



# IDF Open Risk Modelling

# Three ways to open up risk insight

- **Global Risk Modelling Alliance**
- **Technical investment in open modelling infrastructure**
- **Global Resilience Index Initiative**

# The Protection Gap

1%

The percentage of natural disaster losses in developing countries 1980-2004 that were insured. This compares to c.30% in developed countries.

Dag Hammarskjöld Foundation and UNDP 2019  
[Financing the UN Development System: Time for Hard Choices](#)

\$162.5bn

The size of the global insurance protection gap. Emerging economies account for \$160bn (96%)

Lloyd's World At Risk report, Oct 2018  
[www.lloyds.com/worldatrisk](http://www.lloyds.com/worldatrisk)

\$4tn

The estimated figure lost to extreme natural disaster events globally over the past 40yrs

[Swiss Re database of natural catastrophes](#)

# RISK MODELLING STEERING GROUP (RMSG)

## Members:

AIG Re, AIR Worldwide, Allianz Re, Aon (and Aon Impact Forecasting), Aviva, AXA Group, Axis Capital, Bank of England, Centre for Disaster Protection, Centre for Greening Finance and Investment, China Re, Convex, CoreLogic, Fathom, FCDO, FSD Africa, GEM Foundation, Geneva Association, GFDRR, Guy Carpenter, Hannover Re, Howden Group, ImageCat, InsuResilience Solutions Fund, InsuResilience Global Partnership Secretariat, JBA Group, KatRisk, Lloyd's of London, MCII, MS Amlin, Munich Re, Oasis LMF, RenaissanceRe, RMS, SCOR, NASDAQ, START Network, Swiss Re, Talbot, Tata Consultancy Services, UNDP, UNDRR, WTW, Xceedance and Zurich.



# What's the problem?

## **Risk analysis is critical to climate and disaster risk strategy:**

- Investment in resilient infrastructure
- Contingent risk finance
- Early action, anticipatory finance

## **But access to risk analytics is unequal:**

- Model platforms are expensive
- Proprietary formats prevent sharing or comparing
- Uncertainties are hidden
- Local research is not sufficiently used
- Public and private sector views are separated

**A solution is required to democratise risk understanding**

# IDF RISK MODELLING STRATEGY

## 1. CAPABILITY DEVELOPMENT & CONTENT

- An expert team to work with countries
- A grant fund to fill critical model and data gaps

= **Global Risk Modelling Alliance (GRMA)**

## 2. OPEN RISK MODELLING INFRASTRUCTURE

- Open-source risk modelling platform and tools
- Open data standards
- Interoperability between formats

= **IDF-Oasis technical development programme**





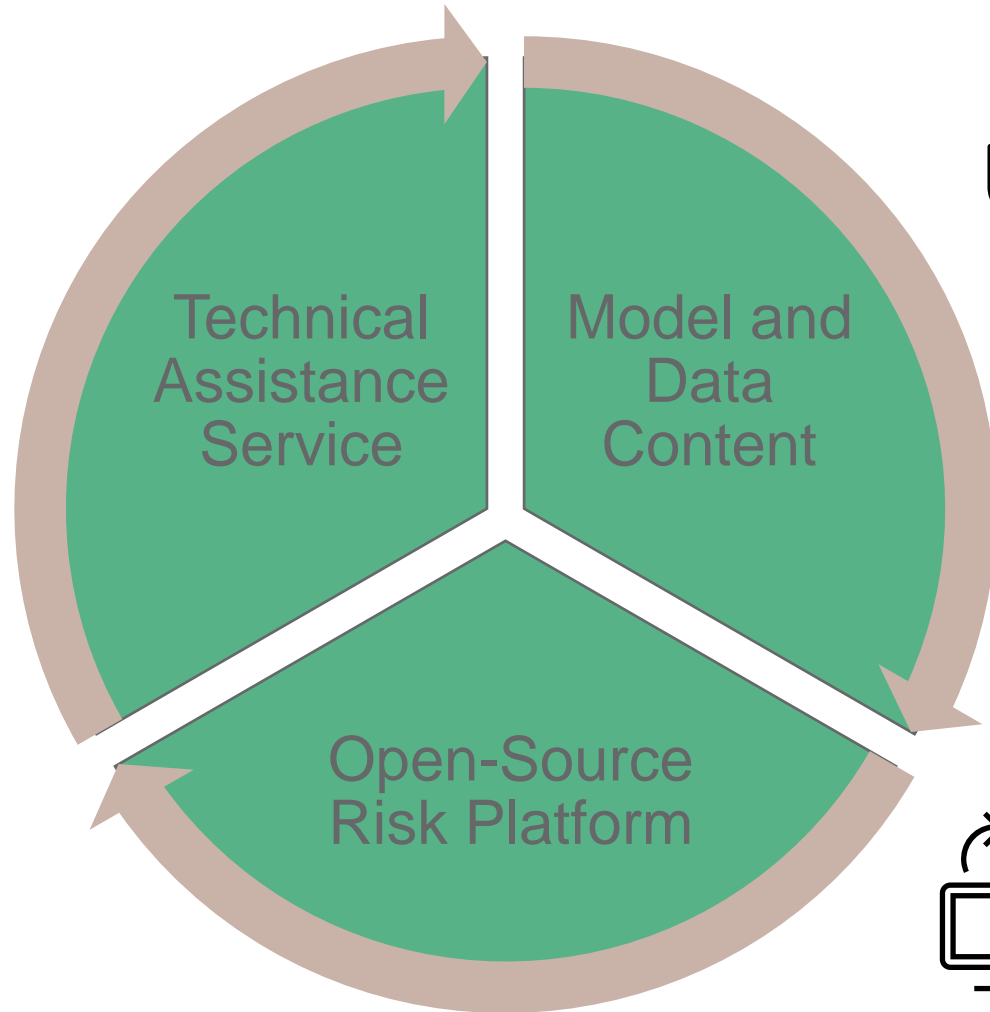
**Global  
Risk  
Modelling  
Alliance**

# **GLOBAL RISK MODELLING ALLIANCE**

**[www.GRMA.global](http://www.GRMA.global)**

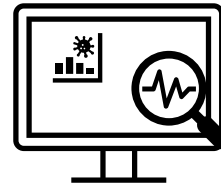
March 2023

# The GRMA's approach to democratize risk understanding



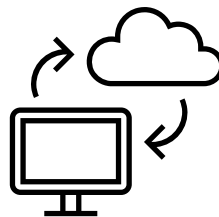
## Technical assistance service:

- > Public and private sector expertise
- > Advice on model development
- > Co-defined risk projects
- > Commissioning & quality assurance



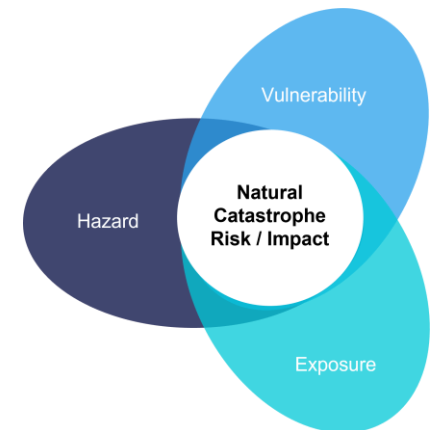
## Models and data for public good:

- > Filling strategic model/data gaps
- > Translating existing research
- > Emphasis on local data



## Open risk modelling platform:

- > Free to use
- > Designed for risk finance
- > Open source, open data standards
- > A community of model providers







# Global Risk Modelling Alliance



VULNERABLE  
TWENTY  
GROUP

**DF** Insurance  
Development  
Forum



Federal Ministry  
for Economic Cooperation  
and Development

Funded by

**KFW**

Hosted by



**InsuResilience**  
Solutions Fund

Managed by



**Frankfurt School**  
of Finance & Management

German Excellence. Global Relevance.

Supported by IDF member companies:

**AIG**

**AON**

**AXA**

**AXIS**

*RenaissanceRe*

**SCOR**  
The Art & Science of Risk

**wtw**

**convex**

# IDF-Oasis technical projects

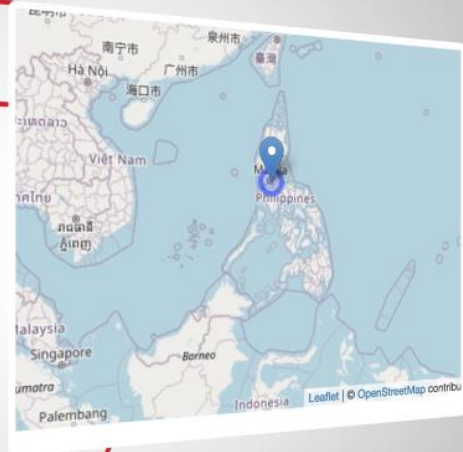
Completed 2021-2022	Planned for 2023
Oasis code roll, improved performance	
Oasis Risk Explorer I	
Oasis: Fragility Curves study	
IDF CatRiskTools	
Interoperability: ODTF	
OED improvements with World Bank	
Total spend <b>\$350k</b>	

# IDF-Oasis technical projects

Completed 2021-2022	Planned for 2023
Oasis code roll, improved performance	Oasis dynamic event set generation
Oasis Risk Explorer I	Oasis Risk Explorer II
Oasis: Fragility Curves study	(Oasis: forecasting integration)
IDF CatRiskTools	Global Exposure Database
Interoperability: ODTF	Interoperability (ODTF continued)
OED improvements with World Bank	OED improvements with World Bank
Total spend <b>\$350k</b>	Total spend <b>\$400k</b>

# Oasis Risk Explorer

**Step 1:**  
Choose  
Location  
to Model



**Step 2:**  
Choose your  
hazard, region  
and Selected data



available for Bangladesh and the Ginoza region in Japan. Future ve

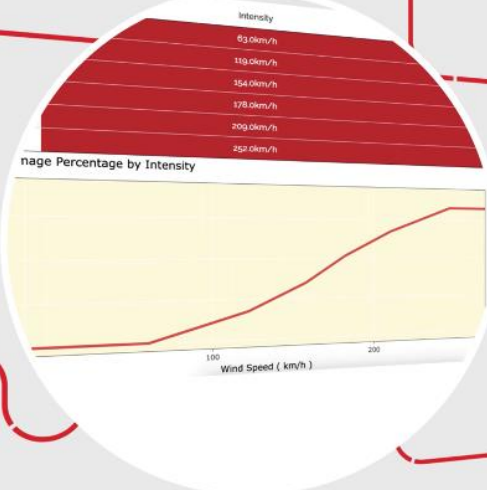
Peril  
Windstorm

Data Source  
IBTIACS Historical Data

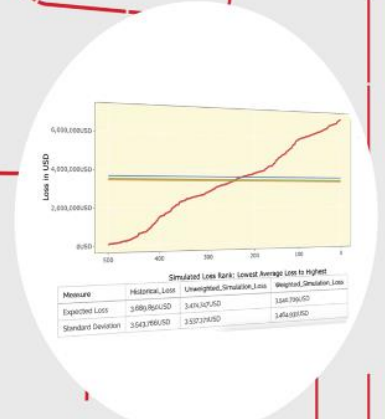
Region  
North West Pacific

North West Pacific is the relevant region for your exposure  
Meteorological Agency  
TOKYO

**STEP 3**  
Assess  
Vulnerability



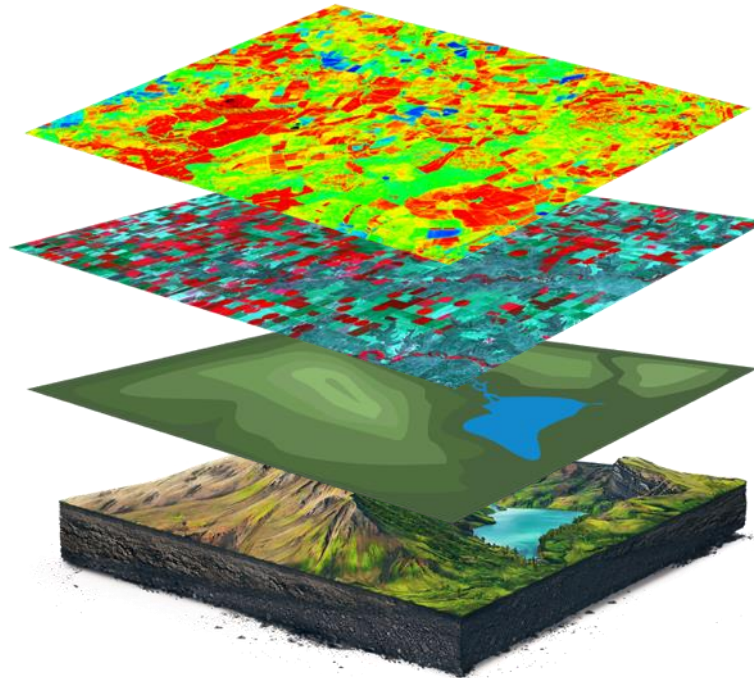
S-S Category	Wind Speed (km)	Loss as Currency
1	119	2,000,000USD
2	154	4,000,000USD
3	179	6,000,000USD
4	209	8,000,000USD
5	253	10,000,000USD



# GLOBAL RESILIENCE INDEX INITIATIVE: OPEN PHYSICAL RISK DATA AND ANALYTICS FOR FINANCE

Finance and investment, IFIs  
government, civil society and firms  
should be able to access and use  
globally consistent, transparent  
acute physical risk data for:

- Every point on the planet
- Covering all material risks
- Present and future



An open platform of high-quality,  
consistent, global hazard, exposure and  
risk data covering material risks:

Combines best-in-class data from  
multiple contributing organisations to  
generate sub-national risk metrics:  
exposures, AALs, EPs

‘Plug and play’ interoperability

Strategically fills gaps: tail risks (acute  
risks), system-level risks, supply chains,  
indirect economic losses

Open standards and transparent  
methods

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

**RMSG**  
**(Risk Modelling Steering Group)**