The UN Sendai Framework: how it connects to the global financial system

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Purpose of study
This thematic study forms an input in the United Nations Office for Disaster Risk Reduction’s Mid-Term Review of the Sendai Framework of 2015.

The study concerns itself with the Global Financial System. It describes how it has interacted with the Disaster Risk Reduction (DRR) agenda since the publication of the Framework and the challenges and opportunities the global financial system presents and promises for DRR. The study concludes by making recommendations on how the global financial system could be re-aligned to minimise unwanted effects on DRR and bring its power and ingenuity to bear on delivering the greatest benefit to the priorities established by the Framework.

SECTION 1: SCOPE

We have restricted the scope of the study to financial actors: those who seek to make a return on a transaction, even if on concessionary terms, and their regulators. Consequently, direct aid and charitable donors are excluded from consideration. Mindful of Sendai’s focus on multi-hazard risk, connective and cascading risks, we broadened our search beyond physical hazards and climate change to assess to what extent the global financial system viewed risks such as pandemics, habitat loss and existential technological risks through a DRR lens.

We have also generally not emphasised initiatives that are confined only to reducing greenhouse gas emissions in the round. Readers may find this counter-intuitive. Emissions reduction is regarded as the most important long-term goal, in terms of enhancing DRR and prevention is better than cure. Our reasoning is that the abstracted goal of reducing total emissions in the atmosphere is too weakly linked temporally to practical and measurable public goods in the short-to-medium term for those most affected. In the global financial system, this is not merely an academic point. An asset manager that creates a fund comprising only low-carbon companies is not translating a relative measure of exposure into tangibly improved DRR consistent with the Sendai Framework. By contrast, a group of re-insurers coming together with the express aim of narrowing the protection gap for populations vulnerable to disasters via pooled and affordable coverage, including climate-event mitigation and resilience opportunities for policyholders, meets our test.
Finally, though it may seem obvious, we excluded the global financial system’s tackling of endemic financial crises and disasters such as depressions arising from conventional threats such as asset bubbles, hyper-inflation et cetera except where these distort direct DRR efforts.

The Global Financial System is exceedingly complex but in terms of how it interacts with DRR, it can be simplified into the following categories of actors:

- Multi-Lateral Development Banks (MDBs) and Development Finance Institutions (DFIs)
- The Risk Transfer Market: principally re/insurance
- Commercial Banks
- Institutional Investors (asset owners and asset managers)
- Financial Regulators, including central banks, accounting standard setters and other rules and standards-based institutions
- Intermediaries, including investment banks, investment consultants and research providers.

We have not included companies in general on this list except where they are financial institutions. In any case, companies are such a distinct group that they deserve - and receive – exhaustive coverage elsewhere in a category all their own.

Figure 1: Simplified International Architecture in relation to Disaster Risk Reduction

- **Regulators and policymakers** have a skill to detect market failures, such as a tendency toward short-termism, which cannot be asked by market participants. They should align incentives in financial services with the DRR outcomes agreed by national governments, ensuring they can manage and mitigate the long-term financial stability risks they are increasingly identifying.

- **Investment and insurance consultants** provide due diligence and linking services to the reinsurance industry as well as acting as gatekeepers and advisors to asset managers on behalf of asset owners. They can advise and influence their clients and designee managers as regards integration of ESG and DRR measures, especially climate change.

- **Asset managers** are professionally bound to consider all material risks to the financial returns of known conflicting interests of their clients. The past decade has seen a huge increase in asset manager engagement in Environmental, Social & Governance (ESG) and especially climate factors into their investments, to reduce risk and have a positive impact on climate.

- **Asset owners such as pension funds, insurers and sovereign wealth funds** control a large proportion of global assets. They can encourage their asset managers to make investments that help to improve the financial stability of the global financial system and engage with the DRR agenda, e.g. through impact investing that targets specific DRR outcomes, like resilient infrastructure.

- **The Risk Transfer Market** comprises insurance companies, re-insurers, reinsurers and re-insurers. It is the way insured costs of disaster risks can be diversified across the financial system while allowing dollar risk takers to generate a profit. The Risk Transfer Market plays a central role in the governance of Disaster Risk Reduction because its financial nature aligns with increasing core profits and reducing insured costs, profit. Consequently, their ability to make up cover and incentivize prudent behaviors among the insured are vital to the DRR agenda.

- **Credit Rating Agencies** should continue to improve their integration or DRR agenda. They have a role to play in flagging high credit risk when material, and be transparent about the approach they take. They play an important role in setting the time horizons for relevant risks occurrence but will only do so if mandated by regulations.

- **Sovereign debt and rating agencies** should encourage companies listing with them to disclose consistent, comparable and timely sustainability information, working with regulators and standard setters in instances where they cannot act for this information directly. They should help promote sustainable financial products and educate companies, investors and individuals on the merits and incentives of sustainable finance.

Companies (including those elsewhere in this diagrams) should disclose consistently, and transparently on the alignment of their activities with internationally and nationally recognized international principles such as the United Nations Principles for Responsible Investment (UN PRI), the International Corporate Governance Network (ICGN), and the International Capital Standards Committee (ICSC). Companies should also be proactive in engaging with their investors, clients, customers, employees and host communities on and engage with their investors, customers, employees and host communities on and encourage any innovations into their practices.

- **Individuals** are crucial and often overlooked participants in the financial system. Their savings fund investments in companies, which in turn are their major employers. Disasters find their ultimate expression through their impact on people and other living systems. The financial world is quite opaque to most people and they necessarily give up much insight into the processes that lead to asset damage or a property. Our analysis does not include them or companies as an aspect of the financial architecture. Rather the DRR agenda represents an opportunity for them to improve their financial stability and resilience without increasing financial risk.
KEY FINDINGS: THE GLOBAL FINANCIAL SYSTEM AND DRR, PRESENT AND FUTURE

Few who follow finance can have missed the fact that Environmental, Social & Governance (ESG) and Sustainable Investing have become seemingly ubiquitous in developed markets since 2015. Climate change: how to lessen it and making the energy transition, is a preeminent theme judging by fund launches and corporate commitments. Superficially, this should auger well for greater sensitivity to and action on Disaster Risk Reduction, whose concerns are highly aligned with an ‘ESG’ mentality. However, our study found that DRR, the holistic discipline as envisaged in the Sendai Framework, suffers from low awareness and is likely perceived in private markets to be largely uninvestible and/or the job of others, namely governments, with the important exception of reducing emissions. Much of the detail of DRR is the proper domain of governments and civil society. It is not always clear how commercial investors and lenders can directly generate and capture profit from attempting to reduce the likelihood and impact of events with complex origins where the benefits are widely shared: a free rider problem.

Nevertheless, the highly complex, pluralistic and inherently non-directed nature of the global financial system results in it being an agent in exacerbating and mitigating natural disasters, pandemics, climate change and other threats of the age. It is also a channel at least as important as governments through which DRR-aligned capital and behaviours could flow. A major inducement would a fundamental and comprehensive renovation of rules and incentives in almost every corner of it toward treating DRR as a duty, with consequences for ignoring it. There has already been significant momentum towards the systemic reform of the financial system in recent years, as demonstrated by initiatives such as the Sharm El Sheikh Implementation Plan, the Glasgow Financial Alliance for Net Zero, the biodiversity accords at COP15 and The Bridgetown Initiative.

The financial sector needs to better account for and accurately price disaster risks, while also being more transparent on its exposure and management of disaster-related risks. To this end, DRR should be integrated into the mandates and decisions of central banks and other financial and regulatory authorities to incentivise investments in risk reduction and resilience. This could include requesting commercial banks to disclose risks and embed DRR assessments in credit decisions, lowering risk capital requirements for insurers investing in risk prevention and reduction, or reviewing reporting obligations of financial institutions to avoid threats to long term financial stability and financial market integrity. In fact, all stewards of the financial architecture must address market short-termism and failures that impact efficient pricing and proper consideration of disaster risks, using fiscal and market-based measures and other incentives.

Moreover, there is a recognition by Member States that toward 2030, to mobilise private investment there is a need to improve companies’ disclosure related to disaster risks and revise accounting practices. International collaboration can identify good practices and devise common approaches to amend financial regulations for resilience, by leveraging existing platforms. This entails updating their mandates and work programmes to explicitly consider a broader range of risks beyond climate and the environment. Our key recommendations fall into the following four areas, with more detail and examples provided in the concluding section of the Report:

1. Re-write the mandates and governance of public interest stewards in the global financial system to be more forward-looking and strategic regarding DRR
2. Ensure a greater share of all public sector financial flows are sustainable through creating apex-level scaling and clearing houses
3. Push private sector financial flows towards more sustainable, risk-adjusted outcomes by correcting pricing and other incentives
4. To this end, require the improvement and harmonisation of financial information to take proper account of medium to long-term risks from disasters, especially but not limited to climate change.
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SECTION 2: PRIMER ON THE GLOBAL FINANCIAL SYSTEM AND NATURE OF INTERACTION WITH DRR

Multi-lateral Development Banks and Development Finance Initiatives
MDBs and DFIs, ‘development banks’ for short, have long been the largest and, in cases, deeply controversial institutions in shaping the agenda, character and terms of disaster, aid and development related finance. The re-orientation of the World Bank and the International Monetary Fund toward a more progressive, pro-poor and sustainability agenda was well underway before Sendai (discussed in Section 3). Since 2015, the World Bank in particular has shifted its espoused position toward ex ante disaster prevention, mitigation, capacity building and reconstruction planning. It specifically references Sendai. Regional and national development banks, such as the Asian Development Bank, African Development Bank, Inter-American Development Bank; European Bank for Reconstruction and Development and European Investment Bank have developed programs of varying maturity in the field of DRR. The MDBs were pioneers in bringing green bonds to the market. They helped give climate finance mainstream market participation. In Section 3 in our stock-take we examine how the development banks have evolved post-Sendai.

The Risk Transfer Market
The Risk Transfer Market is the corner of the global financial system where insurance against hazards is sent along a chain of financial players: from insurers to re-insurers to retrocession to catastrophe bonds and investors in Insurance-Linked Securities (ILS). It has evolved to satisfy several goals. The ‘transfer’ aspect allows large, expensive risks to be spliced, diced and distributed along a chain. Thus dissipated, the risk eventuating should still not financially wipe out any one actor. By providing opportunities for profit and hedging, notably through catastrophe bonds and ILS by a wide spread of actors, the underlying events to be insured gain access to a larger and more liquid pool of finance. In a liquid market well served by risk intelligence, the optimal model is that the previously uninsurable becomes insurable. The ‘protection gap’ as it is known, for assets, economic activity and livelihoods, is narrowed. The re-insurance market exists to cater to and adapt to dynamic, idiosyncratic risks but there are limits to its capacity, in terms of the quantum of losses and damage and the ability to forecast exactly how they land. Climate change, for example, is already resulting in some situations and populations becoming uninsurable, prompting providers to leave those markets. Section 3 will discuss how purposeful approaches to narrowing the protection gap and other DRR imperatives have become more common and collaborative in the global financial system since Sendai.

Financial Regulators
One of the defining narratives of the last decade has been the speed and means by which orthodox models of financial regulation and accounting should be reformed and buttressed to correctly price environmental and social externalities. This reform is in the name of more efficient, more sustainable markets, and lately to police egregious and misleading behaviours when it comes to sustainability. Indeed, this is a charter too modest even for some financial actors. They argue that incremental accommodations to flawed models amplifying our tendency to discount future goods merely perpetuate cover for the inability of markets to handle risks that are endemic and existential.

Tending to sickly balance sheets and attempting to reignite growth in the aftermath of the financial Crisis of 2008 has dominated the agenda for financial regulators. There has been one exception: climate change. Section 3 explains how central banks have begun, with
characteristic cautiousness, to bring climate change into the ambit of systemic risks supervised organisations must integrate. Policy emerging from Brussels in but latterly in the United States and China typically requires supervised entities and large companies to perform; scenario analysis including the more severe warming outcomes; self-diagnose exposure to climate risks; discuss management strategies; and disclose targets and metrics. The EU as part of a multi-pronged strategy to deliver its Green Deal will require from 2023 investment firms marketing funds there to disclose the proportion of their investments aligned to its dictionary look-up of what is green, The EU Taxonomy of Sustainable Activities. It requires also that in-scope funds disclose how they have taken account of the Do No Significant Harm factor. The EU’s SFDR regulation requires funds to state their Principal Adverse (social and environmental) Impacts. These checks were not predicated on disaster risk reduction per se, but they do have some beneficial effects in terms of trying to avoid unintended consequences in the pursuit of sustainability goals. Such risks include creating locked in effects from backing the wrong transitional energy sources, failing to achieve a Just Transition, and other spill overs like food instability or flooding risk from unsustainable biofuels development.

Commercial Banks
Commercial banks (‘banks’) collectively hold and intermediate a vast tapestry of debt, assets, derivatives and other instruments. An analysis of the context around any given disaster will show multiple banks underwriting, intermediating and leveraging a chain of transactions. Some of these may have presented opportunities for risk mitigation or prevention or building back better. Banks’ systemic influence is so great that policy makers consider them first among equals in the private sector in terms of risk and opportunity in addressing the most pervasive risks like climate change, cyber and habitat loss. Banks come into contact with disaster risk concretely through, for example, syndicating loans for infrastructure projects, offering trade finance and as creditors for municipal bonds and holders of mortgage debt among many other touchpoints. Often taking first loss as senior creditors and able to impose the terms of re-structuring (in every sense) banks risk holding stranded assets arising not only from acute disasters but wicked, long-lived threats like climate change. Most international banks have decades of experience in risk filtering and imposing covenants and monitoring on environmental and social grounds, such as the International Finance Corporation standards-based Equator Principles. They have made commitments to becoming Net Zero emissions and signed the voluntary UN Principles for Sustainable Banking. Since 2015, most systemically important banks have been required or volunteered to go under stress testing against climate risks as well as more conventional ones that concern prudential regulators.

Institutional Investors
The largest investor in the world, Blackrock, holds USD 10 trillion (check) in assets under management. Institutional investors (investors) buy and sell instruments like shares, bonds, real estate, infrastructure, and derivatives on behalf of a range of clients including pension funds, other professional investors, the public sector and individuals. The linkages and boundaries between banks, the risk transfer market and investors are highly porous. Professional investors are remote by design, typically at the greatest remove from the locus of physical disasters, though are exposed to market contagions as much as banks. Comparatively speaking, the mainstream investor enjoys high levels of liquidity and risk diversification. They are able to buy a basket of slivers of assets and companies that can be traded back and forth easily under benign conditions. A corollary is that they enjoy less influence from this diversified, small-stake and highly intermediated approach. This is important for understanding how investors are touched by - and the limits to their influence over - Disaster Risk Reduction. Like most actors in the global financial system, their focus since Sendai, also the year of the Paris Agreement on Climate Change, has been overwhelmingly on climate change mitigation in the abstract. The most common approaches centre on portfolio risk management and hygiene (in the sense of not holding the dirtiest assets
or a carbon footprint lower than is typical). The vernacular and modalities of the Sendai Framework are largely unknown to them.

However, there are some grounds for guarded optimism. The still ill-defined and unregulated world of Responsible Investment and ESG (Environmental, Social & Governance) has undergone breakneck growth since 2016. The grain of the conversation has, since the formation of the United Nations Principles for Responsible Investment in 2007, gone from dismissing why responsible investment cannot be done to outcompeting the next investor in how well each claims to do it.

Section 3 describes how the rise of Impact Investing has a potential overlap with DRR in the form of investment strategies that increasingly target planned, measurable, on-the-ground improvements and safeguards to the lives of the vulnerable.

Intermediaries
Though there are myriad kinds of intermediaries in the global financial system, we believe there are three groups that meet a plausibility threshold test for their ability to influence thinking and decisions over how capital is allocated with consideration of DRR.

Investment Banks act as matchmakers and fund raisers for mergers and acquisitions (as well as trading securities for their clients). Most of the world’s infrastructure has involved the catalysing and fund-raising power of investment banks. As noted, these banks are under increasing pressure to show how their activities support and do not undermine sustainability policy goals. They are also indispensable to the process by which Green Bonds, Sustainability-Linked-Loans and other green finance are issued. The green bond market that has grown from almost nothing to USD 1.5 trillion in a decade. Green finance is currently focused primarily on mitigation. It is recognised that it will need to expand and become balanced in the direction resilience within natural and human systems. This is because of the expected increases in the frequency, severity and interconnectivity of environmental hazards. Such use-of-proceeds finance may also be used to reduce risk for disasters other than nominally environmental. These can include geological, technological and biological, to name one such example, the reversing the spread of anti-microbial resistance. Investment Banks, as well as investors, regular banks and insurance companies, are increasingly judged, at least by the richest countries, on what opportunities for short-term profit they are willing to forego by withdrawing from financing activities slated for an accelerated retirement, such as coal-fired power. This raises counterarguments about whether poor people can afford the consciences of the rich, and the moral obligation for a Just Transition.

Investment and Insurance Consultants are closely tied to the Risk Transfer Market as a provider of intelligence and brokerage. They also act as advisors and gatekeepers to asset owners in deciding and monitoring which investment firms should manage their money. Most consultants have built practices in climate advisory serving both client types. Investment Consultants are worthy of mention because of the sway they hold over capital allocation by their clients and how those clients perceive and parcel out risk. One criticism from within the financial services world is that these firms’ expertise on, for example, climate data and investment strategy has so far remained subservient to short-term commercial imperatives. We can include too in consultants the major accounting and consulting firms that provide audit, consulting and other services to the overwhelming majority of large, listed companies in the world’s biggest stock exchanges. They have been on a hiring spree of thousands of ESG experts in response to actual and expected demand, as sustainability has risen to the top of the corporate and public agendas.

Credit Rating Agencies and other sell-side research. Even casual watchers of the news with no knowledge of the financial system cannot fail to have noticed that a lot of attention is paid
to what rating agencies like Standard & Poor’s, Moody’s and Fitch say about a country or a company’s debt. These ratings are deferred to as a bell-weather of the rated entity’s financial health. Working from the thesis that disasters should appear with increasing frequency and severity on corporate and national balance sheets we should expect this to find its way into credit ratings. This is already happening: According to Moody’s, 60 per cent of its sovereign credit ratings of developing countries are currently negatively affected by ESG considerations¹. Indeed, it is telling that all three firms have made large acquisitions in recent years of standalone ESG research specialists.

ESG vendors and their ESG ratings are different to credit rating agencies’ ratings. The latter can affect the cost of borrowing for countries and companies, as we have seen. ESG data and ratings vendors appraise and rate the ESG risks, opportunities and performance of corporates and sovereigns. They are highly influential in their own way. Their ratings can be used as a short-cut to create an off-the-shelf ‘ESG’ or ‘Sustainable’ investment product. A criticism of ESG ratings’ ubiquity in the industry is that any given provider’s ratings correlate very poorly to their peers. In common parlance, how can it be so common that one provider gives a certain company a A+ rating, while provider B gives that same company a D rating? One reason is said to be because of the subjectivity of ratings which are not based on a common accounting language. To make matters worse, many investors tend to over-rely on ESG ratings as a substitute for independent research. Clearly, if ESG data and ratings are of dubious provenance and reliability, this does not help the DRR agenda in as far as finance might rely on them in ways that could be influential. By the same token, ESG data and ratings could support the DRR agenda by highlighting to clients which investments are especially exposed to disaster risk and how well they are managing those risks or innovating to create solutions.

Independent research is supposed to be the calling card also of the wider ‘sell-side research’ world, where teams of analysts produce research and buy/sell/hold recommendations on financial securities like shares and bonds. The sell-side has been incorporating ESG factors into research to highly varying degrees for at least fifteen years. All these intermediaries: consultants, raters and research firms tell investors what they should think and what to value. As with regulation, their ability and propensity to incorporate DRR-type factors with due urgency and accuracy into their verdicts plays a supporting role in how well the global financial system responds to the Sendai agenda.

¹ Reuters, Climate and ESG risks hurting 60% of developing countries’ ratings-Moody’s
SECTION 3: STOCK-TAKE: THE GLOBAL FINANCIAL SYSTEM SINCESENDAI

Prudential and Development Banks

IMF
In April 2022 the IMF established the Resilience and Sustainability Trust/Facility\(^2\). The Facility “complements the existing IMF lending toolkit by helping low-income and vulnerable middle-income countries address longer-term challenges, including those related to climate change and pandemic preparedness given their global public goods nature. The RSF will support measures aimed at adaptation, mitigation, and transition.”

Conditionality attaches to drawdown from the Facility. The IMF stipulates that there must be a package of high-quality reforms to help clients reduce critical risks relating to the long-term structural challenge of climate change or pandemic preparedness. Interest rates, maturity and concessional aspects are discussed in the link. The overall cumulative access cap for eligible members is set at 150% of quota or Special Drawing Rights of 1 billion, whichever is the smaller, with drawdown normally commencing at the 75% of quota rate. Obviously, the facility is new, so it will take a number of years before evaluation is possible, however it is significant that the fund’s overall theme is resilience. It is not limited, as with nearly all other similar facilities, to climate change but also includes pandemics. It also published at the end of 2021 a climate module for its Public Investment Management Assessment screening tool (‘C-PIMA\(^3\)'). The module in in pilot phase and it is not clear if it will become mandatory.

The World Bank
Founded in 2006 The World Bank Global Facility for Disaster Risk Reduction precedes Sendai. It is nevertheless explicitly aligned to the Sendai Framework’s four Priorities for Action.

\(^2\) International Monetary Fund, IMF Resilience and Sustainability Trust
\(^3\) International Monetary Fund, Strengthening infrastructure governance for climate-responsive public investment
THE GF DRR provides funding, capacity building, technology and expertise transfer. It claims its real clout comes from supporting client countries in being able to leverage much larger amounts of funding from the World Bank (and its partners) by ensuring they meet the professional thresholds for directed DRR funding. It states\(^4\) in its annual report that for every $1 million that it invests leverages more than $100 million in investments in resilience or in more resilient development. During FY 2021 the facility committed $46 million in funding to 138 new grants. The active portfolio included 235 active grants, for a total commitment amount of $135 million, with flooding, earthquakes and landslides receiving the greatest share. The annual report lists and explains all investments and interventions under the Facility, country by country. However, its data shows that in absolute terms, contributions to the GF DRR have fallen from a high of $98.7 million in 2015 to $59.3 million in 2021.

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\(^4\) World Bank GFDRR Annual Report 2020-Bringing Resilience to Scale
Figure 3: The World Bank’s breakdown of funding from its Facility for DRR, to 2021

The internal audit team of the World Bank conducted an evaluation of The World Bank as a whole (not just the GF DRR Facility) over fiscal years 2010 to 2020. The evaluation focused only on one type of DRR: efforts to reduce disaster risks from natural hazards.
The study contained the following bracing paragraph:

"Investing in DRR has strong economic and social benefits, yet underinvestment in DRR globally—particularly in disaster risk mitigation and preparedness—remains an issue. Resilient infrastructure investments can have a present value of $4 return on each dollar invested (Hallegatte, Rentschler, and Rozenberg 2019). When countries rebuild infrastructure after disasters to be more resilient, they can reduce the negative impact of future disasters on well-being by as much as 31 percent (Hallegatte, Rentschler, and Walsh 2018). Universal access to an early warning system (EWS) can reduce asset and well-being losses from disasters by an estimated $35 billion per year. An EWS can also contribute to a decrease in mortality (Hallegatte et al. 2017). Yet only 4.1 percent of total official development assistance for disasters was directed toward disaster prevention and preparedness between 2010 and 2019 (UNDRR 2021). This is due to insufficient resources for investment at the country level, limited knowledge of disaster risks and vulnerabilities, and existing government preferences for politically visible post-disaster initiatives rather than pre-DRR measures."

The evaluation praised the Bank for its mainstreaming of DRR into its practices and lending. The Bank tripled its support in the period and expanding country coverage, shifting its focus from post-disaster response toward risk reduction. By 2020 80% of projects engaged on an ex-ante basis. The number of ex-post responses that had had no DRR planning built in declined to zero percent. Nevertheless, the audit found blind spots. It made recommendations in certain major sectors and regions and with regard to rural resilience and disproportionately vulnerable populations. The GF DRR’s claim that its expertise transfer has a positive leveraging effect on raising finance was judged by the evaluation to be valid. In the GF DRR’s strategy covering 2021 to 2025, it states its aim to leverage at least an additional US$30 billion in resilience investments from the World Bank and from other development partners over the period. This compares to what is claims was US$28 billion leveraged since 2015. If so, that would represent a cut, especially in real terms, given the present rate of inflation.

**Regional Development Banks**

The European development banks, such as AFD, KfW, the European Bank for Reconstruction and Development and especially the European Investment Bank, as the EU’s main finance delivery vehicle for its Green Deal, are high-profile and big-ticket in the field of concessionary climate finance. Judging by their climate strategy and adaptation reports their remit does not obviously extend more broadly to multi-hazard prevention. Their focus is overwhelmingly on low and zero carbon development, though we note that the EIB is increasing its climate adaptation budget from 5% over the 2012-2019 period to 15% by 2025.

The African Development Bank is unsurprisingly much more exercised on the issue of adaptation, resilience and disaster response. Its climate adaptation report has many individual DRR-tagged funding projects. It has not published a top-down strategy on DRR, in the last three years. However, its Climate Action Plan Completion Report examining 2016-2020 saw its funding for climate adaptation (aligned with DRR) triple in the period. Consequently, the AfDB met its target of parity of adaptation funding with mitigation funding, with the latter seeing funding rise and fall back to only a modest increase on 2016 levels, impacted by COVID-19.

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5 The World Bank GF DRR: Scaling up and mainstreaming resilience in a world of compound risks
6 European Investment Bank, The EIB Climate Adaptation Plan
The Inter-American Development Bank had only published a technical paper on how to perform Cost-Benefit Analyses for screening prospective funding aimed at DRR.

A bright spot is the Asian Development Bank, whose website is extremely transparent in their strategy, funding goals, achievements, measured financially.

Figure 4: African Development Bank: proportion of mitigation and adaptation finance

<table>
<thead>
<tr>
<th>Type of project</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
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<tbody>
<tr>
<td>Mitigation</td>
<td>67</td>
<td>51</td>
<td>56</td>
<td>37</td>
</tr>
<tr>
<td>Adaptation</td>
<td>33</td>
<td>49</td>
<td>44</td>
<td>63</td>
</tr>
</tbody>
</table>

Source: ADB

Figure 5: The Asian Development Banks approach to climate and disaster funding

The ADB’s 2021 Effectiveness review provides ‘impact’ KPIs in terms of emissions reduced, numbers of people benefitting from strengthened climate and disaster resilience and hectares with reduced flood risk. These are hard to contextualise. We note that, appropriately,
agriculture, natural resources, health and education are some of the sectors to receive more in adaptation funding than mitigation. The inverse applies to energy and transport. The bank aims to have at least 70% of its operations supporting climate action by the end of this decade. It spent SUSD 2 billion between 2017 and 2021 on 32 projects that ‘directly reduced’ disaster risks, improved institutional, community and financial preparedness. Going by its Effectiveness review, to meet its cumulative target of USD$100 billions of own climate and resilience funding by 2030 the ADB will have to double and sustain its 2021 level of funding henceforth (not taking into account inflation).

Climate, overall, at the MDBs
The Joint Report on Multilateral Development Banks: Climate Finance 2021 was narrower in scope than DRR. It reported that the total figure for all bank members in 2021 alone was USD$43.6 billion in low and middle-income countries. 66% went to mitigation and 34% to adaptation. Of that USD$43.6 billion, 30% of it was mobilised from private sources. High income countries actually received more climate finance, at USD$56 billion, but the split between mitigation and adaptation was telling. Adaptation in high income countries only received 1% of the total. There is a logic to the different shares between mitigation and adaptation in rich versus middle and-low-income countries. Middle and-low-income countries are more exposed to the sharp end of climate-induced or aggravated disasters.

The website database Aid Atlas does not record aid and loans granted for DRR as a self-reported category from development banks before the year of the Sendai Framework. From 2015 to 2020, its database calculates that all funders worldwide committed USD$2.01 trillion in development finance of all kinds to recipient countries globally. Of this amount, 43.1% ($866bn) was provided as ODA grants, while 20% ($401bn) was provided in the form of ODA loans, with most of the balance being made up of ‘non-trade flows’. The disbursement ratio for all development finance worldwide over this period was 82.8%. Of overall flows to all internationally agreed targets and objectives, not just DRR as a distinct category, the shares of the pie were as follows:

Figure 6: DRR just USD$7 billion since 2015-but understates baked in contributions elsewhere

7 The Aid Atlas, query tracking aid and loans by all DFIs to all countries, 2015-2020
At first glance, it is somewhat disheartening for advocates of DRR to see if feature close to the bottom of funding priorities. However, given the fact that DRR has apparently in most organisations become elided and subsumed into ‘climate’ the true number is likely significantly higher, if difficult to disinter, and reported differently across organisations. Even going by the nomenclature, ‘pure’ DRR has been floating up since 2016, at least, though woefully insufficient.

Conclusions from stock take: The MDBs/DFIs since Sendai

In 2013 and 2017, the Overseas Development Institute published two reports on DRR financing. The 2013 report trawled through the data from the previous 20 years. Its conclusions were withering. It found that the distribution of (inadequate) DRR financing (40 cents for every USD$100 of total aid) was also deeply inequitable and distorted. Middle-income countries that already had some DRR capacity soaking up most of it while the smallest, poorest and most vulnerable countries barely received any. The 2017 report was more hopeful. Focused on national governments rather than financing, it noted that low-cost, non-disruptive preparedness interventions in training, education and governance had made great strides. However, strategic planning and drawdown of targeted funding was still lacking. Effectively, this was what we could call the baseline at the time of the Sendai Framework.

Since then, attaching confidence to true underlying investment flows to DRR, let alone its effectiveness, is complex and beyond the scope of this report. The MDBs in any case ‘mark their own homework’. However, some encouraging qualitative trends are discernable:

- There is a welcome focus among the IMF and World Bank on the Sendai priorities 1) understanding of disaster risk 2) strengthening DRR governance and 4) disaster preparedness. The internal effectiveness review of the World Bank’s response to hazards is an example. Lamentably, it is only this year that the IMF finally set up a facility for funding based on screening for DRR including climate and pandemics
- The skilling up and making available of better data in national governance structures regarding DRR, going by the estimation of the more engaged MDBs at any rate, is making the theme more investible within the wider DFI ecosystem in the sense of achieving explicit focus on DRR investment and funding requests on target and compliant with funders’ gating criteria on DRR. This is thanks to the leveraging effect of these non-aid interventions. This professionalisation of DRR planning and funding should help attract private and blended finance in the future, for which risk appetite and returns profile are more demanding and it takes longer for investors to perform due diligence on more specialist and contingent forms of financing
- While organisations are duly deferential to the Sendai Framework, we suspect the true quantum of DRR investment (in its widest sense of transfer of resources) is larger than the headline number reported in that category by MDBs, as reported in Aid Atlas. ‘DRR’ is likely increasingly subsumed into and dwarfed by the aligned category of ‘climate

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8 ODI, Financing Disaster Risk Reduction: a 20-year story of international aid
9 ODI, Delivering Disaster Risk Reduction by 2030
change’. However, it will come as little surprise that the level and trend of DRR investment is by no one’s estimation close to sufficient to meet the scale of the challenge.

Essentially all MDB climate financing in 2021 to low and middle-income countries was spend on adaptation. While climate finance is hardly a perfect proxy for DRR, it indicates a mindset focused on limiting the damage from those countries worst affected in the near-term.

This said, it needs to be acknowledged that we simply do not know how much is invested or spent on DRR. There are obvious reasons for this in terms of inadequate record-keeping and inconsistent recognition of what counts as DRR, as well as such investment addressing goals beyond DRR. It likely also has to do with the dominance of the climate narrative, as discussed above, meaning that spending is somewhat better than the pure reporting suggests. Ultimately, this is a somewhat academic point. By any measure, and according to all stakeholders, DRR investment is inadequate.

Stock-take: The Risk Transfer Market since Sendai

Since 2015, there have been more efforts to create pooled cover for the most vulnerable countries and populations, such as the examples listed below. Still, the protection gap remains vast. The UN DRR’s Global Assessment Report\(^\text{10}\) for 2022 cited SwissRe’s Sigma Research, that “less than half of disaster-related losses at a global level in 2020 were insured (approximately $89 billions of an estimated $202 billion). This was above the previous 10-year annual average of $71 billions of insured loss (Swiss Re Institute, 2021). Between 1980 and 2018, on average, about 40% of all disaster-related losses were insured (Munich Re, n.d.). However, insurance is overwhelmingly concentrated in richer countries.” This section will attempt to give a qualitative sense of the development of this theme since the publication of the Sendai Framework by means of examples.

Perhaps the model for facilities created for the most vulnerable regions for climate-related disaster at least is the Caribbean Catastrophe Risk Insurance Facility (CCRIF). In recent years there has been a marked uptick in the engagement of The Risk Transfer Market. This is not only concerning extreme weather events per se (that is, after all, one of their bread-and-butter risks) but with innovation in insurance and debt structures combined with parametrised cover. Such schemes aim include more accurate, faster pay-outs for those with cover for climate-related events. This has been enabled through advances in remote sensing and big data. These too have enabled the development of data intelligence products that allow other financial actors, and countries, to model the effects of a given event. If the will and means exists to do it, this can be combined with other forms of DRR knowledge and expertise to anticipate and implement preventative and mitigating measures.

Country, regional and strategic location initiatives
The World Bank, EBRD and government of Jamaica collaborated to develop the first catastrophe bond issued by a small island state. Should Jamaica experience a tropical cyclone that meets thresholds, it will receive relief of up to USD $185 million. Innovative aspects of the cat bond include the ability to assess the impact of the event on the entire island, expedited pay-out reduced from months to weeks. The investment of the collateral held by the EBRD is to be invested into local Impact Investment projects.

\(^{10}\) UN DRR, Global Assessment Report on DRR
The Nature Conservancy, regional governments and Swiss Re collaborated to create an insurance project designed around protecting the ecosystem services provided by the Mexican coral reef. Its demise, through pollution and extreme weather as well as being a tragedy, would also have knock-on effects like beach erosion threatening tourism in the Yucatan Peninsula. The decisive intervention after a threatening event is straightforward but needed to be planned and funded. The pay-out would be disbursed quickly to mobilise teams of trained community members to perform clean-up and other restorative actions. The Swiss Re Foundation additionally funded reef rangers' training.

**Financial Innovation aiming to incentivise preventative behaviours**

In 2021, Munich Re concluded with Belize the Blue Bond debt holiday cover. If extreme weather event parameters are breached Belize can take a holiday on its sovereign debt interest payments of six months. Though the deal was small, it is interesting from the perspective of providing financial breathing room for a small country in a disaster situation. The finance minister of Barbados has called for similar measures to be applied by default to all loans issued by MDBs. The deal was arranged with broker Willis Towers Watson and the Nature Conservancy (the latter also involved in the Swiss Re coral reef project).

In the same year as Sendai Framework was published, a fintech called RE:bound received backing from a number of financial services companies, foundations and the weather data analytics company RMS. RE: bound created a hybrid finance program. It linked traditional project finance for infrastructure with catastrophe bonds. The intention was to incentivise prudent behaviors in construction. The idea of such a ‘Resilience Bond’ is that if the linked infrastructure project that can demonstrate that it has incorporated design and management aspects that reduce the risk of a catastrophe occurring, the project may receive a partial rebate on the interest it pays on the resilience bond that helps fund the project. This is the same principle a customer receiving a discount on the car insurance after agreeing to permit installation of telemetrics in their car to monitor the safety of the customer’s driving. The RE:bound resilience bond was used across a number of large, developed country infrastructure projects.

**Pandemics responses**

It is widely observed that the long-term effects of COVID-19 will widen the coverage gap in addition to worsening global health outcomes. Several insurers are attempting to apply some of the lessons from the crisis.

Several insurers are supporting the vaccine alliance GAVI’s COVAX procurement facility by providing insurance cover for 21 self-paying countries participating in the programme. Middle-income countries could benefit from the COVAX programme but GAVI’s negotiating power to buy in bulk would have been weakened for these countries by the risk of non-payment at the point of delivery by the underlying countries. This is where the re-insurers could step in. Such models could also be deployed in future pandemics.

Munich Re in response to COVID-19 is attempting to create ‘Epidemic Risk Solutions’. This is a PPP that seeks to create a prudent and resilient financial eco-system resistant to future disease outbreaks. The Epidemic Risks Market platform is in the process of being set up. Combining different formats of risk transfer, the market platform aims to ensure an effective allocation of exposure via the capital markets in and between periods of epidemic events. Munich Re intends to provide ‘innovative insurance solutions’ and mobilize insurance capital from private and public investors. The end goal is an *ex-ante* financing mechanism to reduce the cost of future disease outbreaks. In Kenya, Swiss Re says it is working with a consortium

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11 Refocus Partners, [Resilience Projects](#)
of local insurance providers to provide medical reimbursement cover to frontline health workers who have been disproportionately affected by the pandemic.

Industry and PPP fora addressing systemic problems in coverage

Insurance Development Forum
The Insurance Development Forum, launched at COP21 in 2015 is a public-private partnership led by the insurance industry and is supported by international organisations. In 2019, the IDF’s industry members pledged USD$5 billion of risk capacity for climate risk insurance in developing countries, as part of the IDF’s mission to increase and expand coverage and DRR expertise and enhance resilience.

V20-led Sustainable Insurance Facility
Launched in 2019 through the UNEP Principles for Sustainable Insurance, the V20-led Sustainable Insurance Facility\(^\text{12}\) came out of the IDF commitment. It is focused on the 20 countries most vulnerable to climate change risk, where there is at least a 90% coverage gap. Backed by various DFIs, it is tackling the problem of micro-businesses in these countries that, in cases, make up to 80% of GDP and their lack of cover for climate-related events. Technical understanding, data, regulation and trust in the markets for these risks is described as low-to-non-existent. The V20 is working to build country-level knowledge, entrepreneurship, distribution, and product innovation that could increase take-up and trust. For example, parametrised insurance pays out a fixed amount once certain pre-agreed weather or crop datapoints are crossed—but compensation does not relate to actual losses and may not, in any case, compensate those worst affected. Such parametrised cover is most commonly derivatives cover aimed at other financial actors and governments. Local regulations would normally disallow such complex products from being sold to retail customers. Hybrid forms, however, that contain an element of indemnity through proof of loss could in theory address the trust deficit, the V20 SIF says.

\(^\text{12}\) The V20-led Sustainable Insurance Facility
UN DRR & ICMIF
This coverage gap was a topic also taken up by a report by the UN DRR and the International Co-operative and Mutual Insurance Federation in a 2020 report. A bottom-up approach is advocated to getting small, local and co-operative and mutual insurers to provide cover apt for their customers, including through insurance pools, which is the essence of co-ops and mutual insurance itself. The V20 and the UNDRR/ICMIF initiatives seek to extend the narrative beyond the protection gap to increasing disaster resilience. However, it is telling that nearly all the examples that the UN DRR/ICMIF report could muster of such climate-smart insurance that included ex-ante as well as ex-post innovations were drawn from rich countries.
In October of 2022, ICMIF and UN DRR announced\(^{13}\) their intention to create a benchmark to rate its members against an established resiliency framework.

**InsurResilience Global Partnership**
Also a partner in the V20, the IGP aims to “enable more timely and reliable post-disaster response and to better prepare for climate and disaster risk through the use of climate and disaster risk finance and insurance solutions, reducing humanitarian impacts, helping poor and vulnerable people recover more quickly, increasing local adaptive capacity and strengthening local resilience.” It believes the current Climate and Disaster Risk Finance architecture for risk transfer is not fit for purpose. It is calling for a global financial vehicle to concentrate and systemise efforts to close the protection gap and make use of the full spectrum of risk transfer solutions.

**African Risk Capacity**
Also in this network is The African Risk Capacity (ARC) finance initiative, supported by the African Union which created the ARC Agency. The Agency’s goals are to assist member countries go through risk modelling as a way of designing early warning and contingency planning for natural disasters and epidemics. The Agency also undertakes risk pooling and risk transfer services for populations that would otherwise struggle to obtain cover.

**Technology**
In the state of West Bengal, India, as with most agricultural areas around the world, what parameter-based crop insurance existed relied on manual data collection to calculate likely crop health. Gaps and variance in the quality of data have now been replaced by a remote sensing project that is the collaboration of India’s National Remote Sensing Centre and the Agriculture Insurance Company of India. Remote sensing allows multiple parameters to be monitored in real time. The Bangla Shasla Bima scheme is fully subsidised, reaching 85% of farmers covering a range of crops. Swiss Re acted as advisor and re-insurer.

An example cited in the UN DRR/ICMIF report is from insurer Achmea, the Dutch insurer. Its digital risk tool BlueLabel takes data and modelling fields from a range of sources, including satellite data and Internet-of-Things sensors. These produce granular, asset-level risk labels for exposure to flooding, heat stress and drought risk-to the level of buildings, streets and infrastructure. The system emphasises easy understandability to a wide range of users via a traffic light system. It has the potential to be rolled out to diverse users and designed with preventative interventions in mind. However, the quality of underlying data in different locations will be key determinant of how reliable its labels will be.

**Conclusions from stock take: Risk Transfer Market since Sendai**
Vehicles for risk pooling for disaster-prone areas preceded Sendai. But even our incomplete survey shows that since 2015 there has been much stronger interest in forming multi-partite arrangements with underwriting innovations do not simply pay out a fixed sum after the event. They also bring to DRR risk transfer schemes featuring; better modelling; multi-stakeholder co-operation; and mitigation and preparedness measures before and after the event.

This fresh and more enlightened approach to DRR-focused risk transfer is very welcome. But there are caveats and uncertainties:

\(^{13}\) ICMIF, [ICMIF launches new Resiliency Framework](https://www.icmif.org/news-events/news/2022/10/24/icmif-launches-new-resiliency-framework)
Many of these examples are highlighted as examples by their sponsors of Corporate Responsibility, but there is no evidence to believe that the approaches are mainstreamed in their own business or in the market.

Certain sponsor names come up, again and again and others conspicuously do not. Some of the biggest re-insurers in the world in the United States and Asia had no relevant disclosures of such schemes compared to well-known European re-insurers.

It is an inescapable fact that risk transfer products are complex. Proof-of-concept and platinum-plated sustainable insurance projects are even more so, are costly and slower to arrange, inhibiting take-up. They are also usually small ticket. Innovation of this kind is only impactful at scale. They would require pooling covering much larger populations (at a country or regional scale), hopefully also reducing transaction costs per capita. This would require a level of top-down and horizontal co-operation including the MDBs/DFIs at a greater scale.

Pooled cover for disaster is not always an unalloyed good. An Economist article from 2007 reported how the politicking of unrealistically priced and inadequate cover for at-risk zones in Florida onto the public balance sheet in a bid for electoral support led to moral hazard and perverse outcomes: people buying and building where they should not.

Stock-take: Financial Regulation since Sendai

How would the insular world of financial regulation recognise its links to the Sendai agenda? Financial regulation and only in some jurisdictions is beginning to come to terms with:

- Exogenous systemic threats like climate change, habitat loss and pandemics being considered destabilising to the agenda of economic growth and relative stability
- The conduct of financial actors exacerbating or mitigating the systemic threat, including undermining the trust of the regulatory system itself

In 2017 the Financial Stability Board, a network (without regulatory powers) of central banks under the leadership of then Governor for the Bank of England Mark Carney issued the recommendations of its Taskforce for Climate-Related Financial Disclosures. The TCFD framework was aimed primarily at large companies. Wide take-up would bring coherence to how they disclose the risks they face from climate change (notably financial risks), how they modelled the expected impacts, their governance and risk management strategy and the metrics and targets they monitored in pursuit of their strategy. TCFD is regarded as the moment climate change received official recognition by the macro-economic class as a systemic economic threat of the first order. This is incredibly obvious to most people.
The TCFD’s validation of climate change as a systemic threat to economic stability and growth and creating corporate winners and losers has been hugely influential. Central banks have begun, with characteristic cautiousness, to bring climate change into the ambit of systemic risks supervised organisations must integrate. An increasing tally of countries have or will make TCFD-like disclosures mandatory, including the United States, EU and U.K. The TCFD has been adopted by big-tent quasi-mandatory initiatives like the United Nations Principles for Responsible Investment, which covers a large majority of assets under management, globally. It is important to understand that the TCFD is not a standard to meet, but a guidance framework. However, it was intended as a prelude to mandatory disclosures that would over a period of years become a pass/fail exercise used to judge and compare the preparedness and level of action by companies, investors and other supervised entities. Predictably, the quality of responses to the TCFD has been extremely uneven.

Much of the focus of scenario analysis and modelling of economic impacts and stress testing of systemically important financial institutions has focused on transition risks and a time frame of between 10 and 30 years. But, as the modelling of the Network for Greening the Financial System (NGFS), a group of central banks and supervisions, found below, the most extreme physical impacts will be felt in the second half of the century. It is the actions taken in the early decades of this period that either bake in or steer more of less clear of those most negative impacts. Reflecting this tragedy of horizons, the European Banking Authority stated in October 2022 that the risk timeframe over which regulators assess investment firms should be revised up to ten years from just one to three years presently\(^1\). Prevailing, pervasive short-termism is without doubt the most potent, accurate and stubborn critique of capital markets generally, in terms of their complicity in-and incapability of properly tackling-climate change.

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\(^1\) European Banking Authority, *Report in Incorporating ESG Risk in the Supervision of Investment Firms*
One of the more vexed issues for macro-prudential regulation is whether central banks should require those banks disproportionately financing high-emissions sectors hold higher capital reserves, as a signal to markets that they are deemed riskier and under a tighter leash and be more flexible with banks stepping up to help fulfil green transition policy goals. The OECD floated the former idea as far back as 2015 in its report\(^\text{15}\) on Disaster Risk Financing. The European Central Bank, in November 2022 was the first such entity to announce\(^\text{16}\) it had required a small number of banks to maintain higher capital to compensate for inadequate climate and environmental risk management.

**Beyond Climate Change**

As remarked before, climate change has dominated the agenda, some might say to the detriment or other unrelated themes of DRR. The approach of the TCFD has been grafted too on the issue of biodiversity and ecosystem services, with the creation of the Taskforce for Nature-related Financial Disclosures.

More broadly, since around 2016 there has been increasing political will and agitation from the more progressive elements of financial markets to bring the explosive, ‘wild west’ growth of Environmental, Social and Governance, Sustainable and Impact Investing under some elementary level regulation. This is for reasons of policy: because ESG investing could support public policy objectives like financing the Green Transition and reasons of honesty: because greenwashing in the absence of defined meanings and rules is now rampant, prompting regulators to make examples of firms making spurious claims.

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\(^\text{15}\) OECD, *Disaster Risk Financing: a Survey of Global Practices*

\(^\text{16}\) Responsible Investor, *ECB raises bank capital requirements over climate risks*
The EU as part of a multi-pronged strategy to deliver its Green Deal on Sustainable Finance will require from 2023 firms selling funds there to disclose the proportion of their investments aligned to its dictionary look-up of what is green: The EU Taxonomy of Sustainable Activities.

It requires also that in scope funds disclose how they have taken account of the Do No Significant Harm factor, including not undermining the bloc's social objectives. The EU's Sustainable Finance Disclosure Regulation requires funds to state their Principal Adverse (social and environmental) Impacts. These speak to avoiding adding to disaster risk and unintended consequences in the pursuit of sustainability goals, by, for example, failing to achieve a Just Transition, creating self-defeating bottlenecks in raw materials for new technologies and other spill overs like food instability or flooding risk from unsustainable biofuels development. There are pockets of regulation developing outside the EU, and latterly the U.S. also, for example in stock exchange listing requirements in Hong Kong, Singapore and South Africa. China has developed, in co-operation with the EU, its own green bonds issuance principles.

Other financial regulation developments relevant to DRR

The International Sustainability Standards Board
A persistent critique of the sustainable finance industry is that unlike other parts of the finance world its absence of shared definitions, minimum standards and accounting language, creates useful ambiguity for those wishing to delay action, exaggerate their claims, thereby hindering measurable progress. The most influential issuer of standards in financial reporting is The International Financial Reporting Standard. IFRS standards are incorporated in some fashion by 170 independent jurisdictions. At COP26 in Glasgow, The Foundation for IFRS launched the International Sustainability Standards Board (ISSB)\(^\text{17}\). The ISSB standards will absorb the main, overlapping voluntary sustainability disclosure standards that have competed and proliferated over the last decade. In 2023 the ISSB it will issue the first of its standards, on climate change, with other themes to follow.

G20 Sustainable Finance Roadmaps
The Roadmaps issued by the G20 Sustainable Finance Working Group represent the beginnings of a plan to reorient finance towards its essential role in supporting the political ambition that is embodied in the Paris Agreements, United Nations Sustainable Development Goals, and the 2030 Agenda. The G20 Roadmap is intended to provide a greater focus on options to scale up finance to support a just and affordable climate transition. It aims to further integrate other aspects of sustainability, including nature and biodiversity, and social issues such as energy access and poverty reduction. The Roadmap’s five areas of focus are; aligning investments to sustainability goals; decision-useful information on risks, opportunities and impacts; assessment and management of climate and sustainability risks; the role of International Financial Institutions, public finance, and policy incentives; and cross-cutting issues. They complement the work of the FSB in its own Roadmap that focuses on disclosure, data, vulnerabilities, and supervisory approaches.

Financial Regulation
Macro-level regulation is at the furthest possible remove from the practical levers of DRR. The former concerns itself in all matters with optimised and accurate information disclosed on a level playing field, of which ESG, climate and so on is a subset, albeit a more high-profile one. Consider the ideal state envisaged by Financial Security Board\(^\text{18}\) for financial regulation in terms of making progress with the relatively widely accepted priority of climate change:

\(^{17}\) ISSB, Frequently Asked Questions
\(^{18}\) Financial Security Board, Supervisory and Regulatory Approaches to Climate Risks
1. In addition to micro prudential measures at the firm level, authorities’ approaches should account for the potential widespread impact of climate-related risks across the financial system.
2. Jurisdictions are encouraged to expand the use of climate scenario analysis and stress testing as a tool for macroprudential purposes. The design and scope of the analysis should ideally include the following features to inform a system-wide view: (i) both physical and transition risks; (ii) key financial sectors (e.g. banks, insurers, asset managers and pension funds); (iii) interdependencies between physical and transition risks, geographical and sectoral risks, as well as improved understanding of impacts on financial risks; and (iv) system-wide aspects of climate-related risks such as indirect exposures, risk transfers, spillovers and feedback loops.
3. When designing their climate scenario analysis and stress tests, authorities should adopt features that can best inform a system-wide view. A top-down approach, or a combination of top-down and bottom-up approach (hybrid approach) could be used to capture cross-sectoral, system-wide aspects of climate-related risks. In addition, a dynamic balance sheet assumption could help capture second-round effects and potential feedback loops, while recognising the inherent challenges on assumptions for financial institutions’ future actions over a longer time horizon.”

This kind of systems thinking and focusing on shared definitions and better-quality data is apt for supra-regulators. Is it helpful to DRR? The answer must be ‘yes’ but only insofar as good regulation and supervision cascades down rapidly to appropriately changed attitudes and behaviors.
Conclusions from stock take: Financial regulation since Sendai
Since 2015, we observe the following trends regarding financial regulation and DRR:

- Climate change dominates the focus, with other environmental issues considered second-order effects.
- A report from UN DRR\(^\text{19}\) from 2019 recognised this tendency. The authors, consultancy E3G recommended "Ensuring that the categorisation of climate change adaptation as an environmental objective in the context of green financial products and services does not distract from the wider need to make all financial investment resilient to disaster risk and physical climate risk [our emphasis]. This could be achieved by using a 'Think Resilience' test to make disaster risk reduction, climate change adaptation and resilience a baseline requirement for all European finance instruments." It was also making the point that in 2019, 'climate investments' still tended to be thought of as a discrete bucket. The spread of the regulatory purview since 2019 to consider 'climate, everywhere at all times, in all forms' suggests that at least the silo mentality is breaking down, albeit that other risks of a different nature but with severe impacts remain neglected.
- The boundary of regulation is demarcated solely at white-collar risk management at financial entity level and to some degree disaster avoidance at financial system level. In the finance world, remote as it is from the sharp end of DRR, this is not unexpected. Financial regulation has little useful to say on the DRR priorities of for example, expertise transfer, multi-level governance and social inclusion.
- Unsurprisingly, regulations and standards harmonisation have been given greater impetus from the Net Zero agenda. In the UK for example, companies of size were required by law to make TCFD disclosures as of 2021, with others to follow.
- Different jurisdictions are moving at very different speeds. The general trend, despite a political period of gains in populism and losses in democratic standards in many countries, has been a significant shift in The Overton Window of what is considered normal discourse on climate and natural hazard related risks. We found many central bankers advocating not just for carbon prices but carbon taxes (previously controversial) if carbon leakage risk could be minimised. Climate change: its physical, policy and technology dimensions are now viewed by the guardians of financial regulation not as ad hoc externalities to be mopped up or capable of being hedged away. They are accepted as genuine systemic risks requiring a first-principles, top-down approach. But this world moves with pride in caution. Regulators are preoccupied however with first better information, shared standards and some element of compulsion (but only with regard to disclosures, presently).
- Regulators in free markets, according to the system's logic, do not wish to be seen to direct market participants on what exactly they should invest in. A criticism of this approach to regulation is that the process is moving no faster than the political one, that is to say: timid, too captured by conventional thinking and interest groups to act with the necessary urgency and courage demanded by the scale of the challenge.

\(^\text{19}\) United Nations DRR. [Opportunities to Integrate Disaster Risk Reduction and Climate Resilience into Sustainable Finance](https://www.unisdr.org)
Stock-take: Commercial banks since Sendai

International banks have decades of experience in disaster risk filtering, though it does not go by that name. Most are signatories to the Equator Principles (EP), based on the International Finance Corporation’s Environmental and Social Performance Standards\(^\text{20}\). The EP have attracted criticism, especially in its first decade, for giving a pass to projects that were and remained controversial. Its more recent iteration requires a bank’s Environmental and Social Credit Risk team to perform due diligence against the IFC standards, especially in sensitive sectors, areas of human rights abuses, environmentally sensitive or disaster-prone zones. It is routine for large banks to impose covenants requiring precautions and mitigations to be performed by the applicant, and (somewhat less often) for these to be verified after the fact. Projects are sometimes refused financing all together where they fall irredeemably short of minimum standards.

Typically, large banks have made commitments to becoming Net Zero emissions and signed the voluntary UN Principles for Responsible Banking. Together, these are high-level commitments to improving the environmental and social impact of their portfolios and practices as well as cutting emissions in the round.

What is the evidence that banks are sensitive to disaster risk in their financing decisions, \textit{ex post} and \textit{ex ante}? There is positive news to report on this front, but only if a good result is confined to the banks’ own interests. Banks appear to recognise good risks in their lending terms and punish or avoid bad risks.

A 2022 study entitled “Does Disaster Risk Relate to Banks’ Loan Loss Provisions?”\(^\text{21}\), which specifically referenced the Sendai Framework, examined a book of nearly 500,000 corporate and municipal loans in counties prone to higher natural disaster risk. It found that banks’ exposure to these loans correlated very well with their expected loan loss provisions. Banks reported that they expected and baked in higher loan loss provisions consistent with how much they lent to disaster-prone counties. This is an \textit{ex-ante} measure rather than \textit{ex-post} measure. Crudely, the banks had priced the risk before the event.

Indeed, another study from 2020\(^\text{22}\) found that bank managers tended to overreact in their risk aversion in relation to disasters, \textit{ex-post}. The authors deduce that, after eliminating other explanations, loan approvers tended to be too influenced by ‘salience bias’ by extrapolating too widely and being too risk-averse in response to an acute event even when the evidence for spillover effects did not support that excess of caution.

Furthermore, a 2022 study found a ‘sweetheart’ effect when examining the matching up of debtors and creditors in syndicated loans such as Project Finance. Firms seeking a loan that had good ESG ratings solicited and found favour with banks with good ESG ratings themselves. ESG ratings touch on and to a large extent will tend to be used by financial institutions as a proxy for a company’s responsible management of DRR, among other things (whether that assumption is warranted in every case, is less clear). There is a flip side to this, which is that companies with poor ESG ratings will heed this signal and approach banks with poor ESG ratings in the rational calculation that the latter will care less, if at all.

This race to the top/race to the bottom bifurcation cuts to the heart of the divestment debate preoccupying primarily European and to a much lesser extent American banks and investors:

\(^{20}\) International Finance Corporations, \url{Performance Standards on Environmental and Social Risks and Impacts}

\(^{21}\) European Accounting Review, \url{Does Disaster Risk Relate to Banks’ Loan Loss Provisions?}

\(^{22}\) Huang et. al. \url{Do Banks Overreact to Disaster Risk?}
what is the good of divesting if someone less principled is going to buy the assets instead, cheaper, and with no strings attached? This gained a sovereign and geopolitical dimension when news reports showed that polluting infrastructure projects in Africa, especially unabated coal-fired power plants shunned by Western banks were being funded by Chinese loans with none of the attendant restrictions or emissions conditionalities in China itself\textsuperscript{23}. China has since said that this practice will end\textsuperscript{24}. Nevertheless, the studies we found together suggest that good corporate or local government ESG practices, which is tangentially linked to good DRR practices (our assumption, in the absence of direct evidence) lowers the cost of capital for such debtors and reduces loan loss expectations for banks. A 2018 study\textsuperscript{25} examining the effects of China’s Green Loan policy among twenty-four Chinese banks found that incorporation of the Policy had a positive effect on reducing the banks’ Non-Performing Loans books.

We did not find any examples of industry-wide collaborations on DRR per se. As will now be familiar to readers, where the topic is raised, it is in the form of the less well discussed half of the climate change agenda: adaptation and resilience. But even then, the UNEP-hosted Net Zero Banking Alliance,\textsuperscript{26} for example, which accounts for around 40% of global banking assets, is focused entirely on mitigation i.e., achievement of Net Zero emissions by 2050. As previously noted, reaching Net Zero is axiomatic to DRR in the long-term but the goal itself pays lip service to adaptation and resilience.

One initiative that does touch more clearly on the issue is the Natural Capital Finance Alliance, another UNEP-hosted initiative founded in 2012. An example of an exercise\textsuperscript{27} involving nine banks across several regions was to model the effects of a range of drought scenarios in Brazil and the United States on loan impairment. The results were striking. Areas of Brazil strongly contributing to its economy would suffer very badly (and consequently their bankers). In the United States the implied bailouts from state and federal government agencies meant drought would have a far more muted, non-material effect on loan impairment.

What these studies do not examine is the wider human impact of such disasters. Banks of course do respond charitably, in form of donations and other kinds of support to natural disasters in particularly in the emergency and aftermath phase, and through other ongoing aspects of their Corporate Responsibility programmes, such as in conservation and education efforts in vulnerable communities. But DRR as a discipline - a planned approach - is not salient either in their green and social financial products, with the overwhelming focus being on the financing of green or greening assets though use-of-proceeds bonds and emissions reductions via Sustainability-Linked Loans.

\textsuperscript{23} CNN, Activists are fighting for a renewable future in Sub-Saharan Africa, Chinese coal projects threaten to dirty those plans.
\textsuperscript{24} China Dialogue, China’s no new coal power overseas pledge, one year on
\textsuperscript{25} Cui et. al. The Impact of Green Lending on Credit Risk in China
\textsuperscript{26} Net Zero Banking Alliance, The Commitment
\textsuperscript{27} Natural Capital Finance Alliance, Drought Stress-testing Tool-case study
A faithful conformance with IFC performance standards (such as article 7: Identification of risks and impact and article 20: Emergency Preparedness and Response) should result in DRR measures appearing in covenants and monitoring regimes for project finance loans from commercial banks. We were not able to confirm the prevalence of this for lack of data at the loan level.
Conclusions from stock take: Commercial banks since Sendai

- Large banks have developed over at least two decades screening systems to assess clients and assets for disaster risk and to some extent, risk reduction, but not notably since 2015.
- Several recent academic studies find a positive correlation between ESG ratings by clients, of banks themselves and lower losses to the banks.
- We are not able to say to what extent these risk management practices translate into better DRR outcomes for the wider community. It is likely that many companies or assets do not experience credit impairment because they were adequately insured, for example.
- A more confident understanding of the mechanics and transmission between white collar risk perception in the banking world and project-level DRR changes on the ground could be achieved by a separate academic study with the co-operation of banks and their clients through disclosure of loan terms and follow-up actions.
- There is a widespread in bank practices between the richest and poorest economies. One study focused on Bangladesh, one of the most disaster-prone countries, found that the data for which loans were impaired by natural disasters did not even exist and efforts to address disasters were only ever ex-post, in the form of Corporate Responsibility.
- Our inference is that DRR as a wholistic discipline as the Sendai Framework envisions it is presently deferred to the MDBs and DFIs of the wider banking world. Beyond merely judging the risk of impairment or less, it is likely viewed by commercial banks as an activity adjacent to aid, development and capacity building, rather than finance on commercial terms, even while commercial banks’ finance more commonly appears in a green or social wrapper.
- To the extent that banks engage directly in DRR-friendly activities, it is through conventional Corporate Responsibility means, such as donations and ad-hoc projects, rather than flowing directly from their credit risk screening processes or net zero commitments.
- We expect more emphasis on policy circles will have to be placed on adaptation and resilience in response to the increasing frequency and severity of natural disasters. The motive to reduce losses and increase protection is likely to feed into tighter financing conditions and inspection regimes from banks.

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28 Bangladesh Institute of Bank Management, Addressing Disaster Risk by Banks: Bangladesh Perspective
Stock-take: Institutional investors since Sendai

In the introduction, we provided an explanation for why initiatives that are focused exclusively on emissions reductions in the round; investors and banks reducing their relative exposure to emissions intensive activities; and investment in cleantech without some specific, location-based DRR application would be deemphasised in this report. The benefits of these activities to DRR would only ever materialise decades from now (given locked-in warming from existing GHG atmospheric concentrations). They do not accrue directly or in a timely way to areas and populations most at risk. Neither can they make any contribution to any of the seven Sendai targets by 2030. This is not a criticism of investor actions or to diminish their value in any way. Candidly, this decision has the effect of passing over very nearly all of the considerable investor activity on climate change since 2015.

For context, this activity includes but is not limited to:

- The promotion of the TCFD, at policy and company/asset level, and by investors themselves (TCFD asks adherents to assess among other things business continuity risks and mitigations from climate events)
- The creation and widespread adoption by large investors of initiatives such as the Net Zero Asset Owners Alliance and Net Zero Asset Managers Initiative, UN Race to Zero
- The creation of hundreds of climate-themed funds (bespoke for private and professional clients and off-the-shelf for retail clients) or those committing to reduce emissions relative to their respective benchmarks, and/or promoting ‘climate leaders’
- The pursuit of collaborative investor engagement programmes like the Transition Pathway Initiative and the Climate Action 100+ initiative
- Engagement and advocacy with state and policy actors.

Impact Investment

One growing area where we reasoned that we might find investors taking a more hands-on, focused interest in DRR was through a category of ESG and Sustainable Investment known as Impact Investment. What sets genuine Impact Investment apart from, for example, a fund that tilts its investments towards companies with high ESG ratings and excludes those with the lowest or invests more generally according to themes like climate change or health, is that Impact Funds set out to achieve specified, measurable and quantified social or environmental dividends. This is in addition to make an acceptable return for their investors (Impact funds may be concessionary finance, but not as a rule, as is often misunderstood to be the case).

Such Impact Funds, meeting these strict criteria, usually invest in smaller companies. These often have a developing country bias. Its products and services should be based unambiguously and intentionally on improving the life chances and well-being of people and the environment in their immediate community. It is easy to imagine how such funds might, for example, seek to identify and invest in companies improving the distribution of vaccines in countries with limited infrastructure, or creating afforestation and water management programmes to roll back desertification and so forth.

It was indeed possible to find examples of investee companies pursuing such goals within such Impact funds. However, we did not find that Impact strategies were coherently focused on DRR. We looked also at the UN Sustainable Development Goals, which have proved highly popular with investors. Our research shows that, as with DRR, few have found a way to convincingly operationalise the SDGs in the sense of targeting them through funds. The data around the SDGs and how investible they are remains poor. More commonly, they focus on the UN Sustainable Development Goals, or a subset of them some of which touch on DRR,
like SDG11: Sustainable Communities and Cities. This may be as much a consequence of the SDGs having been designed with national governments and multi-lateral organisations as the main protagonists.

Those same Impact funds more typically disbursed a larger share of its total investment to multiple SDG themes. These funds speak to sustainable development more generally, such as improved education, access to clean water, clean energy generation, local employment, gender equality and so forth.

The broad spectrum of ESG, Sustainable and Impact-themed activity carried out by investors does brush DRR in various ways, but more as a secondary effect of other goals. Institutional Investors are generally not articulating a coherent, directed approach to Disaster Risk Reduction as a mindset - far less as an investment or engagement strategy, in its own right. Recall that this report is also excluding from scope philanthropy (with no expectation of any financial return) and pure aid.

Non-climate disasters: institutional investor involvement

We found some encouraging examples of investor initiatives that do focus on systemic risks and the need for coordinated action on DRR.

The Investor Action on Antimicrobial Resistance (AMR) initiative seeks to bring attention to and policy and company action on the slow-burning global threat of an AMR epidemic. Following an open letter from this coalition of institutional asset owners and investors to the G7 Finance Ministers, the latter agreed to adopt the issue as a priority and work with stakeholders to explore a range of market incentive options with a particular emphasis on pull mechanisms to entice competent pharmaceutical companies to invest in the creation of a new generation of antibiotics.

Prompted by the Brumhaddino disaster in Brazil where 270 people lost their lives owing to a defective tailing dam failing, a coalition of investors came together to compound their influence. The petitioned mining companies in which they held shares to demonstrating what action they had taken or would take to ensure no similar events should happen at their mines.

The COVID-19 pandemic produced engagement from investors on what companies were doing to cushion their stakeholders from the worst economic and health effects.

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29 Investor Action on AMR, G7 Finance Track-Response Letter from the Investor Action on AMR Coalition

30 Responsible Investor, SEC charges Value with misleading investors over Brumhaddino safety
Conclusions from stock take: Institutional investors since Sendai

- The mainstreaming of ESG as a must-do in the investment world since 2016 means that the themes and goals with which DRR is concerned now have a sympathetic audience. It has become easy for companies and investors raise funds which promise to address, inter alia, climate change, inclusive development, clean tech, sustainable agriculture and so forth. The door is open to DRR, consequently
- Nevertheless, fund flows to well-defined DRR topics still only emanate from governmental, multi-lateral and philanthropic sources. DRR, as a discipline, has not entered the lexicon of investment. Its nearest equivalent is the notion of resilience being built into physical assets: real estate and infrastructure. For these kinds of assets, conducting modelling exercises and taking preventative or mitigating measures to reduce risk against climate change induced hazards is comparatively common and expected by popular sustainability benchmarks such as GRESB31
- Banks and investors are of course interested in good DRR outcomes. Its failure to catch on as an investment theme may be because it is not obvious how to make money from preventing a future event; the counter-factual. Investing in renewable energy can generate financial returns (and lower emissions). Investing in e.g., training, governance, technology transfer and capacity building cannot generate financial returns, and is the reason why SD16: Peace, Justice and Strong Institutions or 17: Partnership for the Goals attract virtually no aligned investment from private markets. Following the same, ‘emissions avoided’ had to be converted into something tradable of value before it could escape the philanthropy bucket
- The contrast to the Risk Transfer Market’s approach to DRR here is instructive. Re-insurers make money from non-events. But, unlike generalist investors, a re-insurer has a direct, large financial interest in a potentially highly expensive specific loss and damage event not occurring and greater leverage than a highly diluted investor, one of millions. By getting the underlying insured parties to act in ways that mitigate risk, say by adopting better building codes, the insurer and the insured stand to benefit from this bilateral arrangement. The transmission between preventative actions, risk and reward is comparatively linear and bankable
- Arguably, the manner in which institutional investors (and indeed all members of the global financial system) could punch above their weight in terms of ultimately impacting favourably on DRR is to use their convening, advocacy and lobbying power to seek change at the macro-level, for example through mandate reform at the most powerful regulatory and policy institutions. If the rules of the game are legitimately changed, so the theory goes, the right actions and behaviours should follow.

31 GRESB, Actionable ESG data and benchmarks for financial markets
Stock-take: Financial intermediaries since Sendai

Previous sections have already explained and commented on the role of investment banks and investment consultants and insurance brokers. This section will focus on two important opinion-formers: Credit Rating Agencies (CRAs) and ESG research and rating providers (ESG vendors). The main CRAs have each acquired one or more previously independent ESG vendors as the market for ESG and demand for data and ratings grew exponentially, from 2016 to 2021. The same phenomenon has occurred with investing trading and data terminals. This includes research and even remote sensing based that claims to be able to calculate with accuracy factors like the exposure of physical assets to flood risk, and the validity of claims about forests protected as part of carbon offsetting schemes, and artificial intelligence tools that seek, for example, to use sentiment analysis to interpret stakeholder perception about a company’s ESG performance. The CRAs are now to varying degrees incorporating routine consideration of climate change risk in their credit ratings and publishing related forward-looking research, including the potential for assets to become stranded either through physical and disaster risk or by technological or policy means. They also selectively draw in insights and datapoints on ESG performance, including climate and emissions, from the ESG vendors they have bought, who continue to operate as subsidiaries serving investor, banking and corporate clients. These vendors increasingly offer their clients tools such as modelling of their portfolios for carbon emissions and create heatmaps to identify both the largest sources of emissions, of regulatory risk, of physical vulnerabilities from hazards and so on. They are also rapidly developing models and products that help their clients along the notoriously complicated process of making their portfolios ‘Net Zero’ over time. The world of ESG and climate data, metrics and models has come under increasing scrutiny and been a source of frustration for users and regulators since 2015. The following table explains the advantages and perils of using them in a finance context. This has led for some regulators to signal their intention to make ESG ratings regulated in the sense that other financial ratings and labels are.

This plug-in of ESG data into the International Financial Architecture has relevance to Disaster Risk Reduction. It should be important that ESG vendors obtain quality, up-to-date data and
using sound methodologies to calculate which locations, assets, countries and so on are better or worse prepared for disaster risk and dealing with its aftermaths. It is rational to project that these concerns will increasingly be valued by clients seeking to allocate their capital and in cases direct sustainable funding aligned with sound DRR. This is especially as financial actors are forced by events, regulation and protection motives to more attention to the resilience and adaptation side of the climate equation. Presently, the overarching focus from vendors and their clients is on how well protected a given company or asset is from ESG risks, and increasingly how well they may capitalize on ESG opportunities such as clean energy. Only a small subset of ESG research homes in on reducing disaster risk, primarily concerning physical assets like infrastructure and real estate and high-impact, high-risk sectors like oil and gas and mining.

**Conclusions from stock take: Intermediaries since Sendai**

- The market-wide uptake of ESG and particularly climate change data, metrics and indeed targets is an encouraging improvement on the status quo ante in 2015. Commercial investors are far more likely to be interested in the DRR agenda in the wake of hundreds of organisational sign-ups to Net Zero commitments, as well as other relevant ones like biodiversity, to say nothing of the newsflow on disasters.
- However, many aspects of DRR, such as the qualitative, knowledge and governance aspects are not strictly investible from a markets perspective. Progress on those areas may be knowable, however, and that is relevant for some investors. For example, there are ESG ratings for sovereigns that issue debt. These ratings take into account how a country is developing or declining on measures of institutional strength, environmental protection, freedom of speech, protection for property rights and so on. Investment products have been designed around committing to take due account of such sovereign ESG ratings when buying sovereign debt. They are acknowledged in and sometimes influential on CRA ratings.
- ESG ratings from CRAs, vendors and the wider sell-side are most likely to have some influence on DRR where they can identify countries and physical, fixed assets that are at risk from disasters and where those risks are being poorly managed. While tools exist offering this kind of insight at a granular level, their use to influence investment decisions is far from commonplace. It will tend to be employed only when a given bank or investor owns a meaningful share of that asset that makes such forensic scrutiny worth the effort and expense.
- Investors in physical assets, or who have, for example, an interest in the outcome of a crop harvest in a given locale or forestry in areas experiencing increased drought will more commonly combine in-person visits and audits with tools such as remote sensing data, soil tests and weather modelling. These can be integrated to create a real-time picture of its health and exposure to disaster risk. The cost to the host communities of these risks crystallising may not feature at all however, unless the asset and its backing investors have built humanitarian aspects into their management strategy (e.g., evacuation plans, setting up of emergency stations).
- The very limited availability and transferability of ESG data is in ‘real assets’ i.e., physical infrastructure and capital assets is an obstacle to assessment. Where it exists, it tends to remain in private hands. This contrasts with publicly listed companies, where such data and ratings are available, commoditised and fungible across many years, from multiple vendors (to say nothing of its quality). Better quality ESG data on private assets becoming ‘liberated’ in a similar fashion to equities. In becoming easily discoverable and exchangeable it would be helpful in allowing a range of stakeholders better understand the state of their prevention, preparedness and mitigation of disaster risk.
SECTION 4: DISCUSSION OF GLOBAL FINANCIAL SYSTEM AND CAPITAL MARKETS CHARACTERISTICS: BARRIERS AND OPPORTUNITIES FOR DRR

The International Financial Architecture evolved in the way it did, in the post-WWII era, for a mixture of motives. Ostensibly, institutions like the MDBs were created and central banking became more powerful and independent as means of preventing economic collapses, political disorder and market contagion that can follow, as well as means of fostering development and free trade. These were also and to some extent remain tools of wielding geopolitical influence, and some argue, serving the financial interests of some narrow groups at the expense of the more vulnerable, as became a flashpoint, for example during the restructuring of Greek debt following the Financial Crisis, or in decades past, the structural adjustment programmes of the IMF having the effect of defunding social development infrastructure.

Since the collapse of the Bretton Woods approach and the financialisation of the global economy, along with globalisation, we have witnessed that each of these institutions has receded in influence. The capital markets system has become larger, more pluralistic, more complicated and dynamic. A corollary of this financialization is that capital markets carry more energy, velocity, interconnectivity and unpredictability, as witnessed in The Financial Crisis and lately the inflationary crisis. Moreover, though while international markets and their plumbing were never created with social goals as part of any mission, economic orthodoxy takes as read that markets are broadly benign. It is seen by even its reluctant advocates as the pre-eminent wealth generator and stimulant of competition and innovation, but with systemic risks attending from time to time, which cause acute, sometimes chronic but never terminal crises.

The tendency for markets to act as if natural resources are permanently regenerative while they ignore and pollution and other ‘externalities’ in the pursuit of short-term wealth extraction has been analysed exhaustively since at least The Tragedy of the Commons. Markets generally only count as value what they can be reasonably forecast over a rolling period of a few months to at most few years. They are unable, even prevented, through game theory problems, of acting prudentially and sustainably. Markets are simply not designed for that purpose and have proved inimical to it.

In recent decades, capital markets have to a large degree become their own end. An increasing share of trading volume each day does not serve any obvious economic function that we could call even borderline socially useful, if one excludes remote and marginal technical characteristics like sheer liquidity and optimal price discovery. At its worst, it can resemble rent extraction and parasitical behaviour. This detachment and the distortions and dark spots created by an overweighted financial system that thrives on complexity is by no means the sole cause of human-made disasters. Markets are responding to humans’ visceral instinct to accumulate and seek advantage. But the short-termism of markets, and the global financial system that sits within it, acting as both poacher and gamekeeper, is clearly a very large part of the problem in correcting to a more sustainable path for the planet and a better approach to Disaster Risk Reduction.
SECTION 5: RECOMMENDATIONS

With the above endemic challenges in mind, we make the following recommendations directed at the global financial system, and those stakeholders that can influence it. We also point out where they are most likely to fail or meet resistance, using the following themes:

1. **Re-write the mandates and governance of public interest stewards in the global financial system to be more forward-looking and strategic regarding DRR**

2. **Ensure a greater share of all public sector financial flows are sustainable through creating apex-level scaling and clearing houses**

3. **Push private sector financial flows towards more sustainable, risk-adjusted outcomes by correcting pricing and other incentives**

4. **To this end, require the improvement and harmonisation of financial information to take proper account of medium to long-term risks from disasters, especially but not limited to climate change.**

*Mandate overhaul*

Major multi-lateral institutions influencing DRR such as the IMF should undergo an overhaul of their mandates to ensure DRR is core to their *raisons d’être*. Some institutions, notably the World Bank are further along with the mainstreaming of DRR and climate change into their core activities, rather than as side projects. However, we believe the past few years, following the devastation caused by COVID-19 and signs of incipient climate breakdown means that root and branch reform is more urgent than ever. It should aim at making them far more front-footed, targeted and anchored in anticipating, understanding and responding with foresight to the threats of our era. This is an existential necessity for the organisations themselves and the people they profess to serve.

Obstacles to mandate overhaul are likely to include objections that prudential organisations like the IMF and for that matter central banks should avoid mission drift and compromising their independence from the executive branches.

Furthermore, the re-writing of mandates would logically cascade down to a new era of conditionality. Finance more than ever would come with DRR and climate strings attached. Many countries, especially in the Global South, will be antagonised by this. It will be vital therefore that such funding be accompanied by upfront measures to support clean growth, provide alternative employment and other compensations to smooth the transition. Re-writing mandates would need to be reinforced with accountability mechanisms to ensure these goals are being pursued and to gauge their effectiveness. Assuming these conditions could be achieved, it would be logical for the institutions to also have more financial firepower, which means more sponsoring countries would have to put up more investment and assets. The Bridgetown Initiative referred to below has put forward proposals to achieve the latter and we urge that they are given very serious consideration by the G7 in 2023.

*Co-ordination for achieving scale in DRR financing*

As with development aid, so in climate and disaster-related financing there is duplication and dissipated effort in the global financial system. Parallel initiatives that lack the coverage, scale
and organisation make a large impact. We saw how, in the Risk Transfer Market, there are elegantly designed DRR products in place but only for a very limited number of situations. A cynic’s view is that these are elaborate showcases for the best of corporate responsibility rather than products that can become mainstream. Bringing costs down and increasing coverage and availability will require ingenuity and co-ordination.

There are proposals championed currently that attempt to at least address the problem of scale and affordability. Notably, The Bridgetown Initiative 32 has proposed that the IMF allow the use of Special Drawing Rights, which are lent from members’ respective central banks, at a concessionary rate, allowing to create a USD 500Bn Climate Mitigation Fund as well as the payment holidays on sovereign debt when disaster strikes to become the norm, rather than the exception.

One could go a step further and higher in terms of both investment and insurance coverage. Regarding climate finance there is presently also no central nervous system, acting as matchmaker between public commitments and private finance to fulfil article 2.1.(c) of the Paris Agreement; “Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development”.

Aviva Investors has promoted its idea of an International Platform for Climate Finance (IPCF). The ICPF would:

a) Bring together financial institutions (e.g., banks, insurers, investment managers) with those that shape the markets to produce a Global Finance Transition Strategy
b) Offer Technical Assistance to developing countries seeking to produce capital raising plans for their Nationally Determined Contributions (NDCs)
c) Promote and measure ever greater flows of climate finance by all financial institutions into the areas where it is needed most
d) Produce an annual report analysing the efficiency, effectiveness and consistency of the various international initiatives on climate finance.

We believe Aviva’s model is highly ambitious but logical example of this match-making facility, and expandable to other kinds of disaster risk financing, such as through DRR-led insurance and risk transfer.

Turning to insurance, a global facility of resources and expertise would involve risk transfer leaders and multi-laterals and national governments. They could collaborate on for example, creating pooled coverage that works on an opt-out basis for more at-risk zones and populations. Payouts could require an auditable re-investment element in qualifying DRR activities and building back better.

Coverage comes at a price. The distribution of risk must be and be perceived to be equitable and worth the price of entry. As these risks become better understood and greater in magnitude, it cannot be guaranteed that cover will remain, or remain affordable, at any rate. But the practice of pooling insurance cover through a mutualised approach is established for centuries, through syndicates and true co-operatives and mutuals. It is bringing simplicity to complexity that is the most challenging aspect.

This report has been forced to focus on natural hazards because the existing DRR literature discusses little else. Other kinds of risk are also in scope for such collaborative initiatives, such as preventing, preparing for and responding to pandemics.

32 Groupe D’études Geopolitiques, Breaking the Climate Deadlock on Climate: The Bridgetown Initiative
Our recommendation is that scaling DRR finance and insurance becomes more centralised through public private partnerships on a grander and permanent scale. These could take the form of built-for-purpose scaling mechanisms and clearing houses for insurance and investment, dwarfing any such efforts seen previously e.g., through the UN FCCC climate funds. At this level, backed by the securest of sponsors and assets, and with sufficient transparency private markets could likely be induced to invest hundreds of billions of dollars and underwrite similar amounts in Gross Written Premium, going off only a fraction of the growth of Green Bond Markets since 2010.

**Transition Plans for DRR: only according to the audience**

Mandate overhaul and macro-level scaling and clearing houses to mobilise DRR-aligned finance reflect a war-state mentality. That is fitting, contemplating the awesome scale of the threats we face. Some would argue that this behooves national governments and financing institutions (public and private) to also have financial Transition Plans for DRR. The Sendai Framework already hints at this:

**Sendai Framework for Disaster Risk Reduction 2015-2030**

National and local levels
27. To achieve this, it is important:

1. **(a)** To mainstream and integrate disaster risk reduction within and across all sectors and review and promote the coherence and further development, as appropriate, of national and local frameworks of laws, regulations and public policies, which, by defining roles and responsibilities, guide the public and private sectors in: (i) addressing disaster risk in publicly owned, managed or regulated services and infrastructures; (ii) promoting and providing incentives, as relevant, for actions by persons, households, communities and businesses; (iii) enhancing relevant mechanisms and initiatives for disaster risk transparency, which may include financial incentives, public awareness-raising and training initiatives, reporting requirements and legal and administrative measures; and (iv) putting in place coordination and organizational structures;

2. **(b)** To adopt and implement national and local disaster risk reduction strategies and plans, across different timescales, with targets, indicators and time frames, aimed at preventing the creation of risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience;

3. **(c)** To carry out an assessment of the technical, financial and administrative disaster risk management capacity to deal with the identified risks at the local and national levels.

Transition planning is already an established concept when it comes to the Net Zero agenda. DRR however is a concept and mindset that is presently understood and appreciated by only a small corps of professionals. It does not enjoy salience as the holistic and distinct discipline that was hoped for. It has no currency in the International Financial Architecture beyond MDBs/DFIs. Climate change as a chronic risk is consuming most of the oxygen in the war room, in general, and in the global financial system. Therefore, advocates for DRR must be pragmatic about how the wider DRR agenda can best be promoted, given strong existing biases.

One mode could be to try to expand the climate conversation to encompass not only resilience from physical climate change (as it already should, but frequently does not) but to resilience to disaster in general. The Net Zero transition itself will cause many second-order shocks that would find their way to - or originate from - the International Financial Architecture. However, experience shows that policymakers and other actors struggle to focus when the topic expands beyond what appears to be a well-defined enemy (in this case, climate change). We believe this expansion idea is likely to fall victim to this process.
It is also arguably a question of the locus of planning and transition. Some countries have embraced a DRR mentality and the co-ordination and coherence it requires, horizontally and vertically. The machinery of government is closest to the legislature and central planning. This approach does not work in systems as pluralistic and arguably ungovernable as the arguably mis-named International Financial Architecture. Indeed, not only is this a misnomer but a thinking error: to attribute the global financial system a sentience that it does not really possess, rather than think of its outcomes as the sum of all its interactions. This is a characterisation that participants would recognise as more accurate. The most pragmatic if least satisfying endgame is that individual disaster risks that are not obviously first-order climate risks require their own distinct description and approach by their stakeholders e.g., for cyber, pandemics, nuclear war et cetera. We suggest that this is indeed the most likely outcome, and especially so for the global financial system. As such, this is per force a recommendation for continuity, with improvements. MDBs and DFIs are duty-bound to tackle the DRR agenda. They should be held more accountable for how DRR features in and even underwrites a larger share of their activity and financing. This would be greatly aided by mandate overhaul. Climate-related transition planning for the other global financial system actors is already firmly on their agenda. For every other DRR issue: we are forced to recommend engagement on case-by-case basis.

**Disclosure convergence**

Given the above discussion of the very limited ability of actors in the global financial system to focus on more than one major DRR topic, the first of our recommendations focus on climate change. Banks (including central banks and MDBs/DFIs), for-profit institutional investors, insurance companies and large intermediaries in the global financial system should:

- Report on the Taskforce for Climate-related Financial Disclosures and adopt the forthcoming standards of the International Accounting Standards Board on climate and other topics
- Set out their own organisation-wide Transition Plans for achieving Net Zero carbon by 2050 at the latest, consistent with UN criteria like Race to Zero and the UN FCCC Climate Action Pathway
- In these Plans, be required by emerging standards and regulations to give greater weight to Disaster Reduction and Resilience, not just emissions mitigation (something that also requires strengthening in the aforementioned UN criteria)
- Become members of and work toward the fulfilment of the most relevant, actor-specific commitments and frameworks such as the Net Zero Asset Owners Alliance, Net Zero Asset Managers' Initiative and/or Net Zero Banking and Insurance Alliances.

Regarding DRR specifically, as a category of disclosure, regulators and supervisory bodies should:

- Make large/listed companies risk reporting on DRR mandatory and ask standard setters such as ISSB to create standards for DRR-related disclosure beyond climate
- Support and adopt a consensus-driven taxonomy of DRR qualifying expenditure, investment and technology
- Require ESG vendors to provide not only information about risks exposure but also about actions taken to reduce these risks / Create specific DRR scores / ratings (unbundled from ESG rating). This should apply to sovereigns and to the most risk-exposed commercial sectors.

Speaking to DRR more broadly, supra-national, national regulators and prudential authorities should:
• Endorse and make part of stress tests, accounting valuation and risk management regulations explicitly using longer time horizons (10 years minimum) to better account for sustainability, climate and other disaster risks
• Extend these requirements to rating agencies, especially those of systemic importance
• Define and enforce transparency on how much countries are investing on DRR measures, taking advantage of the development of a consensus-driven DRR taxonomy of qualifying investment and technologies (this would allow investors and CRAs to better capture DRR in their decisions).

Fiscal and price signals
Intra-industry regulators, standard-setters and intermediaries like the accounting, actuarial and consulting professions, taking their cue from macro-level regulatory trends, can strongly influence how disaster risks and sustainability opportunities can be measured, financially valued and perceived. These include:

• Lengthening corporate research and long-term macroeconomic forecasting horizons to embed a range of known and material disaster risks
• Developing and refining disaster forecasting and scenario analysis to improve financial institutions’ understanding, such that they can act more confidently knowing they are fulfilling their fiduciary duty to deliver risk-adjusted returns
• Require commercial banks to embed DRR assessment in credit decisions (develop adequate methodology for this purpose, for example through the principles for responsible banking) / impose higher capital requirements for loans that create additional risks / exacerbate risks
• Explicitly pricing in a range of shadow carbon prices, taxes and other plausible DRR interventions that are consistent with different scenarios
• Require the commitment of CRAs to be transparent about how they take into account a country’s participation in DRR activities, governance and other mitigating factors like access to loans with payment holidays following disasters. This would create fairer ratings, avoid reflexively downgrading a country’s debt when disaster strikes and lessens that risk of sending the country into a spiral of being unable to finance recovery and future resilience
• Make it easier, via prudential regulation and other incentives, such as green regulation and benchmarking conformance, for insurers and other institutional investors to invest part of their AuM into DRR-specific investment e.g., resilience bonds, adjustment of solvency rules in exchange for risk-reducing investment/loans.

Advocacy and expertise sharing
• All actors in the global financial system can advocate for the above changes to the system that would take better account of and respond constructively to the DRR agenda, notwithstanding the global financial system’s systemic shortcomings. There are many examples of investors, insurers and others that already do so and seek to obtain change at multiple levels of organisation
• On a positive note, the International Financial Architecture is a vast and dynamic repository of knowledge, data and expertise. Many private financial institutions and intermediaries are already involved in PPPs that help leverage this expertise, often as part of their Corporate Responsibility outreach. However, these tend to be sporadic and do not accumulate and circulate more widely. Our recommendation is that the UN DRR seeks to build such programmes with different segments within the global financial system, such as with re-insurance, banking, investing, and consulting. The environment currently for a positive response is likely to be more receptive than ever.