A hand is shown placing a puzzle piece into a globe that is constructed from many interlocking puzzle pieces. The scene is set against a dark blue background with a wooden surface at the bottom. The globe is the central focus, and the hand is positioned on the right side, reaching towards it.

# Towards disaster risk-sensitive investments

The Disaster Risk-Integrated Operational Risk Model

---

May 2017

---

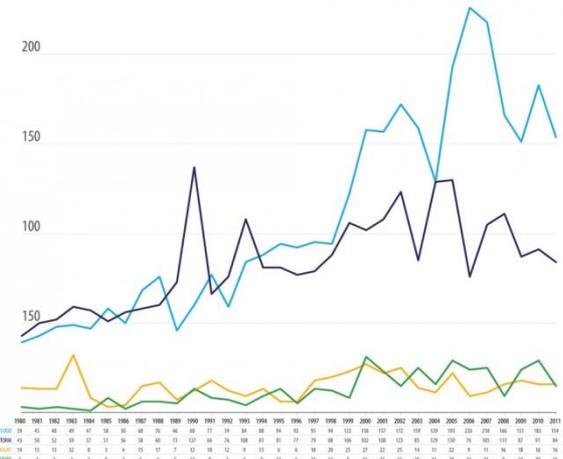
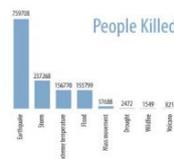
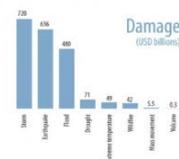
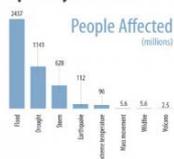
# The impact of disasters is growing over time

## Innovative approaches to combine disaster risk and operational risk are needed

- The impact of disasters is growing over time, and the need to consider disaster risk as a core element of a comprehensive and coherent business strategy is increasingly compelling.
- Nonetheless, disaster risk is often still considered as a stand-alone component of business risk, often a “tail-risk”, hard to measure and, therefore, overlooked.
- As the frequency of extreme weather events continues to increase on the back of climate change, a paradigm shift for both businesses and governments is needed.



### Impact by disasters



Source: UNISDR

# Disaster risk reduction: Sendai Framework & the SDGs

A number of global initiatives are underway to respond to these challenges. The Sendai Framework leads the way, but SDG 11 mainstreams disaster risk reduction into the sustainable development agenda



# Mainstreaming disaster risk: the DRIOR model

The Economist Intelligence Unit developed an original model bridging operational risk and disaster risk

---

- The Economist Intelligence Unit was commissioned by UNISDR to build an original model to mainstream disaster risk into operational risk.
- Launched in November 2016, the **Disaster Risk-Integrated Operational Risk (DRIOR) model** makes an original contribution through the creation of a tool serving two communities:
  - **Private sector:** measuring risk in a holistic fashion and better planning for sustainable investments;
  - **Policymakers:** evaluating the scope of policies; helping to identify gaps and set priorities when building institutional capacity and devising programmes on disaster risk management; identifying good practices.



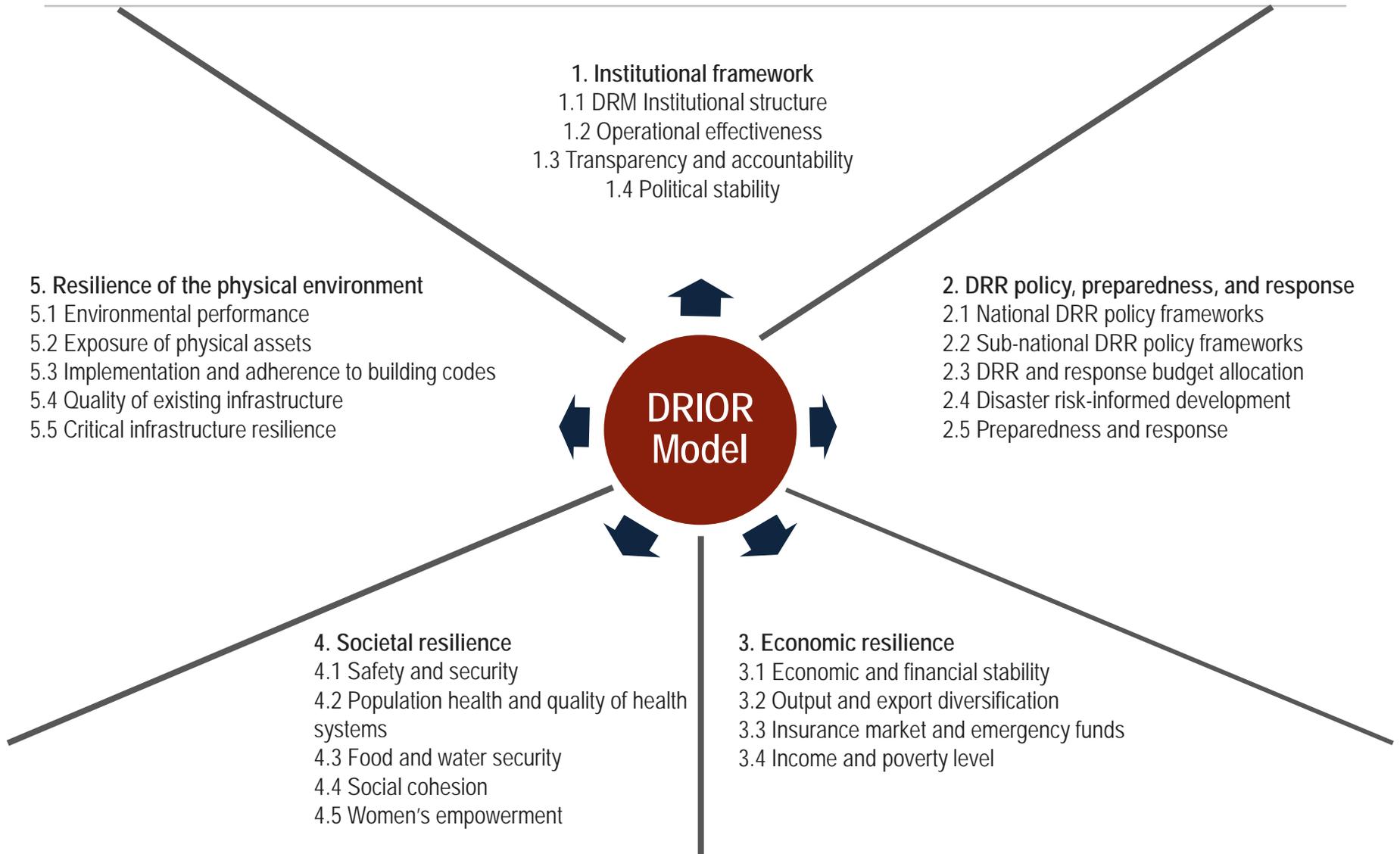
# We ran a pilot programme testing the model in 20 countries

We chose countries with different levels of socioeconomic development from different regions



Countries were selected by UNISDR and the EIU to reflect geographical diversity, absolute exposure to disaster risk, and exposure to disaster risk relative to total capital stock.

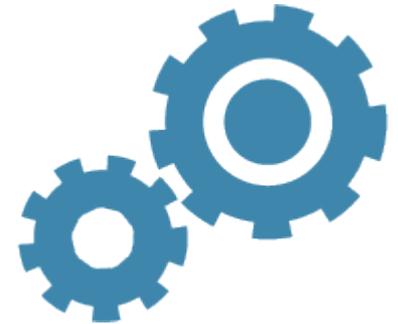
# The DRIOR model framework



# Key findings

---

- **All countries we reviewed have at least one national-level entity responsible for DRM**
  - The US, Japan and South Korea have the most robust institutional frameworks for DRM.
- **Political leadership is crucial to DRM strategy**
  - In our model, support from political leaders for DRM is a determinant of operational effectiveness.
- **Governments that make tangible investments in DRM are less vulnerable**
- **Strategic planning is key**
  - Most countries have disaster-risk strategies, but only seven require sub-national governments to have policies.
- **Budget allocations for disaster risk are rising in many countries, but dedicated budgets are not yet the norm**
- **A shift from disaster response to preparedness is underway**



# Key findings

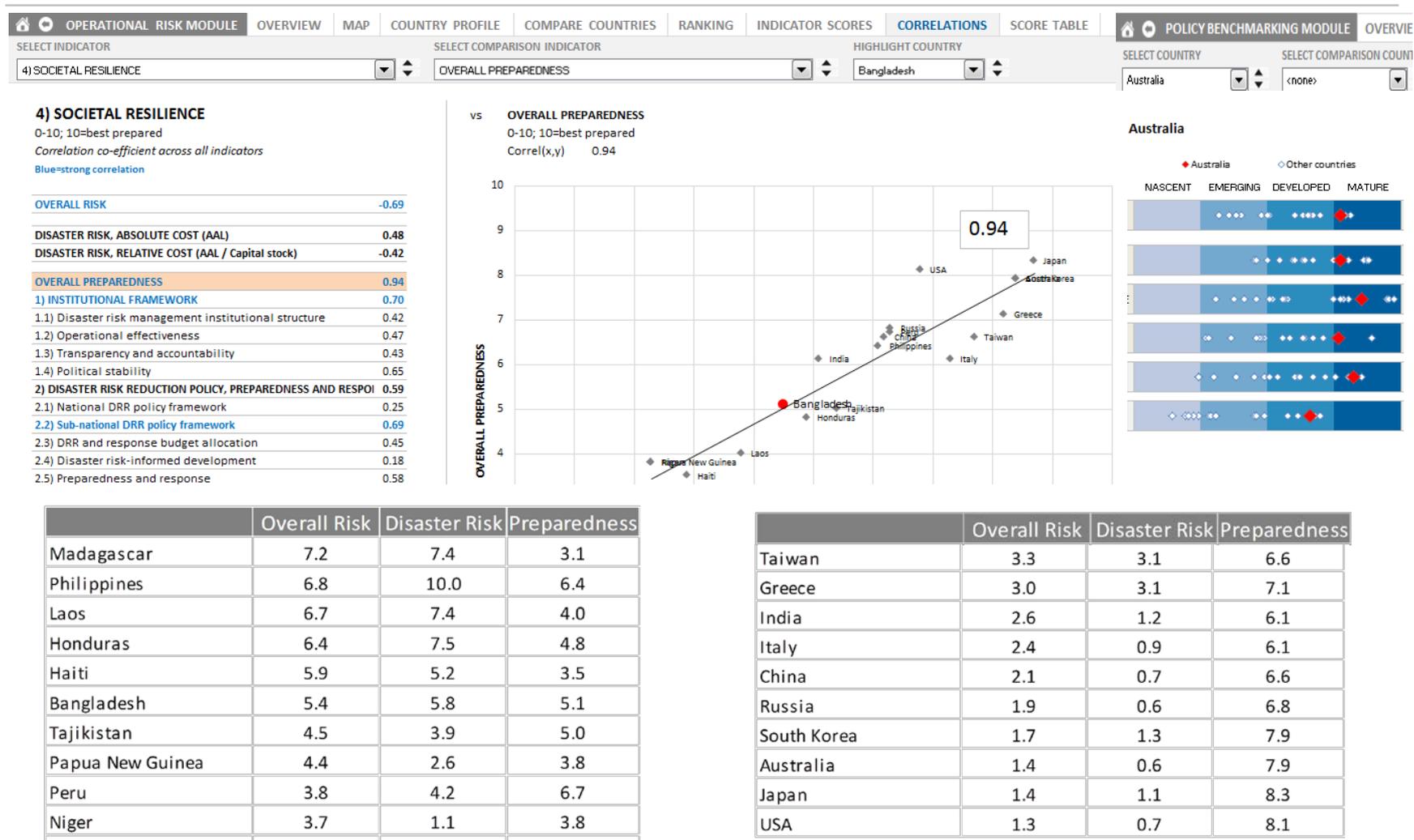
---

- **Industrialised countries with open and diverse economies are the most economically resilient**
- **The degree of access to insurance markets and economic resilience are highly correlated**
  - Integrating climate and disaster risk into insurance markets in ways that make disaster-risk insurance widely available is a work in progress.
- **Countries that rely on their agricultural sector are also the most economically vulnerable**
- **Disaster risk is highest where vulnerable societies and high exposure to hazards coincide**
- **Resilience of physical environment accounts for much of a country's overall preparedness**
- **Countries' progress in implementing preventive and corrective measures varies greatly**
  - Adherence to building codes is crucial in improving the resilience of physical environments.
  - The government of Bangladesh acknowledges 90% of structures don't meet building codes.



# The model—and the benchmarking results

For investment planning and risk management, information is presented through data analytics functions



# The qualitative analysis

The model is supplemented by trend analysis, dedicated country assessments and deep-dives

The Economist

Intelligence Unit

## Towards disaster-risk sensitive investments

### The Disaster Risk-Integrated Operational Risk Model

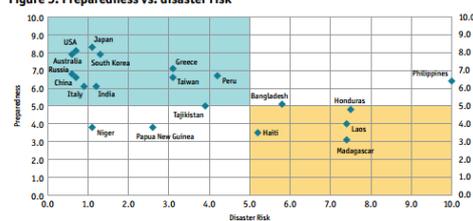
A study by The Economist Intelligence Unit



Commissioned by the United Nations Office for Disaster Risk Reduction

Towards disaster-risk sensitive investments  
The Disaster Risk-Integrated Operational Risk Model

**Figure 5: Preparedness vs. disaster risk**



Source: The Economist Intelligence Unit.

### Framework development

The DRIDOR framework is built around five pillars, which provide a holistic assessment of countries' operational risk levels, with a specific focus on disaster risk:

- **Institutional framework:** This domain explores a country's institutional capacity by assessing its institutions of DRM, their operation (including staffing, access to resources, reporting structure), and a country's political economy, which influences overall institutional effectiveness.
- **Disaster risk-reduction policy, preparedness and response:** This domain explores a country's disaster risk-reduction strategies and policies at national and sub-national levels, its budgetary processes in the area of disaster risk, and the extent to which disaster risk has been incorporated into national development plans and other policies. It also assesses the national government's disaster preparedness and response capabilities, in particular contingency planning for disasters, hazard monitoring, early-warning systems and other steps that enable an effective disaster response.
- **Economic resilience:** This domain explores economic resilience—a crucial aspect of a country's capacity to build disaster resilience and absorb the short- and longer-term economic impacts of disasters. The economic-resilience domain assesses a country's economic structure and macroeconomic stability, its degree of openness to trade, its access to insurance markets, and the state of economic development.
- **Societal resilience:** This domain explores societal resilience—a measure of how societies respond to and are able to cope with the impact of disasters. The domain assesses this resilience by looking at 17, mostly quantitative, indicators. They cover areas that are crucial for a society to absorb effectively the negative impact of disasters: the ability to maintain public order, the capacity to provide public services (especially in the area of health), the provision of basic needs, and proxy indicators for social cohesion and women's empowerment.

© The Economist Intelligence Unit Limited 2016

Towards disaster-risk sensitive investments  
The Disaster Risk-Integrated Operational Risk Model

## India

India

Other countries

NASCENT   EMERGING   DEVELOPED   MATURE

	Overall Preparedness	1) Institutional Framework	2) Disaster Risk Reduction Policy, Preparedness and Response	3) Economic Resilience	4) Societal Resilience	5) Resilience of the Physical Environment
Overall Preparedness	++	+++	+++	+++	+++	+++
1) Institutional Framework	+	++	++	++	++	++
2) Disaster Risk Reduction Policy, Preparedness and Response	+	++	++	++	++	++
3) Economic Resilience	+	++	++	++	++	++
4) Societal Resilience	+	++	++	++	++	++
5) Resilience of the Physical Environment	+	++	++	++	++	++

**Institutional framework**  
The National Disaster Management Authority (NDMA) is responsible for disaster management, and its expert members and the prime minister (who acts as the NDMA's ex-officio chairman) have statutory authority. The NDMA has a permanent staff, and it facilitates and co-ordinates the enforcement and implementation of policy and plans for disaster management<sup>19</sup>. Its main legal instrument is the Disaster Management Act of 2005—a powerful law with strict penalty provisions. There is no independent authority that guarantees its independence<sup>20</sup>. In the 2014–15 fiscal year, its budget was Rs3.87bn (US\$60m). The National Executive Committee (NEC) assists the NDMA as a co-ordinating and monitoring body for disaster management, and the National Institute of Disaster Management (NIDM) acts as a separate capacity-building arm.

Under India's federal structure, disaster risk management is a state matter, and some (but not all) states have a fully functioning disaster management authority and legal frameworks in place. The State Disaster Response Fund has an allocation of Rs612bn for 2015–20<sup>21</sup>. India also has a National Platform for Disaster Risk Reduction, which brings together stakeholders from the public and private sector and international organisations<sup>22</sup>.

**Disaster risk reduction and disaster risk management policy**  
India's policy framework for disaster management mandates the mainstreaming of disaster risk reduction into development planning and programmes. The National Disaster Management Policy 2009 has separate chapters on disaster prevention, mitigation and preparedness; response; relief and rehabilitation; reconstruction and recovery; and capacity development<sup>23</sup>. The National Disaster Risk Reduction and Management Plan (NDRRMP) 2011–28 includes targets and timeframes, although not for all disaster risks. Policymakers recognise disaster risk concerns, and environmental laws increasingly reflect these concerns. The National Action Plan for Climate Change, for example, was formulated with an emphasis on managing disaster risk. India's National Contingency Action Plan defines the roles and responsibilities of authorities in contingency planning at the federal, state and district level<sup>24</sup>. Agencies that monitor natural hazards include the Geological Survey of India, the India

© The Economist Intelligence Unit Limited 2016

Read more about the research [here](#).