamic earth science data sets, including disaster events from

all GARs. These data sets are illustrated with interactive risk scenarios, maps, and photos and are searchable by time (including real-time), place, risk driver, hazard, disaster event, and more.

- Finally, GAR13 is also available as an interactive web version, including all Annexes and Background Papers with much of the functionality available in all the above products.

## Notes

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i The World Conference on Disaster Reduction, held from 18–22 January 2005, in Kobe, Hyogo Prefecture, Japan, adopted the Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters.

ii In OECD countries, the share of private sector investment in total fixed capital formation was 85 percent in 2010 (OECD, 2013). In low and middle-income countries, the share of private sector investment is lower (almost 70 percent in low and lower middle-income countries and about 64 percent in upper middle-income countries in 2009), but has increased steadily, significantly contributing to total GFCF growth. Especially the share in lower middle-income economies increased by almost 10 percent since 1996 (based on World Development Indicators: <http://data.worldbank.org/data-catalog/world-development-indicators>).

iii 2015 is the year in which three major international development processes will be reviewed and efforts towards sustainable development renewed in the form of the reviewed Millennium Development Goals, the follow-up to Rio+20 in the form of Sustainable Development Goals, and the successor agreement to the Hyogo Framework for Action. To which degree these processes will converge or remain distinct has to be seen.

iv Tangible Earth was first conceived by Shinichi Takemura in 2001. For more information, see: <http://www.tangible-earth.com/en>.

