
Strengthening
Financial Resilience to
Disasters in Asia:
Exploring Regional Solutions
The
ROCKEFELLER
FOUNDATION
Disaster Risk Financing
& Insurance Program
WORLD BANK GROUP

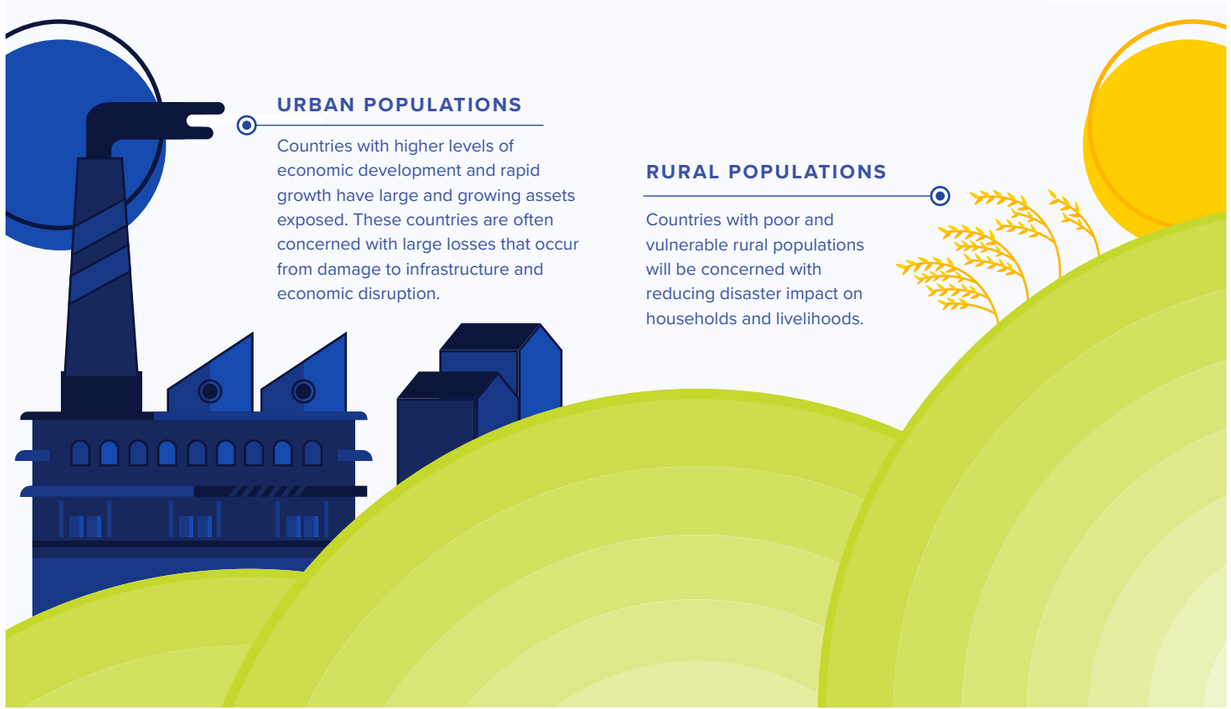
Asia is highly exposed to disaster and climate risks, which can erode welfare and economic gains.

By 2050, the average annual economic losses from Asian flood disasters could surge to $500 billion.

Countries across Asia face many different natural hazards:

Floods, droughts, tropical cyclones, earthquakes, tsunamis, and volcanic eruptions

Countries across Asia are at different stages of development and face different levels of exposure to disaster risks.



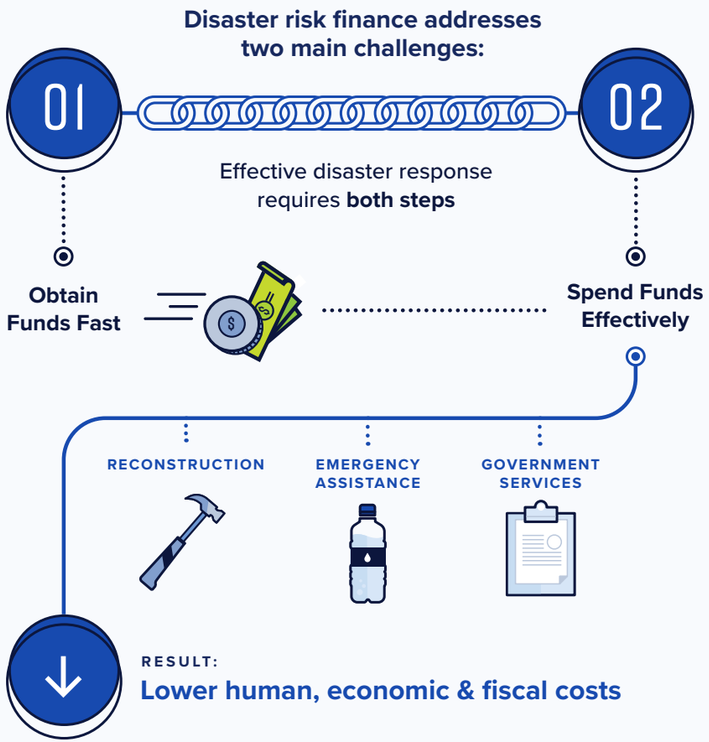
URBAN POPULATIONS

Countries with higher levels of economic development and rapid growth have large and growing assets exposed. These countries are often concerned with large losses that occur from damage to infrastructure and economic disruption.

RURAL POPULATIONS

Countries with poor and vulnerable rural populations will be concerned with reducing disaster impact on households and livelihoods.

Why disaster risk finance?



Disaster risk finance helps countries finance response and reconstruction following a disaster more effectively—minimizing the human, economic, and fiscal costs that increase rapidly when response is delayed or inadequate.

Disaster risk finance can:

- Increase the financial capacity of governments to respond to shocks.
- Reduce the impact of disasters on social and economic development by smoothing shocks—both to government budgets and household spending.
- Protect human development and economic gains and thus contribute to poverty reduction and shared prosperity.

Acting together, countries can create joint mechanisms for disaster risk finance that substantially increase the financial resilience of each participant.

Regional platforms on disaster risk finance confer benefits beyond money:

They serve as forums for **sharing of knowledge** and good practice.

They promote shared **investment in public goods** to support understanding of risk.

They create **political momentum**—driving engagement and progress on better management of disaster and climate shocks.

Policy dialogue supports regional action.

There is increasing political momentum and demand for a joint initiative in regional forums that include Asian countries.

> In order to identify and implement appropriate regional disaster risk financing mechanisms and to help increase insurance penetration, we welcome the establishment of the Working Group on Regional Disaster Risk Financing Solutions for APEC Economies, with the support of the World Bank Group.
>
> 2016 APEC JOINT FINANCE MINISTERIAL STATEMENT

V20 · ASEAN 50 2017 · APEC VIET NAM 2017 · APEC PERU 2016 · APEC PHILIPPINES 2015

Global forums also support emerging regional disaster and climate risk financing solutions.

> ...we welcome the creation of a 'Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions'...The Global Partnership builds on the work of existing platforms... taking into account the key lessons of ongoing work by the World Bank on 'Sovereign Climate and Disaster Risk Pooling...' We encourage multilateral institutions to develop options for innovative climate and disaster risk finance solutions.
>
> G20 HAMBURG CLIMATE AND ENERGY ACTION PLAN FOR GROWTH, ADOPTED AT THE 2017 G20 LEADERS MEETING

InsuResilience · Financing for Development · Sustainable Development Goals · G20 Germany 2017 · Paris2015 COP21-CMP11

What kind of regional risk financing facility does Asia need?

Image credit: Benedikt Signer

01

A regional mechanism needs to respond to country priorities in strengthening financial resilience. In this way it can improve:

RESPONSE FINANCING

Access to rapid disaster response financing (and deployment of funds at the subnational and household levels).

PRIVATE ASSETS

Property catastrophe risk insurance for private assets.

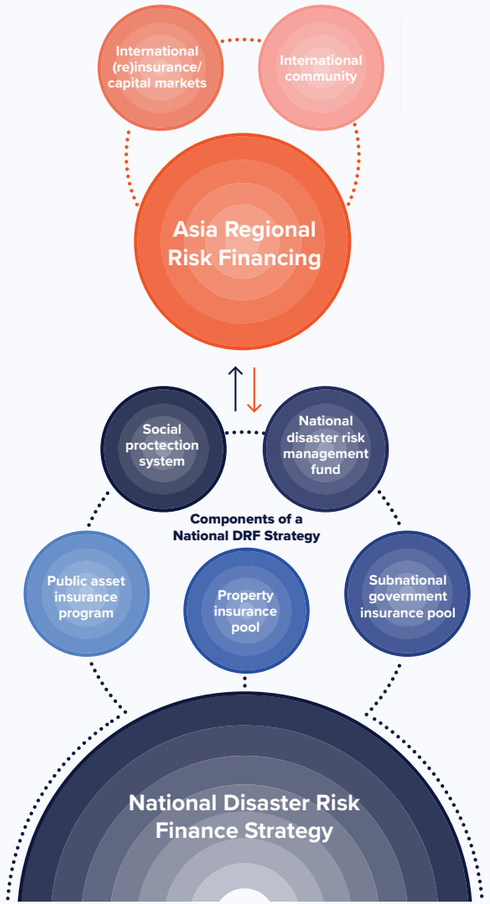
PUBLIC ASSETS

Property catastrophe risk insurance for public assets.

02

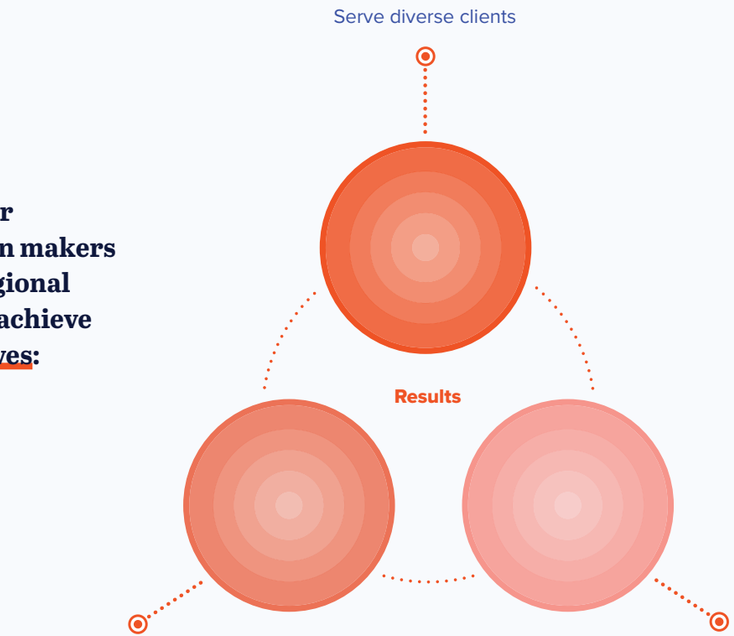
A regional facility for Asia should be integrated in national financial protection strategies.

- Financing mobilized within a regional facility should be connected to mechanisms in-country that disburse funds.
- Financing from such a facility should be only one tool of several used by countries to mobilize money and respond to shocks.



03

To be relevant for financial decision makers across Asia, a regional facility needs to achieve multiple objectives:



04

A regional facility needs to contribute to several complementary outcomes:

Countries **better understand** risk (thanks to standardized risk data).

Countries improve their **financial management** of disaster and climate shocks.

Countries **rely less on disruptive budget** reallocations and uncertain humanitarian assistance.

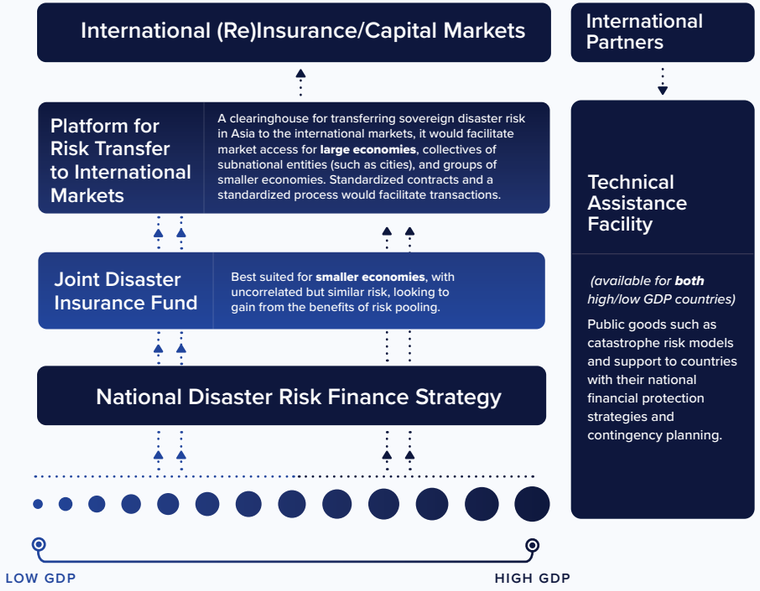
Countries **disburse funds** more promptly and effectively (thanks to contingency planning).

Countries **save money** on financial instruments (thanks to diversification of catastrophe risks).

Countries gain **access** to financial capacity in the international markets.

How can a regional mechanism work in Asia?

- A regional facility will need to account for Asia's diversity—in type of perils, level of development, level of exposure, and participating countries' policy objectives.
- A regional platform that serves as a clearinghouse, provides technical advice, and serves as a policy coordination mechanism will likely work better than a provider offering one specific risk financing solution.
- A transparent, rules-based disbursement mechanism could allow international partners to "pre-commit" post-disaster aid, making the disbursement of funds quicker and more predictable for countries and allowing governments to plan ahead.



Asian Countries by Increasing GDP

Man-made effects of sand mining on water levels at the outlet channel that connects Poyang Lake to the Yangtze river in East China. **Source:** NASA/Landsat 8

Catastrophe risk models and risk data are needed to inform financial decisions and instruments.

High-resolution capture of stream-flows and sediments at a river delta ecosystem. | **Source:** ESA/Sentinel 2

Flood map of Barguna district, Barisal Division, Bangladesh as captured by the Copernicus constellation in May 2016. | **Source:** ESA/Sentinel 1A

What are the current gaps in disaster risk data in Asia?

A review of existing catastrophe risk models and sources for real-time hazard data in Asia has found:

- Limited **hazard information**
- Limited full **flood models** for all but the most developed insurance markets
- A need to develop new **flood indices** based on available live data that allow for the measurement of flood severity and frequency
- A lack of **drought models**, and the need to validate existing drought indices with historical data to ensure they are accurate
- A lack of **earthquake models** for lower-income countries

A focus on flood

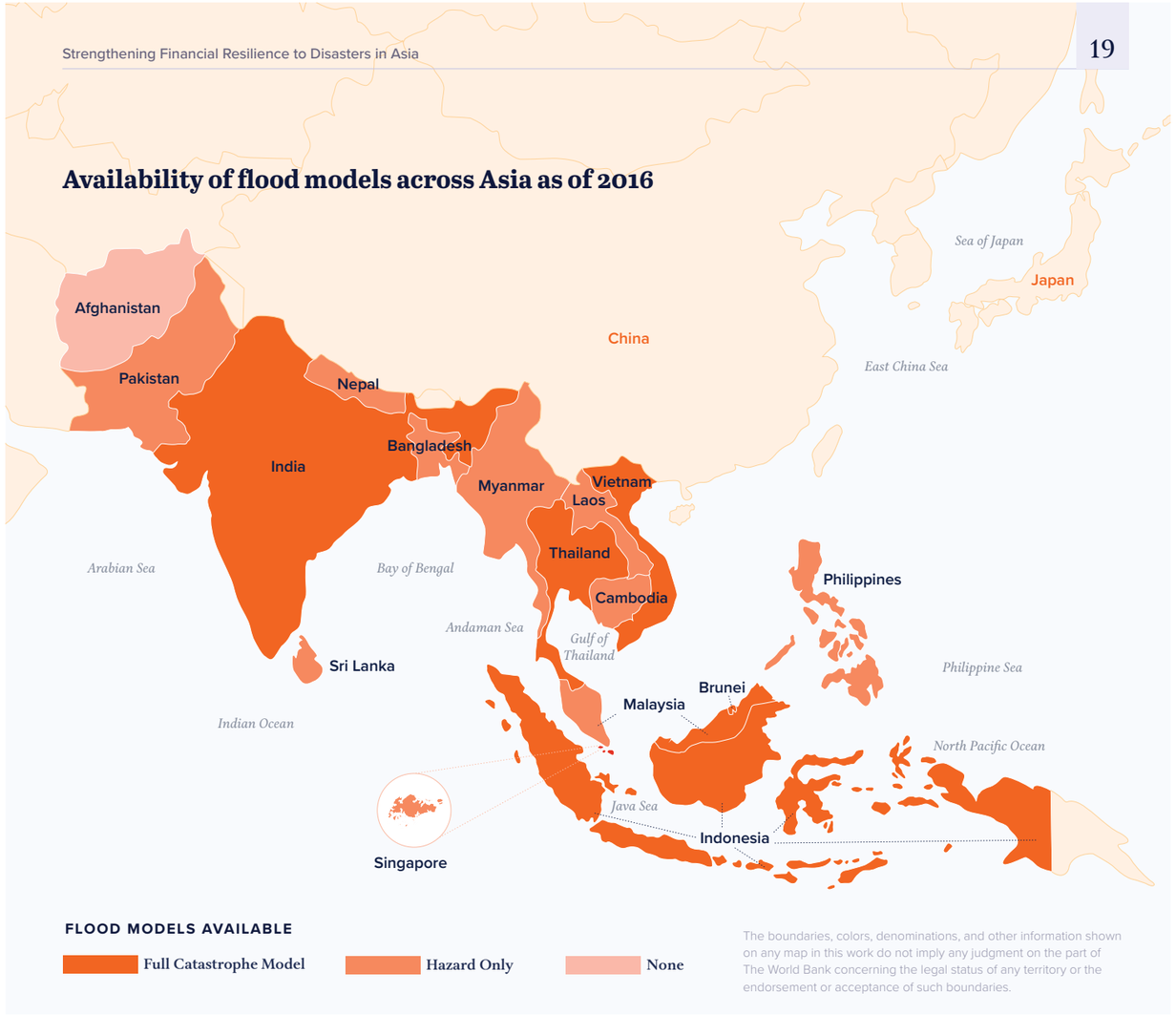
Flood risk models are available in most countries, or are currently being developed.

Additional investments are needed to turn existing hazard models into full models that estimate damage and losses.

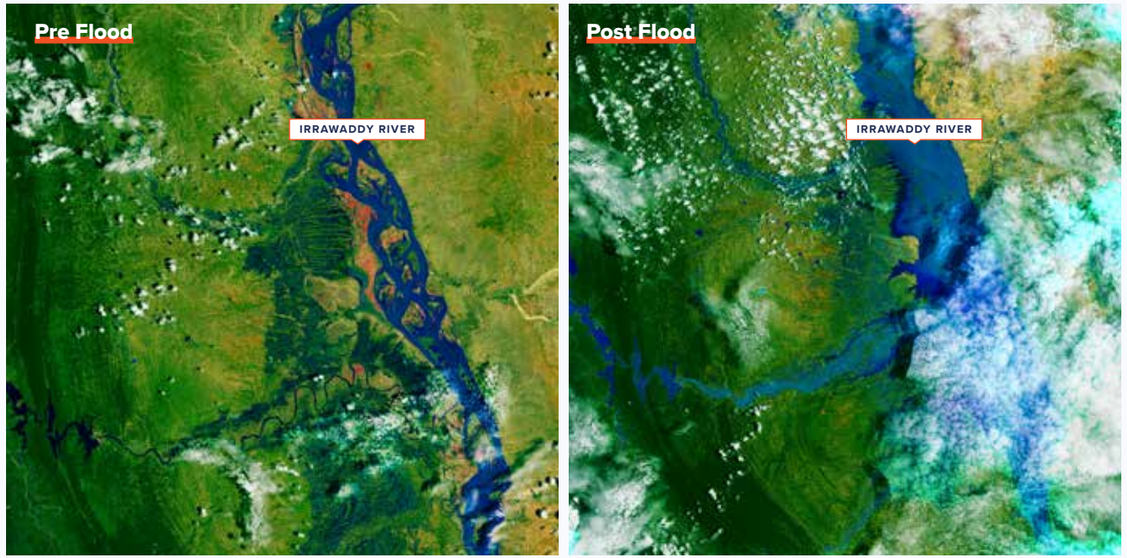
Satellite data are the most promising source of near real-time information on rainfall and flood extent, with multiple international agencies producing appropriate data.

To date, insurance markets have not made much use of satellite flood monitoring data for financial products. To use the full potential of satellite data for risk transfer mechanisms, extensive technical work is needed to develop and evaluate risk models and indices against historical impacts.

Availability of flood models across Asia as of 2016



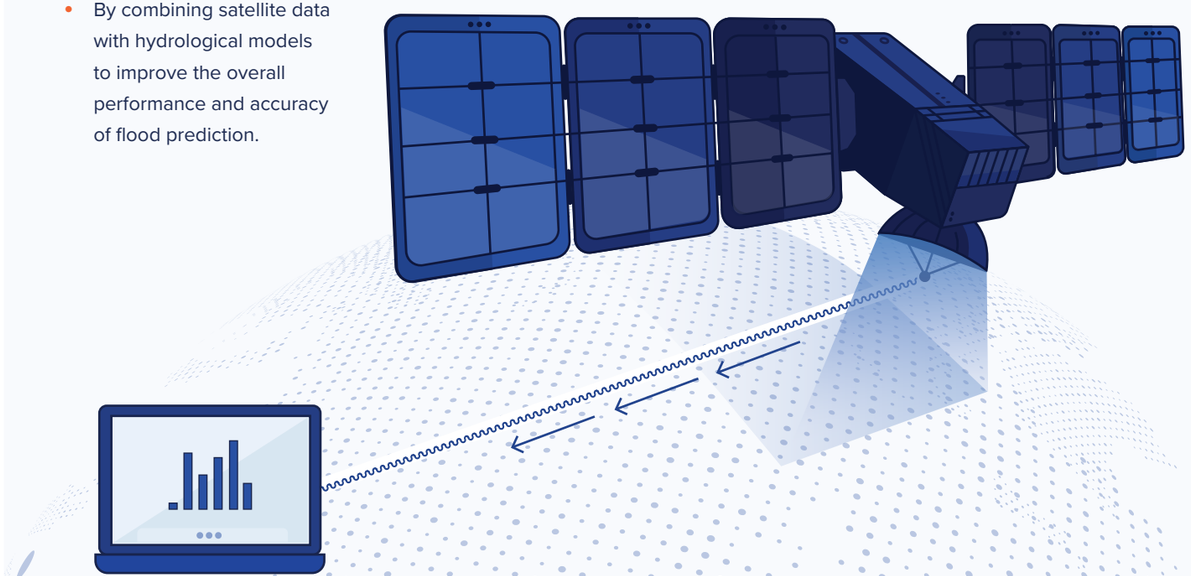
New satellite technology can provide near real-time flood monitoring and inform financial decisions for disaster response.



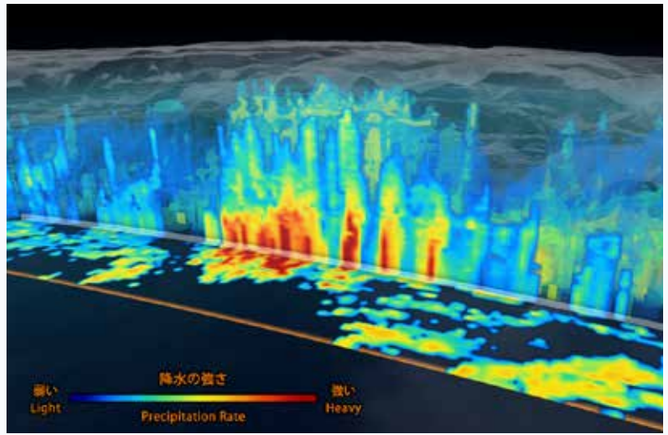
Magway Region of Burma (Myanmar), showing farming areas inundated by the August 2015 flooding event that affected many rivers, including the Irrawaddy. | **Source:** NASA/Landsat 8

How can satellites help countries understand flood impacts?

- By using the latest space technologies and imagery processing to observe water surface extent in near real-time.
- By combining satellite data with hydrological models to improve the overall performance and accuracy of flood prediction.



How do satellite-based flood assessments support development and build resilience?



Flood map of the 2015 flooding in Myanmar. Source: Modified Copernicus Sentinel data (2015)/e-GEOS/JRC/EU-EC/ESA

- By offering near real-time flood monitoring for early warning.
- By informing rapid disaster response financing and insurance mechanisms.
- By helping in rapid estimation of financial impacts to inform funding for response and reconstruction.
- By informing longer-term fiscal planning through estimation of future potential economic impacts from flood.

The World Bank's Disaster Risk Financing and Insurance Program (DRFIP) helps developing countries manage the potentially high cost from disasters and climate shocks. DRFIP provides analytical and advisory services, financial services, and convening services to over 50 countries worldwide to support the development and implementation of comprehensive financial protection strategies against climate and disaster risks.
www.worldbank.org/drfi

The Rockefeller Foundation's mission—unchanged since 1913—is to promote the well-being of humanity throughout the world. Today, we pursue this mission through dual goals: advancing inclusive economies that expand opportunities for more broadly shared prosperity, and building resilience by helping people, communities and institutions prepare for, withstand, and emerge stronger from acute shocks and chronic stresses. Together with partners and grantees, The Rockefeller Foundation strives to catalyze and scale transformative innovations, create unlikely partnerships that span sectors, and take risks others cannot.
www.rockefellerfoundation.org

Learn more about Disaster Risk Finance
www.financialprotectionforum.org


Strengthening
Financial Resilience to
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