

SCIENCE FOR RESILIENCE

OPPORTUNITIES AND POLICIES FOR CLIMATE INNOVATORS

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Debunking Common Misconceptions about climate and disaster resilience

The Philippines ranks 1st out of 193 countries as the country most vulnerable to the impacts of disasters and climate change since 2022.



TRUE

FALSE

DOST

Debunking Common Misconceptions about climate and disaster resilience

DISASTERS ARE NATURAL.

TRUE



FALSE

DOST

Debunking Common Misconceptions about climate and disaster resilience

The Philippines has no national policies or plans to support the development and use of climate adaptation technologies.



TRUE

FALSE

DOST



Why is Philippines at risk?

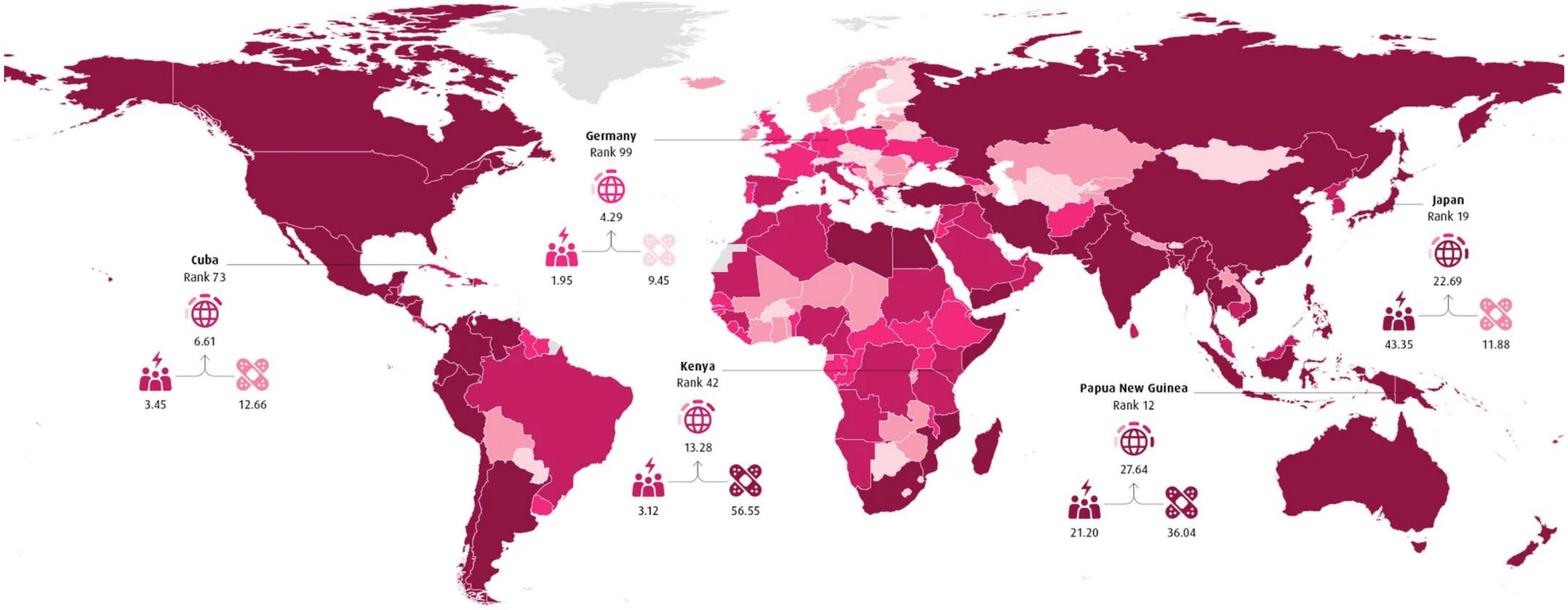


WORLD RISK INDEX 2026

Overall Risk					Storm Risk	
CLASSIFICATION	WORLDRISKINDEX	EXPOSURE	VULNERABILITY	STORMRISKINDEX	CLASSIFICATION
very low	0.00 – 2.07	0.00 – 0.22	0.00 – 10.09	0.00 – 0.38	very low
low	2.08 – 3.35	0.23 – 0.74	10.10 – 15.97	0.39 – 0.50	low
medium	3.36 – 6.31	0.75 – 2.13	15.98 – 23.40	0.51 – 0.82	medium
high	6.32 – 13.72	2.14 – 8.76	23.41 – 32.89	0.83 – 6.56	high
very high	13.73 – 100.00	8.77 – 100.00	32.90 – 100.00	6.57 – 100.00	very high

Details on the methodology of the WorldRiskIndex, the StormRiskIndex, and their dimensions are available at https://weltrisikobericht.de/worldriskreport. Only countries that are United Nations member states are considered.

RANK	COUNTRY	WORLDRISKINDEX	EXPOSURE	VULNERABILITY	STORM-RISKINDEX	STORM-RISKRANK
1	Philippines	46.69	40.76	53.49	69.27	1
2	India	44.97	40.83	49.54	11.99	14
3	Indonesia	44.63	39.78	50.08	11.69	15
4	Colombia	39.80	31.59	50.14	10.88	17
5	Mexico	39.18	50.69	30.28	47.40	2
6	Myanmar	37.51	22.44	62.70	13.39	13
7	Mozambique	30.92	14.69	65.09	13.72	12
8	Russian Federation	30.58	28.37	32.97	8.86	23
9	China	29.54	71.06	12.28	30.38	6
10	Somalia	29.12	11.94	71.00	0.84	71

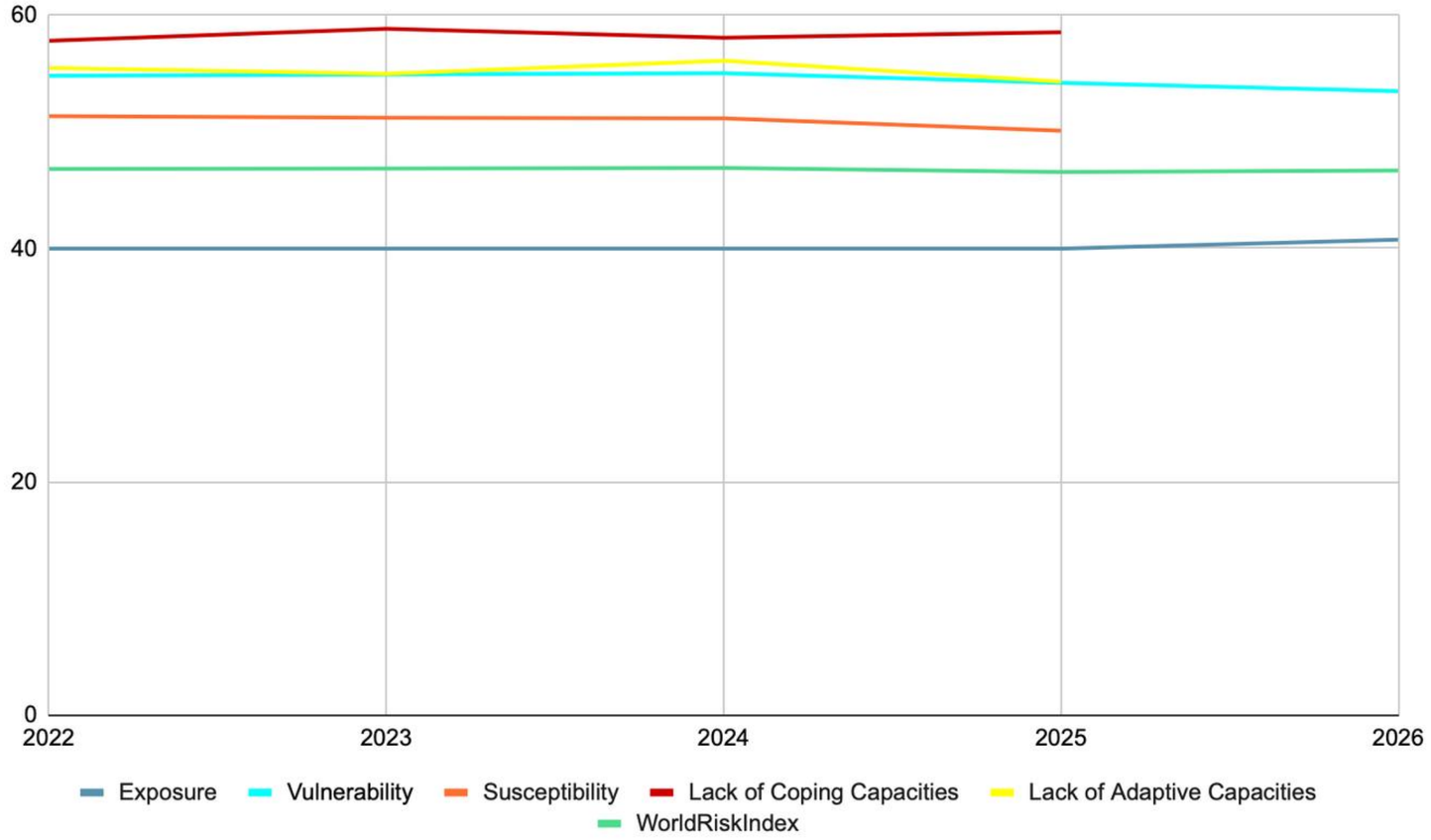


WORLDRISKINDEX				EXPOSURE				VULNERABILITY			
very low	0.00	–	2.07	very low	0.00	–	0.22	very low	0.00	–	10.09
low	2.08	–	3.35	low	0.23	–	0.74	low	10.10	–	15.97
medium	3.36	–	6.31	medium	0.75	–	2.13	medium	15.98	–	23.40
high	6.32	–	13.72	high	2.14	–	8.76	high	23.41	–	32.89
very high	13.73	–	100.00	very high	8.77	–	100.00	very high	32.90	–	100.00
no data				no data				no data			

Since 2022, fixed thresholds have been used to classify countries for the WorldRiskIndex and its components, enabling analyses of medium- and long-term trends. For each dimension and for the WorldRiskIndex, the medians of the quintile boundaries are calculated from the results of the past 20 years. Data sources: IFHV's own calculations based on CReSIS, EMDAT, FAO, GFDRR, IHME, IDMC, JRC, IMF, ILO, UCDP, UNESCO, UNHCR, UNDRR, WHO, World Bank, WorldPop, WID; additional information at https://weltrisikobericht.de/worldriskreport

THE 10 COUNTRIES WITH HIGHEST RISK		THE 10 COUNTRIES WITH HIGHEST EXPOSURE		THE 10 COUNTRIES WITH HIGHEST VULNERABILITY	
1 Philippines	46.69	1 China	71.06	1 Somalia	71.00
2 India	44.97	2 Mexico	50.69	2 Central African Republic	70.89
3 Indonesia	44.63	3 Japan	43.35	3 Chad	69.34
4 Colombia	39.80	4 India	40.83	4 Sudan	69.03
5 Mexico	39.18	5 Philippines	40.76	5 South Sudan	68.66
6 Myanmar	37.51	6 Indonesia	39.78	6 Democratic Republic of Congo	68.53
7 Mozambique	30.92	6 United States of America	39.78	7 Yemen	67.75
8 Russian Federation	30.58	8 Australia	32.11	8 Afghanistan	67.36
9 China	29.54	9 Colombia	31.59	9 Niger	66.63
10 Somalia	29.12	10 Russian Federation	28.37	10 Ethiopia	66.33

WORLD RISK INDEX

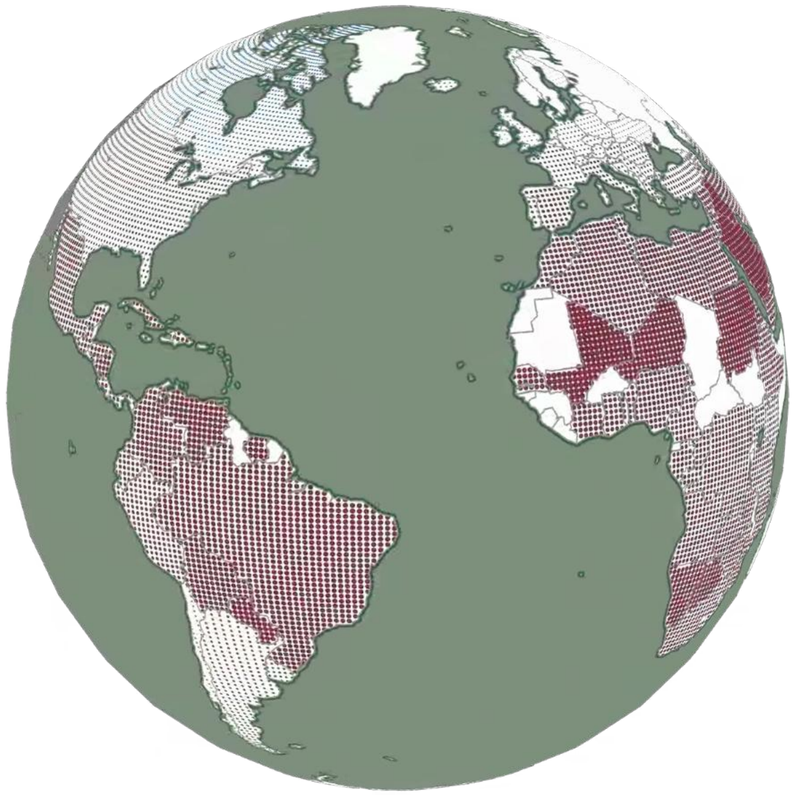




What the report tells us:

1. Our **geography** made us exposed to natural hazards.
2. **Disaster risks** are partly caused by natural hazards but it also stems from the vulnerability and lack of coping and adaptive capacity of the people.
3. Increased **disparity** and socioeconomic **inequality.**

UNDRR Global Assessment Report 2025, Resilience Pays



US$202 billion

direct disaster losses cost the globe

US$2.3 trillion

broader costs including cascading and ecosystem impacts



https://www.undrr.org/gar/gar2025

Prevention and mitigation save lives and protect livelihoods.



It is about **understanding risk** and ensuring that **policies, plans and budget are risk-informed** and provide an enabling environment for sustained actions aimed at **addressing current and reducing future risks**. It is about **access, use and application of science** in risk reduction and management work – **from assessment to early warning actions.**

STRUCTURAL

(Physical/Engineering Measures)

- Flood Control Systems – levees, dikes, drainage systems, pumping stations to reduce flooding.
- Landslide and slope protection, nature based solutions,
- Resilient Infrastructure – hazard-proof schools, hospitals, evacuation centers, bridges, and housing.
- Monitoring Facilities – rain gauges, water-level sensors, Doppler radars, and seismic stations.
- Retrofitting and strengthening homes
- Community drainage improvements

NON-STRUCTURAL

(Policy/Knowledge/Community Measures)

- Early Warning Systems & Forecasts – PAGASA weather bulletins, PHIVOLCS advisories, mobile alerts.
- Hazard Mapping & Risk Assessment Tools – HazardHunterPH, community-based risk maps, land-use planning.
- Capacity Building & Governance – DRRM training, drills, education campaigns, and transparent disaster funds.
- Building Regulations Enforcement
- Environmental policies and public education

Philippines and Climate and Disaster Resilience Policies















The Philippine Context –

Climate Change Act of 2009 (RA 9729)

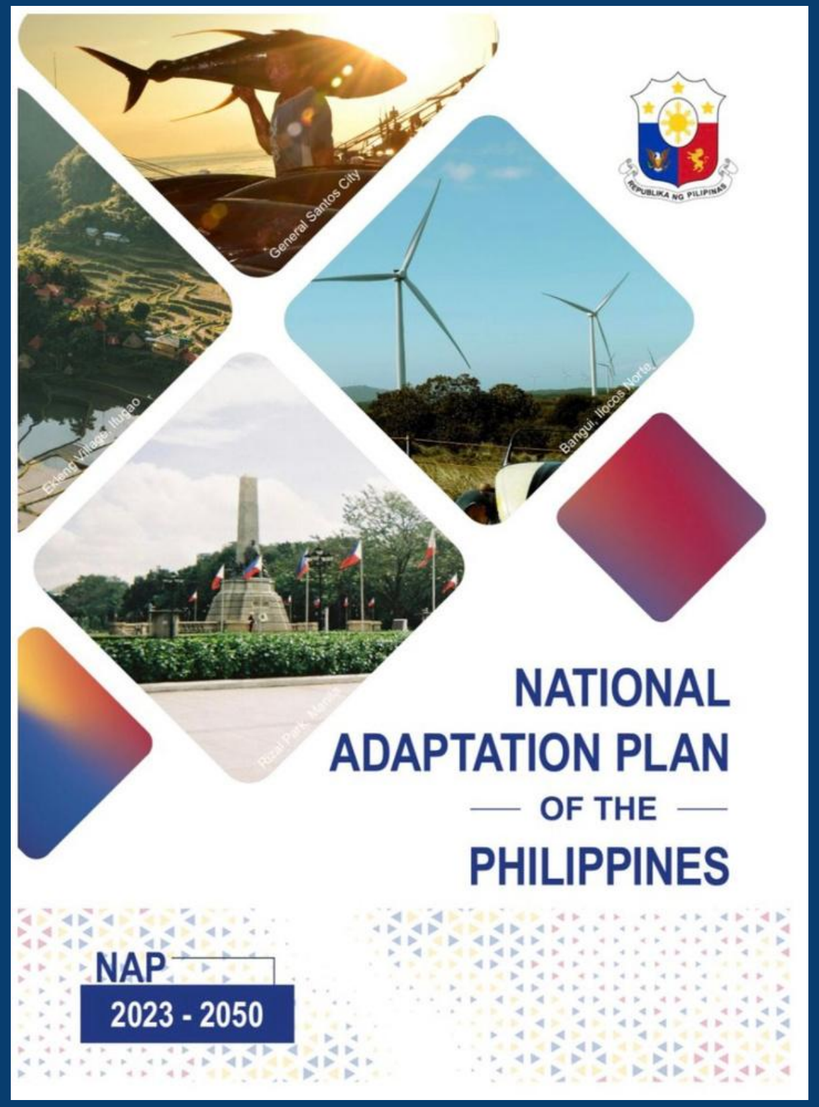
- Created the **Climate Change Commission.**
- Mandated the formulation of the **National Climate Change Action Plan (NCCAP)**.

Disaster Risk Reduction and Management Act of 2010 (RA 10121)

- Created the **National Disaster Risk Reduction and Management Council**
- Mandated the formulation of the **National Disaster Risk Reduction and Management Plan**

Other relevant policies

- National Framework Strategy on Climate Change (NFSCC)
- Nationally Determined Contribution (NDC)
- Philippine Development Plan (PDP) and Ambisyon Natin 2040



REPUBLIC OF THE PHILIPPINES
Congress of the Philippines
Metro Manila

[REPUBLIC ACT NO. 12019, August 28, 2024]

AN ACT GRANTING JURIDICAL PERSONALITY AND LEGAL CAPACITY TO THE BOARD OF THE FUND FOR RESPONDING TO LOSS AND DAMAGE DUE TO CLIMATE CHANGE

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

Section 1. *Short Title.* - This Act shall be known and referred to as "The Loss and Damage Fund Board Act".

Section 2. *Declaration of Policy.* - It is the policy of the State to protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.

As a party to the United National Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, the State lauds the creation of a fund for responding to loss and damage (Fund) under the Decision 2/CMA.4 of the Conference of Parties serving as the meeting of Parties to the Paris Agreement (CMA) and during the 27th Conference of Parties (COP) to the UNFCC under Decision 2/CP.27 of the COP, and its operationalization during the 28th COP under COP Decision 1/CP.28 and CMA Decision 5/CMA.5. The State resolutely welcomes the Fund's establishment to finance and assist the most vulnerable developing countries response and recovery from losses and damages caused by climate change.

To advance climate and disaster risk resilience, the State shall take a whole-of-government approach in creating and implementing effective policy frameworks and mobilizing broad and innovative sources of climate financing to address loss and damage.

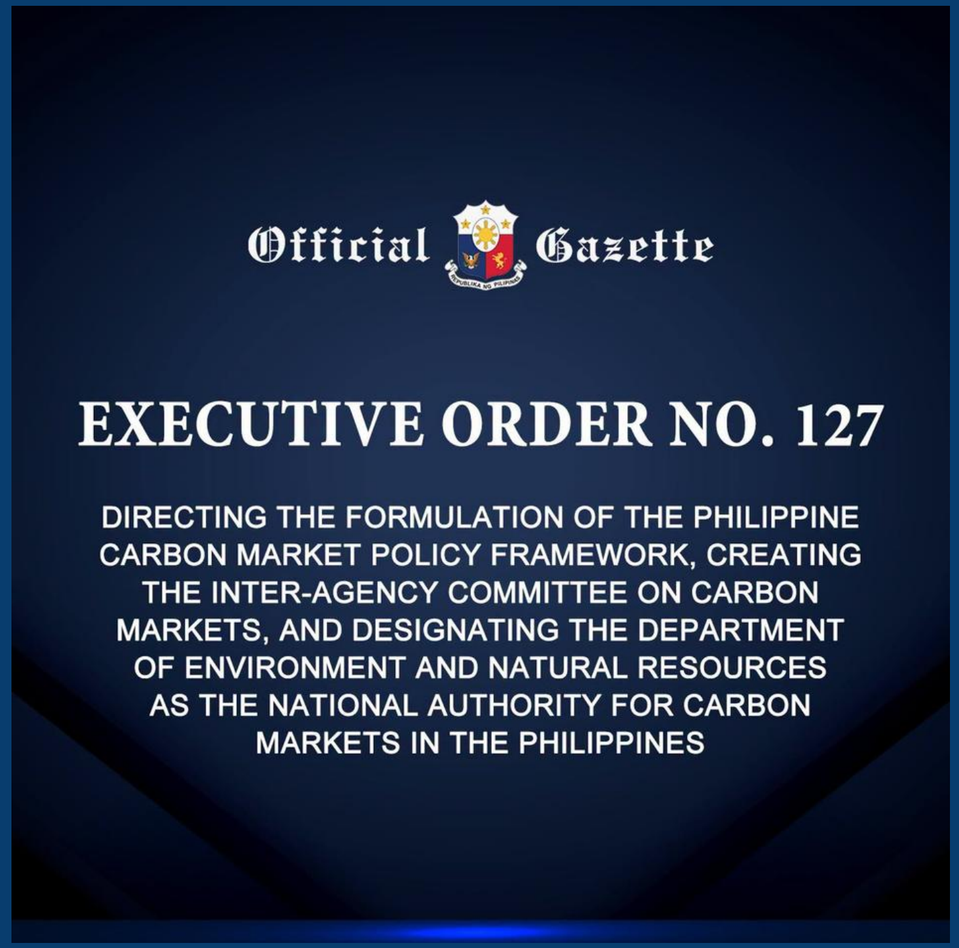
To accelerate access to critical climate finance and investments for future-proofing the economy and ensuring sustainable and inclusive growth for all Filipinos, the State supports the hosting of the governing Board of the Fund in the Philippines. Towards this end, the State recognizes the need to grant juridical personality and legal capacity to the Board to enable it to discharge its roles and functions.

Section 3. *Juridical Personality and Legal Capacity of the Board.* - The Board, as the governing body of the Fund, shall have juridical personality with full legal capacity to:

(a) Contract;

(b) Acquire and dispose of immovable and movable property;


GPPB RESOLUTION NO. 04-2026
APPROVING THE GUIDELINES FOR DIRECT PROCUREMENT FOR SCIENCE, TECHNOLOGY, AND INNOVATION
Date of Approval: 15 January 2026
Date Published: 20 March 2026
Date of Effectivity: 04 April 2026
LINK: https://www.gppb.gov.ph/resolutions/
www.gppb.gov.ph
Government Procurement PH
training@gppb.gov.ph


Official Gazette
EXECUTIVE ORDER NO. 127
DIRECTING THE FORMULATION OF THE PHILIPPINE CARBON MARKET POLICY FRAMEWORK, CREATING THE INTER-AGENCY COMMITTEE ON CARBON MARKETS, AND DESIGNATING THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES AS THE NATIONAL AUTHORITY FOR CARBON MARKETS IN THE PHILIPPINES

THE POLICY LANDSCAPE

From Climate Policy to Climate-Tech Innovation

The Philippines has established a foundation for climate technology through its laws, national plans, and international commitments.

The challenge: Turning policy into opportunity

How do we translate policy commitments into a clear pathway from **research and invention to commercialization, adoption, and scale?**

Develop

R&D, prototyping, and testing

Enable

Funding, incentives, and investment

Connect

Partnerships, standards, and procurement

Scale

Market access and real-world deployment

The question for innovators

Does the policy ecosystem enable climate-tech solutions to move beyond ideas and reach the communities and markets that need them?

Utilization of LDRRMF for CY 2023

1,533 LGUs

₱43.09 billion were allocated in 2023

39% Utilization Rate

₱33.92 billion was utilized in 2023

₱87.16 billion

Total available funds in 2023

21% increase

₱53.24 billion were unutilized

Utilization of LDRRMF for CY 2024

1,566 LGUs

₱49.14 billion were allocated in 2024

39% Utilization Rate

₱44.90 billion was utilized in 2024

₱101.15 billion

Total available funds in 2024

5.23% increase

₱56.51 billion were unutilized

Source: Commission on Audit, Consolidated Report on the Audit of the DRRM Funds for the Year Ended December 31, 2024, LDRRMF section,Table 7.

Indicator	CY 2023	CY 2024
LGUs	1,533	1,566
Annual allocation	₱43.09B	₱49.14B
Total available funds	₱87.16B	₱101.51B
Funds utilized	₱33.92B	₱44.90B
Utilization rate	39.00%	44.23%
Unutilized balance	₱53.24B	₱56.61B

Key Challenges in Local DRRM Fund Utilization

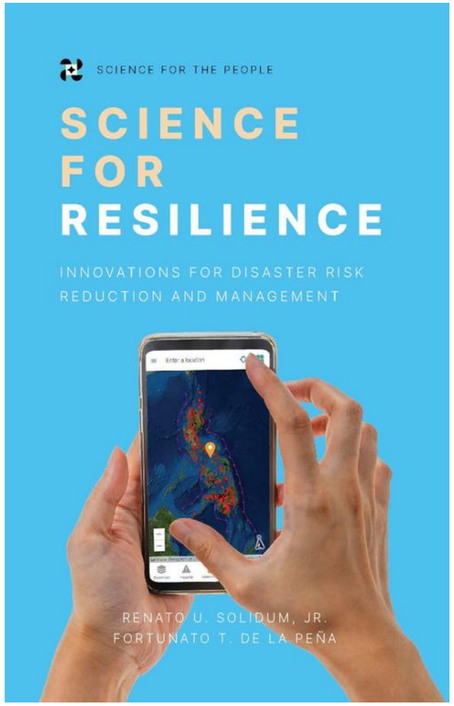
1. **Unutilized LDRRMF**: Significant fund balances raise questions about the barriers to timely and effective implementation of risk-reduction projects.
2. **Prevention and mitigation remain underprioritized:** These interventions are often perceived as costly, despite their potential to reduce long-term disaster losses.
3. L**imited integration of climate resilience and S&T:** Both are cross-cutting priorities that requirestronger integration into local planning, budgeting, and project implementation.
4. **Measuring effectiveness:** Fund utilization alone is insufficient; success should also be measuredthrough reduced disaster losses, lower vulnerability, and improved community resilience.
5. **Governance and institutional capacity:** Leadership priorities, local political dynamics, and thecapacity and continuity of LDRRMOs can influence funding decisions and implementation.



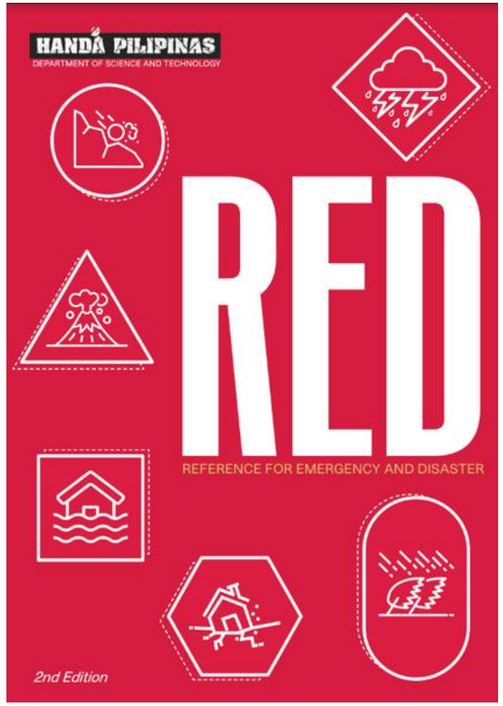
Regional Platforms:

ASEAN Science, Technology and Innovation Platform for Climate and Disaster Resilience

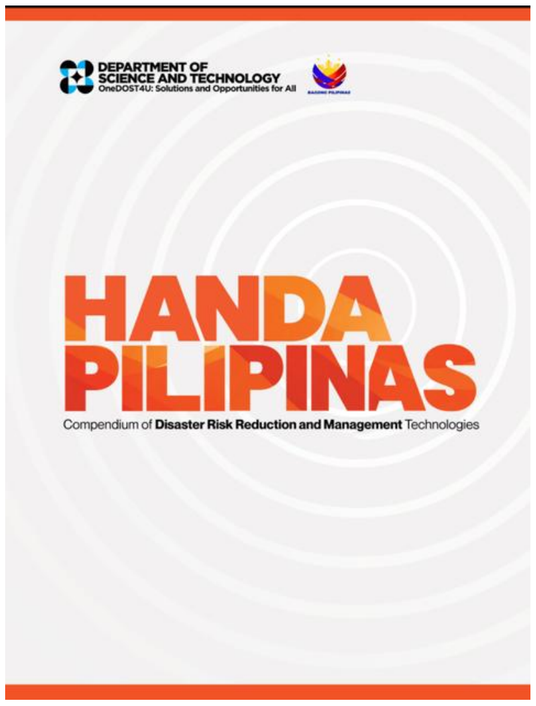
Asia Pacific Economic Cooperation- Business Advisory Council (ABAC) Philippines


SCIENCE FOR THE PEOPLE
SCIENCE FOR RESILIENCE
INNOVATIONS FOR DISASTER RISK REDUCTION AND MANAGEMENT
RENATO U. SOLIDUM, JR.
FORTUNATO T. DE LA PEÑA


Department of Science and Technology
DOST INNOVATIONS
Web and Mobile Applications for Disaster Risk Reduction and Management
2023

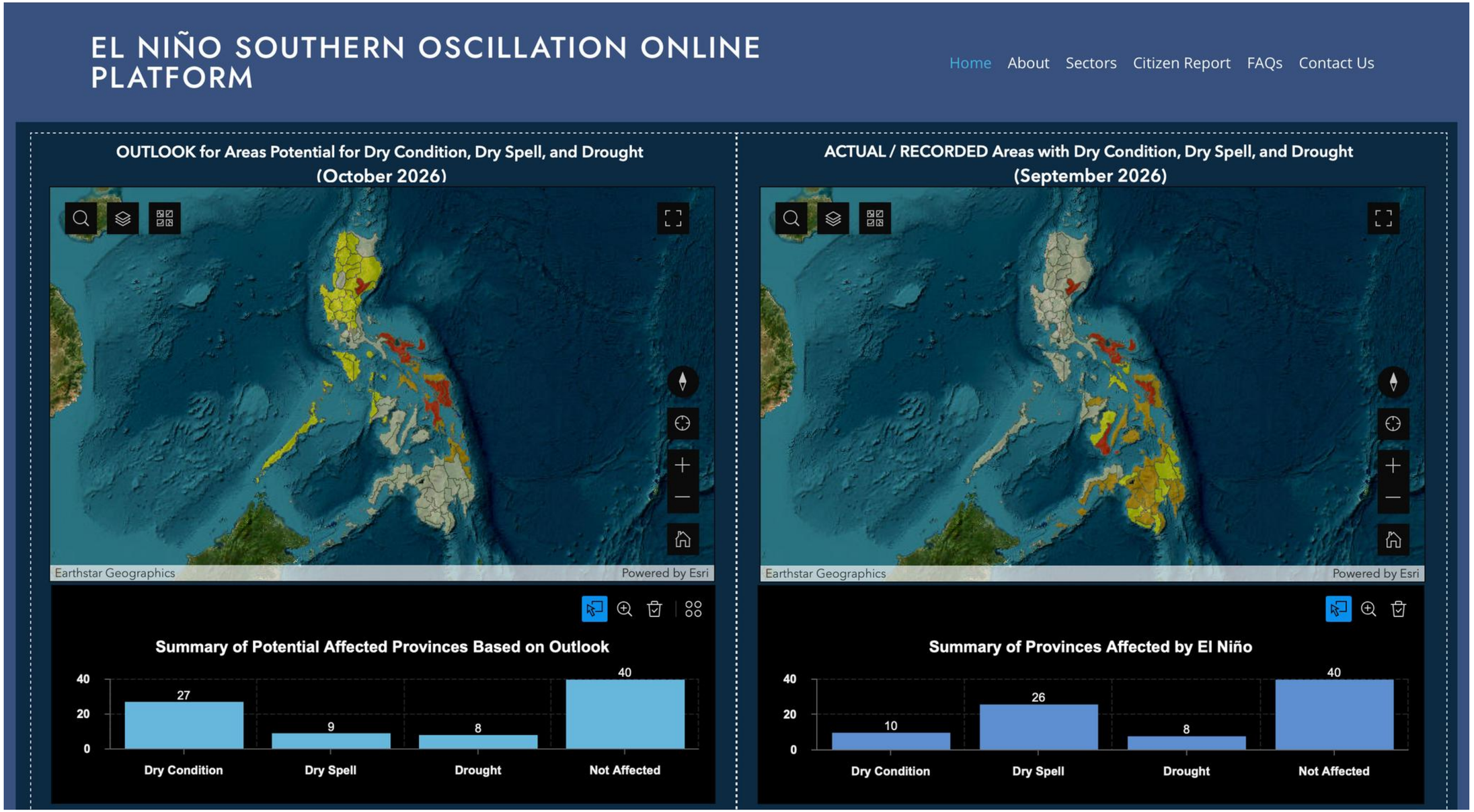

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MARAMING SALAMAT!



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