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Building Resilience through
Institutions, Communities & Knowledge

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PROCEEDINGS

Building Resilience through Institutions, Communities & Knowledge

Proceedings from the 2026 BRICK Knowledge Exchange Event
Bucharest, Romania · 24–27 March 2026

From rubble to recovery, one brick at a time.

EU Technical Assistance Financing Facility (TAFF) for Disaster Prevention and Preparedness



Funded by
the European Union



GFDRR
Global Facility for Disaster Reduction and Recovery



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PROCEEDINGS

Building Resilience through Institutions, Communities & Knowledge

Proceedings from the 2026 BRICK Knowledge Exchange Event

The purpose of this material is to provide an overview of the BRICK 2026 Knowledge Exchange Event, capturing key knowledge shared and lessons learned, and recording key conclusions and recommendations. The findings, interpretations, and conclusions expressed in this material are those of the event sessions' contributors and presenters. They do not reflect the views of the World Bank Group, the Global Facility for Disaster Reduction and Recovery (GFDRR), the European Union, or the Government of Romania.

Bucharest, August 2026.

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The World Bank · GFDRR · Government of Romania, Department for Emergency Situations (DSU). Funded by the European Union under the Union Civil Protection Mechanism, through the Technical Assistance Financing Facility (TAFF).



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Abbreviations

4RF	Resilient Recovery, Rehabilitation and Reconstruction Framework (Pakistan)
AFAD	Disaster & Emergency Management Presidency (Türkiye)
ANSR	National Association of the Deaf in Romania
BBB	Build Back Better
BRI	Building Research Institute (Japan)
Cat DDO	Catastrophe Deferred Drawdown Option
CERP/CERC	Contingent Emergency Response Project / Component
CEST	Community Empowerment through Science and Technology (Philippines)
CMISU	Integrated Municipal Emergency Centre (Bucharest)
CNCCI	National Command and Coordination Centre for Interventions (Romania)
CPRT	Crisis Preparedness and Response Toolkit
DaLA	Damage and Loss Assessment
DCAFF	Disaster & Climate Adaptation Financing Framework
DG ECHO	DG for European Civil Protection & Humanitarian Aid Ops
DMAT	Disaster Medical Assistance Team (Japan)
DOST	Department of Science and Technology (Philippines)
DRF / DRFI	Disaster Risk Finance / Financing and Insurance
DRIP	Disaster Resilience Improvement Program (ADB)
DRM / DRR	Disaster Risk Management / Reduction
DSU	Department for Emergency Situations (Romania)
EU	European Union
EW4All	Early Warnings for All
EWS	Early Warning System
GDCA	Directorate General of Construction Works (Türkiye)
GDP	Gross Domestic Product
GeoRiskPH	Geospatial risk platform (Philippines)
GFDRR	Global Facility for Disaster Reduction and Recovery
GIES	General Inspectorate for Emergency Situations (Romania)

GRADE	Global Rapid Post-Disaster Damage Estimation
IBRD	International Bank for Reconstruction and Development
IGSU	General Inspectorate for Emergency Situations (Romania)
ISUBIF	Bucharest-Ilfov Inspectorate for Emergency Situations
JICA	Japan International Cooperation Agency
LGU	Local Government Unit (Philippines)
NG112	Next Generation 112
PAGASA	Philippine Atmospheric, Geophysical & Astronomical Admin.
PDNA	Post-Disaster Needs Assessment
PDSL	Post-Disaster Standby Loan (JICA)
PEMEA	Pan-European Mobile Emergency Application
RAPID	Romanian Assistance for Post-Disaster Improvement & Dev.
RDNA	Rapid Damage and Needs Assessment
RO-ALERT	Romania's cell-broadcast public warning system
RRO	Rapid Response Option
RTT	Real-Time Text
SDRM	Strengthening Disaster Risk Management Project (Romania)
SMURD	Mobile Emergency Service for Resuscitation and Extrication (Romania)
SNUAU	National Emergency Call System (Romania, 112)
STS	Special Telecommunications Service (Romania)
TAFF	Technical Assistance Financing Facility
TERRA	Türkiye Earthquakes Recovery & Reconstruction Assessment
ToT	Training of Trainers
UCPM	Union Civil Protection Mechanism
UNDP	United Nations Development Programme
UN ECLAC	United Nations Economic Commission for Latin America and the Caribbean
WB	World Bank
WEA	Wireless Emergency Alerts

Executive summary

The BRICK 2026 Knowledge Exchange Event was organized as part of the Romanian Assistance for Post-Disaster Improvement and Development (RAPID) Project, financed under the Technical Assistance Financing Facility for Disaster Prevention and Preparedness (TAFF). The event took place in Bucharest from 24 to 27 March 2026, bringing together more than 100 practitioners and experts from across Europe and Asia to share lessons on disaster recovery, emergency preparedness and response, and how to put the right “bricks” in place for more resilient societies. Designed around the concept of ‘Building Resilience through Institutions, Communities and Knowledge’, the event offered a platform for peer-to-peer learning, drawing lessons for current and future recovery efforts and showcasing knowledge developed through activities implemented through TAFF.

TAFF

Technical Assistance Financing Facility for Disaster Prevention and Preparedness established in 2024 is financed by the European Union (EU) and managed by the Global Facility for Disaster Reduction and Recovery (GFDRR). It strengthens the knowledge and capacities of UCPM countries for disaster prevention and preparedness through three pillars: institutional capacity, smart investments and the knowledge base.

RAPID

Romanian Assistance for Post-Disaster Improvement and Development (RAPID). Implemented by the World Bank with Romania’s Department for Emergency Situations (DSU) under the Ministry of Internal Affairs, with EU financing through TAFF (July 2024 – February 2027). RAPID aims to strengthen civil protection capacity for inclusive response and recovery and improve Romania’s disaster recovery framework.

Representatives of government institutions, civil protection agencies, civil society and international organizations from eight countries such as the Philippines, Türkiye, Japan, Albania, Montenegro, the Republic of Moldova, Serbia and Romania took part in four days of plenary sessions, panels and field visits, with strong multi-sector engagement.

100+

PARTICIPANTS

23

SPEAKERS

8

COUNTRIES

5

FIELD VISITS

The event was opened with welcoming remarks from **Anna Akhalkatsi**, Division Director for European Union Countries at the World Bank; **Florin Zaharia**, State Secretary at Romania’s Ministry of Finance; **Major General Marius Dogeanu**, Head of the Civil Protection Directorate within Romania’s Department for Emergency Situations; **Dr. Renato U. Solidum, Jr.**, Secretary of the Department of Science and Technology of the Philippines (DOST), and Christian Aagaard,

of the European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO).



Opening session of the BRICK 2026 Knowledge Exchange Event, Bucharest, 24 March 2026.

The BRICK 2026 Knowledge Exchange Event brought together more than 100 practitioners from eight countries to answer a deceptively simple question: ***what must be in place before a disaster strikes, for disaster recovery to be effective, inclusive and sustainable in the long-term?***

Across four days, the sessions helped move from the 'why' of disaster recovery to the 'how':

Day 1 established the foundations of recovery: (i) recovery must be planned before a disaster strikes (for example, the Philippines trained 2,300+ officials and enabled 500 local governments to prepare recovery plans in advance); (ii) recovery is multistakeholder by nature (for example, Türkiye's response to the 2023 earthquakes evacuated 3.5 million people and sheltered 2.5 million in 350 tent cities through the joint effort of various agencies and organizations); and (iii) early warning plays an essential role for recovery processes (for example, to help illustrate this, Romania presented its four EW4All pillars approach to the RO-ALERT cell broadcast).

Day 2 turned to the 'machinery' of recovery: matching assessment tools to decision-making. For example, the World Bank Global Rapid Post-Disaster Damage Estimation (GRADE) methodology delivers estimates within two weeks after a disaster at 88–90% accuracy, while five successive Rapid Damage and Needs Assessments (RDNAs) tracked Ukraine's needs to US\$ 587.7 billion. Housing reconstruction, the largest single challenge across countries affected by disasters, was met by Türkiye at extraordinary scale (155,000 units in under two years) following the Kahramanmaraş earthquakes in February 2023, as well as by Japan through a solid legal framework in place which follows a three-stage housing recovery model.

Day 3 addressed the financial architecture of disaster recovery: from financing instruments available (reserves, contingent credit, market transfer) to the Philippines' Disaster Risk Financing and Insurance (DRFI) strategy and Romania's experience with World Bank instruments such as the Cat DDO, and the Rapid Response Option which enabled the country to secure budget support within one working day after Storm Boris in 2024.

Day 4 brought the focus to 'leaving no one behind', by showcasing Romania's experience on advancing inclusive emergency preparedness and response. Between 2023-2025, more than 1,100 first responders were trained on how to interact with people with disabilities. With World Bank support, four Training-of-Trainers (ToTs) were conducted, training 84 firefighters nationwide on how to further conduct such training activities. The first inclusive firefighter course was also developed and integrated into the national training curriculum. Furthermore, using Romania's first nationally standardized syllabuses (covering psychointellectual, locomotor, visual, and auditory disabilities), more than 3,100 persons with disabilities received disaster preparedness training. Complementary to these efforts, the Pan-European Mobile Emergency Application (PEMEA) application gives the deaf community real access to 112. Day 4 also provided an overview of the

TAFF mechanisms, including a closer look at some of the TAFF country projects, such as Romania, Germany, and others.



Opening session of the BRICK 2026 Knowledge Exchange Event, Bucharest, 24 March 2026.

A single conviction ran through every session: disaster recovery may be a government-led process, but it is multistakeholder-driven, and it must be built long before a disaster strikes. Effective recovery depends on putting the right bricks in place: strong institutions, reliable data, pre-arranged financing and systems designed from the outset to be inclusive, so that a solid foundation is ready when it is needed. Recovery is not merely about reconstruction; it is an opportunity to reduce future risk, strengthen institutions and build back better.

The following chapters conclude with a Key Takeaways for Practitioners, distilling what participants and readers who could not attend should carry into their own work.

Disaster recovery may be a government-led process, but it is multistakeholder-driven, and it must be built long before a disaster strikes.

BRICK 2026 · BUCHAREST

DAY 1 · TUESDAY 24 MARCH

Foundations of Recovery



BUILDING RESILIENCE · 1 OF 4

Multistakeholder Response & Recovery · Early Warning

From rubble to recovery, one brick at a time.

MULTISTAKEHOLDER RESPONSE & RECOVERY · TECHNOLOGY & EARLY WARNING

Day 1 — Foundations of Recovery

The opening day brought together speakers from the Philippines, Türkiye, Pakistan, Japan and Romania, including disaster risk management practitioners and government representatives, around two main themes: multistakeholder approaches to response and recovery, and the role of technology in preparedness and early warning. The presentations went from the rationale for planning recovery in advance to the practical mechanics of coordination and early warning.

Planning Recovery Before a Disaster: Lessons from the Philippines



Dr. Renato U. Solidum, Jr., presenting lessons from Philippines

Dr. Renato U. Solidum, Jr., Secretary of the Department of Science and Technology, opened the day by describing the Philippines' **strategic shift from reactive response toward proactive, science-based risk governance**. This was done by institutionalizing recovery through legal frameworks, pre-positioned financing and a culture of preparedness embedded at every level of government. Dr. Solidum framed disaster resilience around three operational goals: (1) reducing

risks before hazards occur, (2) ensuring an effective response immediately before, during and after a disaster event, and (iii) delivering timely recovery and rebuilding.

Central to this shift are two flagship digital tools. GeoRiskPH is an integrated geospatial platform whose components include HazardHunterPH for public hazard assessment, GeoAnalyticsPH for spatial analysis, and GeoMapperPH for field-and-office mapping. PlanSmart (Ready to Rebuild) guides Local Government Units (LGUs) and national agencies through comprehensive rehabilitation and recovery planning, from disaster impact assessment to recovery programmes across housing, livelihoods and infrastructure. To date, PlanSmart has trained over 2,300 officials and enabled 500 LGUs and national government agencies to prepare recovery plans across five high-risk regions.

Figure 1. The Philippines' risk-information backbone — the GeoRiskPH assessment tools paired with the PlanSmart “Ready to Rebuild” recovery-planning workbook.



Source: Dr. Renato U. Solidum, Jr. (DOST, Philippines), presentation, BRICK 2026.

Dr. Solidum was candid about the obstacles that remain such as data-sharing constraints, cybersecurity concerns, gaps in local digital infrastructure, limited technical capacity in LGUs, funding constraints and high personnel turnover. The vision, he argued, is for local governments to own and embed these tools in their own governance, building toward a “Smart, Resilient and Sustainable Philippines.”

“In order to break the cycle of repeated devastation, we must anticipate, plan ahead, and act proactively.”

PlanSmart Ready to Rebuild

Fides Borja, Senior Disaster Risk Management Specialist at the World Bank, complemented Dr. Solidum's presentation by showing how the World Bank works with Philippine institutions to translate science-based risk information into practical recovery capacity. The Bank has worked closely with DOST-PHIVOLCS, NDRRMC, the Office of Civil Defense and local governments, building on government systems rather than creating parallel ones. Through technical assistance, international knowledge and capacity building, the partnership has helped develop and roll out PlanSmart Ready to Rebuild, linking the GeoRiskPH risk-information platform to concrete recovery planning at the LGU level.

PlanSmart enables local governments to use hazard and exposure data to assess impacts, identify recovery priorities and investments, define financing needs and establish institutional responsibilities before a disaster occurs. The Bank's role is therefore not to develop plans for LGUs, but to help government institutions build the tools, systems and capacity that allow LGUs to develop and own their own recovery plans.



Fides B. Borja
Senior DRM Specialist, World Bank

■ Disaster Recovery as a Multistakeholder Effort

A panel spanning three country experiences drew out Day 1's central message: **recovery works only when governments, communities, civil society, the private sector and development partners are genuine partners, in planning as much as in implementation.**

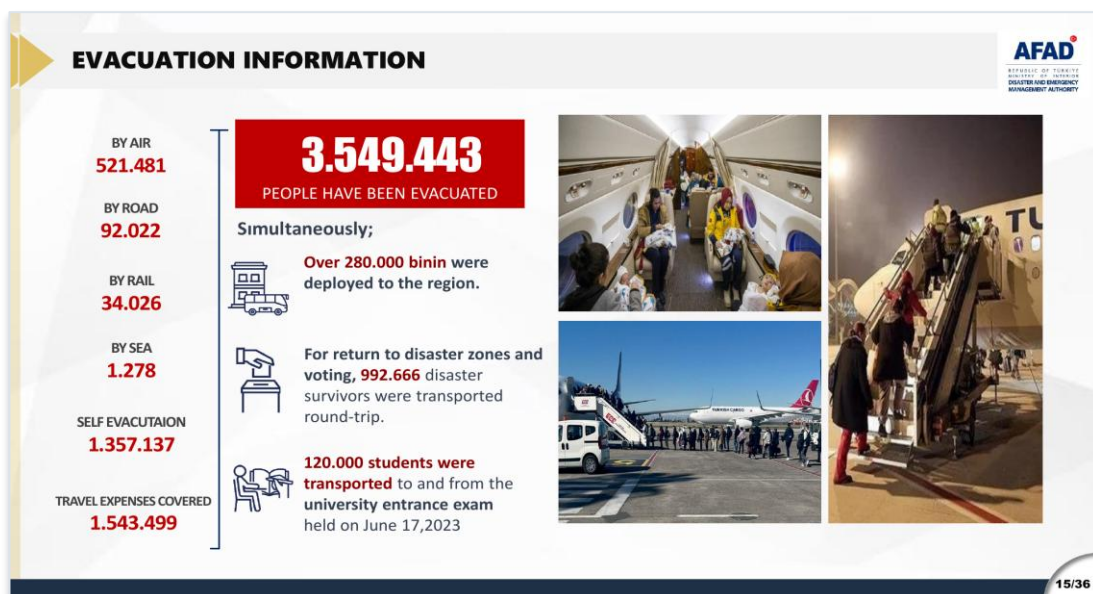


Day 1 Panel on disaster recovery as a multistakeholder effort

Mustafa Esin, Director of Strategy Development at AFAD, Türkiye, presented Türkiye's integrated, three-tier disaster management system and its response to the February 6, 2023 Kahramanmaraş earthquakes, a response of extraordinary scale. More than 3.5 million people were evacuated from the disaster zone; one million tents were supplied, with some 645,000 erected across 350 tent cities sheltering 2.5 million people, alongside container cities for longer-term temporary accommodation; and meals were served to an average of four million people per day, with 20 million food packages distributed in coordination with the Kızılay (Turkish Red Crescent), NGOs and municipalities. Financial aid flowed through the ESEN CARD, a bank card for grocery purchases launched in August 2023 with the Ministry of the Interior and the Red Crescent for residents of container cities. The reconstruction effort prioritized earthquake-resistant housing while updating national building regulations and expanding what is now Europe's largest seismic monitoring network.



Figure 2. The scale of Türkiye's response to the 6 February 2023 earthquakes — 3.5 million people evacuated by air, road, rail and sea.



Source: Mustafa Esin (AFAD, Türkiye), presentation, BRICK 2026.

Dr. Tatsuo Narafu, Guest Researcher at the Building Research Institute in Japan, outlined one of the world's most institutionally grounded disaster systems, anchored in the Disaster Countermeasure Basic Act of 1961, with clearly defined roles for national, prefectural and municipal governments alongside fire and police services, the Self-Defense Force, medical teams (DMAT), voluntary organizations and the private sector - a layered architecture that carries through the full response-and-recovery cycle. A more detailed presentation of Japan's staged approach to housing reconstruction was covered under Day 2.

Ahsan Tehsin, Senior Disaster Risk Management Specialist at the World Bank, described the response to the 2022 Pakistan floods, a systemic shock that affected some 33 million people and inundated nearly one-third of the country. The response was coordinated through the **Resilient**

Recovery, Rehabilitation and Reconstruction Framework (4RF) and its “Build Back Better” philosophy. World Bank support flowed through the Sindh Flood Emergency Rehabilitation Project and the Sindh Flood Emergency Housing Reconstruction Project, the latter rebuilding resilient homes through community-driven approaches. Success rested on strong government leadership, a clear framework and rapid financing. Some of the main constraints included coordination challenges, subnational capacity limits and the trade-offs between speed, quality and inclusiveness.

■ From Why to How: Early Warning and Outreach

The day closed with a discussion on early warning, underscoring that effective warning systems are not built around a single technology but depend on an institutional ecosystem developed over time.

Dr. Marcelino Villafuerte II of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) presented the Philippines’ approach, in which flood, drought and extreme-heat early warning systems are structured end-to-end around the four pillars of the Early Warnings for All (EW4All) framework: risk knowledge; detection, monitoring and forecasting; dissemination and communication; and preparedness and response. He noted that the public increasingly prefers interactive maps and mobile-friendly channels, while preparedness is strengthened through seminars, participatory activities and drills.



Major Florin Ionescu Ciochina from the Romanian General Inspectorate for Emergency Situations and **Tudor Adridan** from the Special Telecommunications Service presented two complementary approaches to alerting populations at risk. Romania’s RO-ALERT system uses cell-broadcast technology to deliver geographically targeted alerts without requiring recipients to opt in, a decisive advantage over SMS during network congestion. Built on a high-availability architecture compliant with ETSI, 3GPP and GSMA standards and integrated with the National Meteorological Agency, the system has been active since 2017 and now reaches approximately 300,000 network elements across four mobile operators, having expanded steadily from its original scope to cover meteorological alerts and missing-child notifications. Planned developments include WEA 3.0 with Device-Based Geo-Fencing for more precise warnings, the use of satellite technologies such as Galileo, integration with the National Institute of Hydrology and Water Management, 5G readiness, and expansion into television, radio and social media channels.



Figure 3. Why cell broadcast outperforms SMS for population alerting — the design basis of Romania's RO-ALERT.

Advantages Of Cell Broadcast Systems	
CELL BROADCAST	SMS
Point to Area	Point to Point
Dependant of location	Independent of location
No need for Mobile ID	Need for Mobile ID
Repetition	No repetition
Independent of Congestion	Dependent/Increases Congestion
Specific User Experience	Regular User Experience
Strong Security	Poor Security

Source: Special Telecommunications Service (STS, Romania), presentation, BRICK 2026.

KEY TAKEAWAYS

Build recovery capacity before disasters occur.

Establish the legal, institutional, financial, and planning arrangements needed to initiate recovery quickly, including pre-positioned financing and local recovery plans. In the Philippines, PlanSmart has supported more than 500 local government units and agencies in developing recovery plans and trained more than 2,300 officials.

Engage stakeholders before a crisis, not only during implementation.

Experiences from Türkiye, Japan, and Pakistan demonstrate that effective response at scale depends on pre-defined roles, coordination mechanisms, and partnerships across levels of government, the private sector, civil society, NGOs, and volunteers.

Treat early warning as an end-to-end system.

Effective Early Warning Systems require more than technology and should address all four EW4All pillars: risk knowledge; detection and forecasting; warning dissemination; and preparedness and response. Gaps in any one pillar can undermine the effectiveness of the entire system.

Use population alerting technologies that are resilient under crisis conditions.

Cell broadcast can provide geographically targeted alerts without relying on congested SMS networks. Romania's RO-ALERT experience also points to the next generation of capabilities, including device-based geofencing, satellite integration, and expanded multi-channel warning systems.



Delegates discuss the event's live graphic recording during a break on Day 1

GRAPHIC RECORDING



Live graphic recording of the Day 1 sessions — multistakeholder response, recovery and early warning. BRICK 2026.

BRICK 2026 · BUCHAREST

DAY 2 · WEDNESDAY 25 MARCH

Measuring Damage, Rebuilding Homes



BUILDING RESILIENCE · 2 OF 4

Damage & Needs Assessment · Housing Reconstruction

From rubble to recovery, one brick at a time.

DAMAGE & NEEDS ASSESSMENT · HOUSING RECONSTRUCTION

Day 2 — Measuring Damage, Rebuilding Homes

Day 2 deepened the technical dimension of the event, focusing on the tools and institutional systems used to assess disaster damage and needs, as well as on housing reconstruction as the core pillar of recovery. Presentations drew on the experiences of Türkiye, Japan and Ukraine, and a keynote from Romania's Department of Emergency Situations (DSU) bridged the technical material to the national context.



Day 2. Panel on instruments for measuring damage after disasters

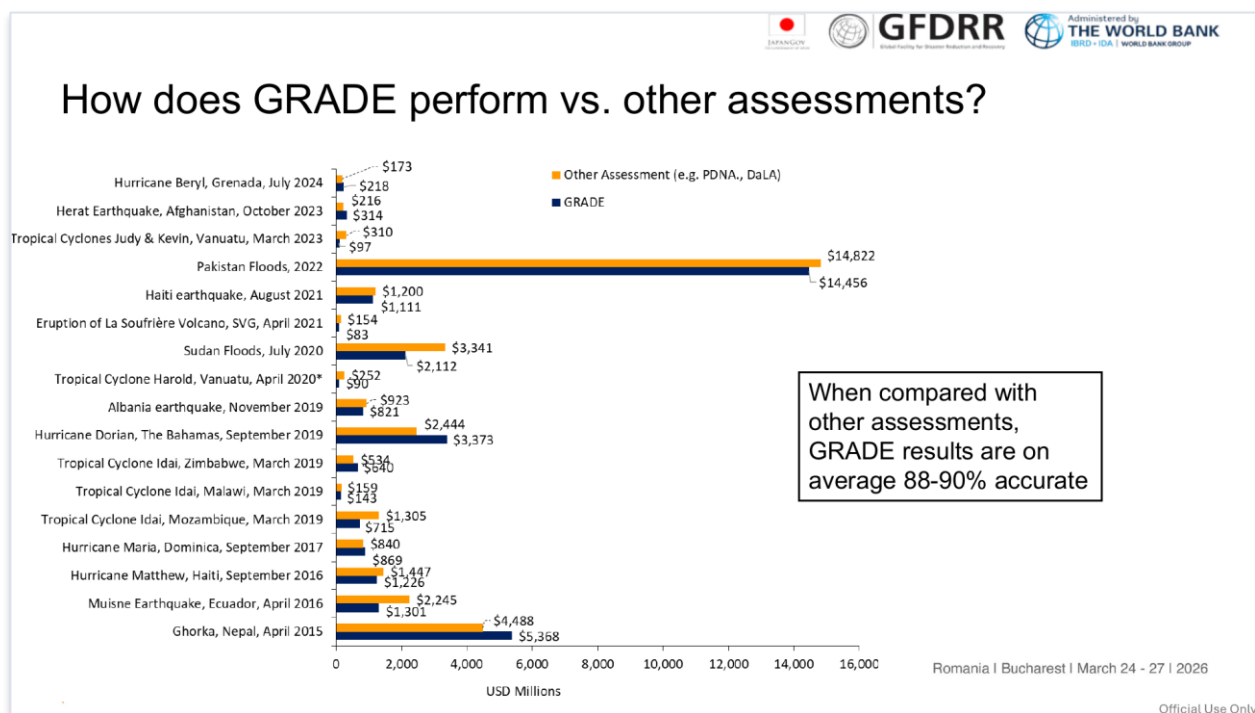
A Toolkit for Measuring Damage and Needs

Rashmin Gunasekera, Senior Disaster Risk Management Specialist at the World Bank, mapped the four primary post-disaster assessment methodologies used globally, each matched to a different decision moment. The **Damage and Loss Assessment (DaLA)**, conducted with the United Nations Economic Commission for Latin America and the Caribbean (UN ECLAC), gives the closest approximation of actual damage and losses to inform government response. The **Post-Disaster Needs Assessment (PDNA)** is a government-led, field-based assessment delivered with the European Commission, United Nations Development Programme (UNDP) and the World Bank, producing a single consolidated report on damage, losses, sector needs and

recovery strategy. The **Rapid Damage and Needs Assessment (RDNA)** is a World Bank instrument that covers conflict-disaster nexus situations.

The **Global Rapid Post-Disaster Damage Estimation (GRADE)** is a remote, desk-based approach focused on physical damage, designed to support high-level dialogue and fund mobilization. GRADE's defining advantage is speed, as it provides results within two weeks, against roughly two months for traditional detailed assessments, while remaining on average 88–90% accurate. Following the 2022 floods in Pakistan, GRADE estimated total damage of US\$14.456 billion, against the PDNA's US\$14.822 billion. To date, 77 GRADEs have been completed across 56 countries, and the methodology continues to evolve, with recent innovations including the use of social media signals in damage estimation and the simulation of household welfare impacts, combining damage data with household surveys and macroeconomic data to show how losses to consumption from reconstruction costs and foregone income are distributed unequally across income groups. Complementing it, the Impact360 mobile tool supports field-based data collection deployable within hours of a disaster, with automated geospatial capture and offline functionality that eliminates manual transcription errors.

Figure 4. GRADE estimates compared with detailed field assessments across a range of events — on average 88–90% accurate.



Source: Rashmin Gunasekera (GFDRR/World Bank), presentation, BRICK 2026.

■ Assessment in Practice: Türkiye and Ukraine

Selcen Altinsoy from the Strategy and Budget Office of Türkiye, described the Türkiye Earthquakes Recovery and Reconstruction Assessment (TERRA), prepared with the support of the World Bank, UNDP and the EU using the PDNA methodology. The February 6, 2023, earthquakes affected 18 provinces and roughly 120,000 km², directly affecting 14 million people (16.4% of the population), with 53,737 casualties and more than 2.7 million displaced. The total economic cost was estimated at US\$103.6 billion, around 9% of 2023 GDP, with housing alone accounting for 83.1% of social-sector reconstruction needs. TERRA's findings were integrated into Türkiye's 12th National Development Plan, and public expenditure on recovery has since reached approximately US\$91.5 billion.

Elif Ayhan, Lead Disaster Risk Management Specialist, and **Farah Soraya Ridanovic**, Disaster Risk Management Analyst at the World Bank, traced the five rounds of Rapid Damage and Needs Assessment for Ukraine since the start of the Russia's full-scale invasion, conducted jointly by the World Bank, the Government of Ukraine, the European Commission and the United Nations. As of December 31, 2025, RDNA5 estimates direct damage at US\$195.1 billion and recovery needs at US\$587.7 billion, with housing representing again the single largest component of damage at US\$61.1 billion. Of the US\$15.25 billion in recovery needs identified for 2026, only US\$5.77 billion is secured, leaving a financing gap of US\$9.48 billion; with structural reforms, the private sector could cover up to 40% of needs. The assessment process itself involved more than 1,000 experts and 20 sectors, spanning over 46 months of impact tracking, which has directly informed the EU Ukraine Plan.

Housing Reconstruction: Speed, Quality and Building Back Better

Fatih Sarı from the Directorate General of Construction Works in Türkiye detailed the reconstruction effort following the 2023 earthquakes, which damaged around 1.9 million urban and rural housing units. In less than two years since the disaster, approximately 155,000 units were completed across the 11 affected provinces. The presentation focused on the rural reconstruction programme, identifying 83,649 disaster-affected citizens, and encompassing 76,689 housing units across 135 districts and 5,472 construction sites, drawing on 17 reinforced-concrete designs, three light-steel types and a village-housing variant. A structured seven-step process moves from eligibility and needs assessment through rigorous site selection (, screening against fault-line proximity, slopes, avalanches, landslides and rockfall risks, karst cavities, riverbeds and heritage status), to technical approval and construction. A reconstruction effort at this scale, Sarı emphasized, was possible only because of pre-existing institutional infrastructure, standardized typologies and eligibility mechanisms.



■ Rural reconstruction in Türkiye following the February 2023 earthquakes — from site works to completed village housing. Photos: GDCA presentation, BRICK 2026.

Dr. Tatsuo Narafu, Guest Researcher at the Building Research Institute in Japan, presented in more detail how Build Back Better can be systematized rather than left aspirational. Japan experiences 19% of the world's largest earthquakes (over 6.0 on the magnitude scale) on 0.25%

of its land area. However, the country's building codes have evolved accordingly, from the world's first seismic structural-calculation regulation in 1924 to the 1981 New Seismic Codes, a turning point after which buildings performed significantly better in the 1995 Hanshin-Awaji earthquake. Furthermore, Japan has institutionalized a three-stage housing recovery model: (1) pre-designated emergency shelters offering free accommodation; (2) prefabricated temporary houses constructed within two to three weeks and are exempt from standard building permits to maximize speed; and (3) permanent housing through below-market public rentals and self-rebuilding supported by preferential loans from the Japan Housing Finance Agency. A national seismic-retrofitting programme (through which 90% of houses were retrofitted by 2023, with a goal of near-complete coverage by 2035) and earthquake insurance covering roughly 35% of households complete the picture

KEY TAKEAWAYS

Match the assessment method to the decision at hand. GRADE provides a rapid, remote assessment—typically within two weeks and with 88–90% accuracy—to inform early financing decisions and high-level dialogue. PDNA/RDNA provides the more detailed, field-based assessment needed to shape recovery strategies, while DaLA provides the closest approximation of actual damage and losses. **Rapid and detailed assessments should be conducted in parallel rather than sequentially** to avoid delaying recovery planning.

Digitize damage and needs assessment before a disaster occurs. Offline-capable, geospatially enabled tools such as **Impact360**, structured around the PDNA sector framework, can reduce transcription errors and significantly accelerate field assessments. Their effectiveness, however, depends on systems being established, tested, and users trained before a crisis.

Treat housing reconstruction as a scalable delivery system. Türkiye's reconstruction of **155,000 housing units in less than two years** was enabled by standardized building typologies—including 17 reinforced-concrete and three light-steel designs—a structured seven-step process from eligibility to construction, and systematic multi-criteria site screening.

Institutionalize Build Back Better before disaster strikes. Japan's three-stage housing approach—pre-designated shelters, rapidly deployable temporary housing that can be established within 2–3 weeks through streamlined permitting, and permanent housing supported by preferential financing—illustrates the value of embedding **Build Back Better arrangements in legislation, regulations, and delivery systems before they are needed**, rather than developing them under post-disaster pressure.



Experts from Türkiye and Japan presenting housing reconstruction examples.

GRAPHIC RECORDING



Live graphic recording of the Day 2 sessions — measuring damage, needs and losses, and building back better. BRICK 2026.

BRICK 2026 · BUCHAREST

DAY 3 · THURSDAY 26 MARCH

Country Spotlights & Financing Resilience



BUILDING RESILIENCE · 3 OF 4

Romania · The Philippines · The Financial Architecture of DRM

From rubble to recovery, one brick at a time.

THE FINANCIAL ARCHITECTURE OF DISASTER RISK MANAGEMENT

Day 3 – Country Spotlights and Financing Resilience

Day 3 examined the financial architecture of disaster risk management - the mechanisms that enable governments, local authorities and households to prepare for, absorb and recover from disaster shocks without derailing development gains. Country experiences and highlights from the Philippines and Romania were set alongside global World Bank frameworks and instruments (such as contingent credit lines, catastrophe bonds, and the Rapid Response Option).

Spotlight on Romania

OPERATIONAL READINESS & THE NATIONAL EMERGENCY SYSTEM

As Head of Romania's Department for Emergency Situations and host of BRICK 2026, Dr. Raed Arafat shared with the delegates a philosophy of preparedness and presented the system that puts this philosophy into practice. Romania's integrated national emergency system represents the architecture behind the field visits to Bucharest's Obor Fire Station, the Bucharest-Ilfov Inspectorate, the Integrated Municipal Emergency Centre (112) and the General Inspectorate of Aviation.

Civil Protection as a Domain of Direct Accountability

Dr. Arafat's central argument was a call to treat civil protection not as a support pillar but as a domain of full and direct accountability. Too many actors in the system, he observed, tend to avoid responsibility, a habit that must change for preparedness efforts to be effective. He also pointed to a hidden trade-off in public administration: *cost efficiency can often be the enemy of resilience*. Eliminating redundancy may look prudent on a balance sheet, but resilience depends precisely on spare capacity that can sit idle for years before becoming indispensable in a crisis, a deliberate investment, not a wasteful one.

Disasters cannot be managed without the private sector, because the critical infrastructure on which response depends (energy grids, transport networks, food supply chains) is largely privately-owned, and companies should invest in their own resilience as a matter of business continuity. Romania's model rests on deep civil-military integration: civil protection forces and the military both train and use standardized equipment, so civil protection can independently carry out the full spectrum of operations when the military is deployed elsewhere. And a lesson, Dr. Arafat argued, is truly "learned" only once a solution has been implemented; until then, the lesson is merely "identified." He illustrated this point using concrete investment examples: having standardized ambulances that any trained responder can operate nationwide, mobile intensive-care trucks that convert 15 ordinary beds into 15 ICU-level beds, firefighting robots that on one occasion saved seven firefighters unable to enter a hazardous zone, and generators at fuel stations so that emergency vehicles can refuel during power outages. On disaster financing, he pointed to the World Bank's Cat DDO, which Romania effectively activated after the 2024 and 2025 flood events, to secure immediate liquidity.



Dr. Raed Arafat
Head, Department for Emergency Situations, Romania



Dr. Raed Arafat presenting Romania's integrated national emergency system, Day 3.

A Single, Nationally Integrated Command

The system Dr. Arafat described organizes emergency response across Romania's 41 counties and the municipality of Bucharest under one coordinating authority. Emergency Ordinance No. 1/2014 established the Department for Emergency Situations (DSU) within the Ministry of Internal Affairs as the permanent national coordinator for prevention and response, complemented by Ordinance No. 21/2004 on the National Emergency Management System and Law No. 95/2006 on emergency medical assistance. The DSU coordinates the General Inspectorate for Emergency Situations and the General Inspectorate of Aviation, and operationally directs the county and Bucharest ambulance services, hospital emergency reception units, and the public mountain and cave-rescue services; in a declared emergency, even the county prefectures fall under its coordination.

One System, Many Responders - The System in 2025

The system deliberately fuses structures of military status: the firefighters and paramedics of the General Inspectorate for Emergency Situations and the pilots of the General Inspectorate of Aviation - with services of civil status: public ambulance, hospital emergency reception, and mountain and speleological rescue. The 2025 activity figures convey its scale, as shown in the table below:

Component	Personnel	2025 activity
General Inspectorate for Emergency Situations	26,000+	37,510 fires; 468,766 medical/first-aid interventions

Component	Personnel	2025 activity
Public Ambulance Services	12,222	3,267,180 interventions
Hospital Emergency Reception Units	10,865	5,213,786 cases presented
General Inspectorate of Aviation	442	11,000+ flight hours (74% SMURD medical)
Mountain & speleological rescue	824	7,247 cases

112 and the National Coordination Architecture

The single emergency number 112, managed by the Special Telecommunications Service, is answered to through 37 dispatch centres integrating firefighting and medical services, plus three fully integrated centres that also include public order. Bucharest's integrated dispatch, including SMURD, ambulance, police, gendarmerie and STS, has operated since 2018. Above the dispatch layer, the National Command and Coordination Centre for Interventions (CNCCI), established at the end of 2014, runs around the clock and scales into a dedicated crisis structure when needed, as it did throughout the COVID-19 response. Public warning reaches the population through RO-ALERT: 21,558 cell-broadcast messages sent between 2018 and February 2026, of which 62.8% concerned dangerous animals, 24.4% immediate meteorological or hydrological hazards, 8.5% the COVID-19 epidemic, and 1.5% each fire and missing children, as well as through the DSU "Be Prepared" platform and mobile app.

Risk Management, Capability and Readiness

Under Government Decision No. 557/2016, the DSU holds integrated operational coordination across 24 recognized risk types - from earthquakes, floods and wildfires to epidemics, CBRN events and armed conflict - and has developed five national response concepts for earthquakes, epidemics, forest fires, floods and nuclear or radiological accidents.

The system is explicitly aligned with NATO's seven baseline resilience requirements, sustained through more than 220 training centres and exercises such as EU-MODEX 2018, Vigorous Warrior 2019 and SEISM25. Investment in response technology exceeded €1 billion over 2014–2025, equipping field, air and maritime capabilities, among them two WHO-classified EMT-1 medical modules, SMURD helicopters, fixed-wing medevac aircraft and search-and-rescue vessels, alongside the mobile intensive-care units and firefighting robots noted earlier.

From Recipient to Provider

The capability Romania has built increasingly flows outward. Through the EU Civil Protection Mechanism and rescEU, backed by an European Commission grant of up to €10 million for a reserve of protective equipment and ventilators - and through civil-military cooperation, Romania has supported Greece and France against wildfires, deployed search-and-rescue teams to Türkiye after the February 2023 earthquakes, and delivered humanitarian and medical assistance to countries including Italy, the Republic of Moldova, Tunisia, India, Egypt, Lebanon, Croatia, Vietnam and Gaza. During the pandemic, the same National Coordination Centre that runs daily operations managed inter-hospital transfers and the reception of Ukrainian refugees through the Suceava regional logistics hub.

Spotlight on the Philippines

SCIENCE, DATA & THE ECONOMICS OF RISK



Dr. Solidum plenary address during BRICK 2026

Where Dr. Arafat reasoned from the operational reality of running a national response system, **Dr. Renato U. Solidum, Jr.**, Secretary of the Philippines' Department of Science and Technology, reached similar conclusions from the direction of science and economics. Sharing the Day 3 session on preparedness as a prerequisite for recovery, he challenged the habit of treating disaster risk reduction as a sunk cost.

Few countries make the case for resilience as starkly as the Philippines. It sits at the meeting point of the Pacific "Ring of Fire" and the Western Pacific typhoon belt, exposing more than 110 million people to earthquakes, volcanic eruptions, tsunamis, floods, landslides, and roughly twenty tropical cyclones a year. That exposure is why the country is widely used as a proving ground for disaster risk management.

DRR as wealth creation, not a sunk cost

Disaster Risk Reduction, Dr. Solidum argued, is wealth creation, not expenditure, an investment that sustains growth rather than competing with development spending. He grounded the claim in hard numbers: the Philippines loses as much as 4.6% of GDP each year to typhoons, with 8.9

million people internally displaced in 2024 alone. Reconstruction after the fact routinely costs several times what mitigation would have, and each major event erases years of hard-won development gains.

“Disaster imagination”

Data alone rarely changes behavior. Solidum introduced the idea of disaster imagination, the deliberate translation of risk data and scientific assessments into vivid, relatable narratives so that communities and decision-makers can viscerally picture what a disaster would actually do to them. A hazard map shows that a barangay floods but disaster imagination is what turns that fact into a family moving documents, valuables, and themselves to safety before the water rises.

The practical implication for agencies is concrete: every hazard map should travel with a story. Scenarios, simulations, drills, and plain-language visuals close the gap between abstract, low-frequency risk and the human decision to act. Without that imaginative engagement, even excellent science sits unused.

Funding is essential to turning vision into reality

Resilience frameworks that are not backed by committed budgets, Solidum argued, are not plans at all, they are wishes. The challenge lands squarely on institutions that publish ambitious resilience strategies without securing the resources to deliver them. The Philippines’ own disaster-risk-financing architecture, contingent credit, catastrophe bonds, and mandatory local disaster funds is the counterexample: a vision that has been funded and is therefore real.

Science in everyone’s hands: the GeoRiskPH toolset

If risk must be imaginable and strategies funded, they must also be usable. In his presentation, Dr. Solidum showcased the digital backbone that the Philippines has built to make risk-informed planning routine, the GeoRisk Philippines and its analytics tools, such as PlanSmart for settlements and safe schools, and a real-time monitoring platform with an AI-powered public chatbot. He stressed that reaching the most exposed populations, through programmes such as Community Empowerment through Science and Technology (CEST), depends on a genuine whole-of-society approach. His closing ambition distilled the national ethos, which is to move “from victims of disasters” to “victors over disasters” as the Philippines continues its work to build forward in a more resilient way.

Platform	What it does
HazardHunterPH	Instant, location-specific hazard assessment — enter an address or coordinates to see earthquake, volcanic, and hydrometeorological hazards, with AI-generated impact layers and a mobile app. Around 1.4 million users.
GeoAnalyticsPH	Summarized hazard and risk-exposure analysis — the share of land exposed to hazards and the population at risk by age, sex, and locality — to support planning. Around 66,000 users.
GeoMapperPH	Collaborative data collection that builds the country’s National Exposure Database, so assessments and damage estimates rest on current, shared data.

Platform	What it does
PlanSmart for Safe Schools	Digitizes school-building footprints and flags structural vulnerabilities, helping minimize the learning losses that disasters cause. (Confirm exact program name.)
Ready / Prepared platform	Real-time monitoring of volcanoes, earthquakes, and floods, including an AI-powered public chatbot for guidance. (Confirm exact program name.)

Adoption is the point of it all: GeoRiskPH partners with roughly 20 national agencies and 52 local governments, has trained close to 700 municipal governments, and its HazardHunterPH tool earned a Bronze Award at the Geneva International Exhibition of Inventions. As Solidum has put it, disaster prevention is everyone’s responsibility and the tools are built so that anyone, from a mayor to a household, can act on the same science.

A whole-of-society approach

Dr. Solidum closed on the theme that ties the rest together: resilience cannot be built by government alone. A common understanding of risk, shared across households, communities, civil society, and the private sector is the prerequisite for effective DRR at scale. The maps, the analytics, and the financing matter only if society as a whole reads risk the same way and chooses to act on it. It is why the Philippine tools are free and public, and why the message is framed not as a government duty but as a shared one.

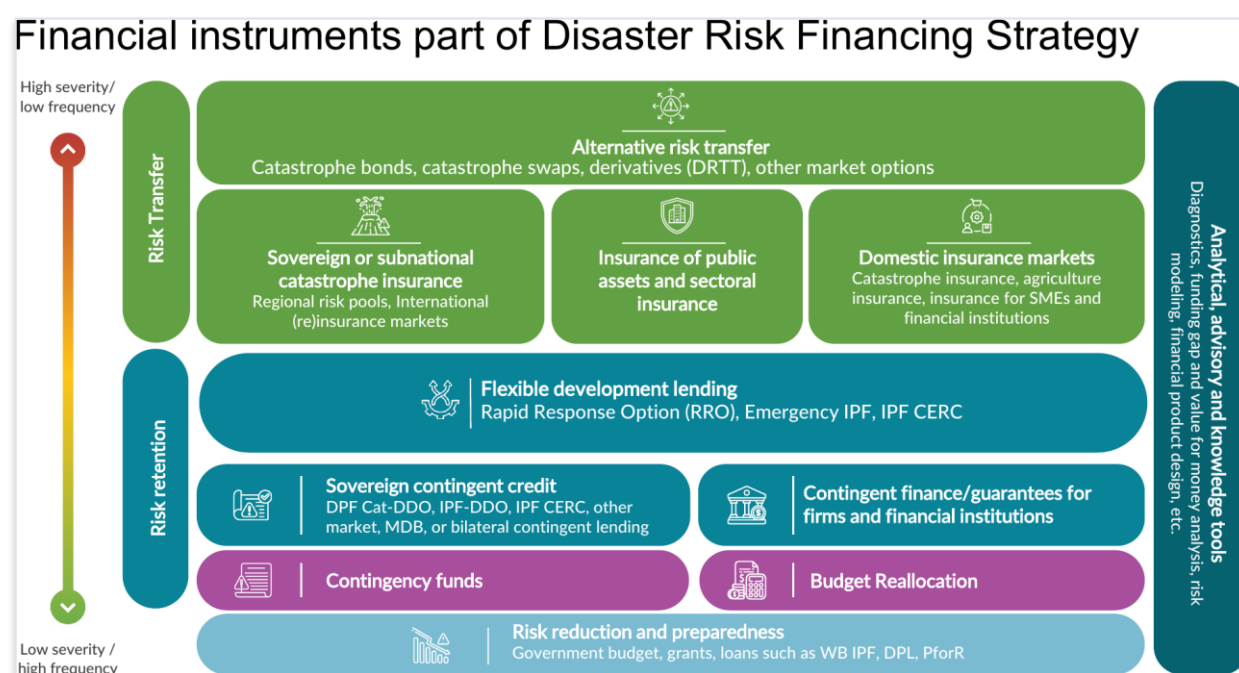
KEY TAKEAWAYS

Proactive, ownership-based governance. Both country experiences emphasize institutional arrangements that assign responsibilities and decision-making authority ex ante, enabling coordinated action before and during disaster events rather than relying on ad hoc responses after impacts occur.	The economic case for resilience. Resilience is framed as a strategic national investment that protects economic productivity, fiscal stability, and development gains, rather than as a discretionary cost incurred primarily for emergency response.
The private sector as a core resilience partner. Effective resilience requires sustained private-sector engagement, particularly given the private sector’s role in owning, operating, financing, and maintaining critical infrastructure and essential services. This includes investment in risk reduction and business continuity.	Plans must be underpinned by financing and operational readiness. Both experiences demonstrate that strategies and institutional frameworks are effective only when supported by dedicated financing, clear implementation arrangements, and regular exercises that test roles, procedures, and coordination mechanisms. A plan without resources and operational validation is unlikely to translate into effective action.

The Architecture of Disaster Risk Finance

Rashmin Gunasekera, WB Sr. Disaster Risk Management Specialist set out the logic of disaster risk finance (DRF). Disasters cause more than US\$300 billion in economic losses per year on average, rising by 60% to roughly US\$520 billion once consumption losses on households are counted. Furthermore, an estimated 130 million people are estimated to be pushed into poverty by 2030 by climate change. DRF, the pre-arrangement of financial protection before a disaster strikes, rests on four principles: (i) timeliness, (2) risk layering, (3) the distribution of funds to beneficiaries, and (4) data-driven decisions.

Figure 6. Layering financial instruments to the risk profile — from budgetary reserves for frequent small events to market-based risk transfer for the tail.



Source: Rashmin Gunasekera (GFDRR/World Bank), presentation, BRICK 2026.

Gunasekera also introduced the **Disaster and Climate Adaptation Financing Framework (DCAFF)**, pointing to a key market failure: the financial sector does not automatically “credit” public investments in risk reduction, which consequently disincentivizes disaster prevention actions. DCAFF addresses these gaps through five pillars: assessments, analytics, partnerships, financing products and capacity building. One of the case studies presented focused on the 2014 flood events in Serbia, where a US\$70 million World Bank Development Policy Loan with a Cat DDO provided immediate liquidity after the disaster. Another example was the city of Maharashtra in India, where a city resilience programme combines structural mitigation with partial refunds for climate-proof building loans and premium subsidies for independent contractors’ insurance.

The Philippines' DRFI Strategy in Practice

Jenevive M. Lontok from the Philippines Department of Finance showed how this architecture operates at national scale through a tiered Disaster Risk Financing and Insurance (DRFI) strategy designed to sustain growth, protect development gains and reduce disproportionate impacts on the poorest, using budgetary instruments. In response to the 2025 Typhoon Kalmaegi, three concurrent contingent facilities were used: a World Bank Cat-DDO (US\$500 million), a Disaster Resilience Improvement Program (DRIP) from the Asian Development Bank (US\$500 million) and a Post-Disaster Standby Loan (PDSL)¹ provided by Japan International Cooperation Agency (JICA). Additionally, market-based instruments in the Philippines include a catastrophe bond (maximum coverage US\$225 million). For example, a total of US\$52.5 million was paid out for Super Typhoon Odette (based on a pre-specified amount when a specific, measurable event occurs, rather than assessing actual physical damages). This instrument helps speed up claims and provides instant liquidity. Furthermore, the National Indemnity Insurance Program covers 132,000 public school buildings in the Philippines. A ten-year stocktaking exercise with the World Bank is now underway to inform an enhanced DRFI strategy, including a possible budget-allocation floor for disaster risk financing.



Speed in Action: The WB Crisis Preparedness and Response Toolkit

Alexandra Calin, WB Sr. Disaster Risk Management Specialist, closed the substantive sessions with the instruments that turn financial preparedness into rapid disbursement. The World Bank **Crisis Preparedness and Response Toolkit (CPRT)** gives governments fast access to financing through two prerequisite instruments: the Cat DDO and the Contingent Emergency Response Project (CERP). Together, these instruments unlock the **Rapid Response Option (RRO) mechanism**, allowing governments to redeploy up to 10% of the undisbursed balances of existing projects without new lending.

The toolkit has also made the Cat DDO itself more flexible: country limits have been doubled (up to US\$1 billion or 0.5% of GDP for IBRD countries), and a **scalable feature** allows countries to sign a potentially smaller Cat DDO with the option to double it at the moment of a catastrophe. As illustrated by country examples in the ECA region, a US\$25 million Cat DDO can expand to over US\$100 million in accessible crisis financing once the scale-up.



¹ PDSL is a facility through which Japan supports the Philippines in the event of large-scale disasters. By establishing a standby loan agreement in advance, it enables the swift disbursement of yen loan to the Philippine government upon request, allowing the government to quickly mobilize funds for urgent post-disaster needs and manage financial pressures during periods of crisis.

TABLE Two prerequisite instruments behind the Rapid Response Option: CAT DDO and CERP

Feature	Cat DDO	CERP
Instrument type	Development Policy Financing	Investment Project Financing
Coverage	Disasters caused by natural hazards, health emergencies	All type of emergencies. Natural hazards, climate and man-made crises
Disbursement speed	24–48 hours	Slower
Key requirement	Adequate macroeconomic framework at approval.	Fiduciary / safeguard arrangements in place
Limitation	No man-made disaster coverage	No reconstruction works, just fast disbursement items

Romania case made the point vivid. After Storm Boris in September 2024 damaged 5,000 homes and left 25,000 residents without power, the Government requested disbursements from Cat DDO2 on 12 December 2024. Approval from the WB came within one working day, and funds were delivered as budget support within five days, which was possible only because the RRO Omnibus had been signed in June 2024 and the legal, fiduciary and institutional groundwork were completed in advance.

KEY TAKEAWAYS

Build a financial architecture, not a single instrument. Effective disaster risk financing combines risk assessment, data and analytics, institutional partnerships, financing instruments, and capacity to match financial protection to the risk profile.

Match financing to the risk. Budgetary reserves, contingent credit, insurance, and capital-market instruments should be layered according to the frequency and severity of shocks. No single instrument provides adequate protection across the full risk spectrum.

Pre-arrange financing before a disaster. Rapid access to liquidity depends on having financing instruments, legal arrangements, and fiduciary systems in place before a shock occurs. Romania's experience with Cat DDO2 demonstrates the value of this preparedness.

Use finance to close the resilience investment gap. As highlighted by DCAFF, public investments in risk reduction are not automatically valued by financial markets. Better risk data, analytics, partnerships, and targeted financing mechanisms can help translate resilience investments into stronger financial protection.

Design for speed, flexibility, and scale.

Financial instruments should enable resources to reach governments and affected beneficiaries quickly, while allowing financing to scale with the severity of a disaster.

GRAPHIC RECORDING



Live graphic recording of the Day 3 sessions — the financial architecture of disaster risk management. BRICK 2026.

BRICK 2026 · BUCHAREST

DAY 4 · FRIDAY 27 MARCH

Leaving No One Behind



BUILDING RESILIENCE · 4 OF 4

TAFF · Inclusive Resilience · Emergency Communication

From rubble to recovery, one brick at a time.

TAFF · INCLUSIVE RESILIENCE · EMERGENCY COMMUNICATION

Day 4 — Leaving No One Behind

A warning system reaches everyone, or it fails at its purpose. The closing day focused on inclusive disaster resilience for persons with disabilities and the modernization of emergency communication. The day also closed with a presentation of the TAFF mechanism, providing an overview of its portfolio, emerging results and forward trajectory. The sessions were organized around one central question: how do we make sure no one is left behind?



VR session that simulates an earthquake in a school. Photo: World Bank

Building a More Inclusive System

Brigadier General Silviu Stoian, Deputy Head of the Civil Protection Directorate under the Department of Emergency Situations, Romanian Ministry of Internal Affairs, opened the discussion by showcasing Romania's approach and efforts to making preparedness and response more inclusive. This is anchored in three national strategies: the National Strategy on the rights of persons with disabilities 2022–2027, the Strategy for the Development and Consolidation of the Department of Emergency Situations' role 2024–2030, and the National Strategy for Disaster Risk Reduction 2024–2035.

DSU's approach combines institutional coordination with sustained community engagement, supported by nearly 60 collaboration protocols with NGOs, academia, and the private sector. This is complemented by mobile outreach through the **“Be Prepared” Caravan and Mobile Training Center**, which have reached more than 221,000 people, and the **“Detector for Life” campaign**, through which approximately 10,000 smoke and carbon-monoxide detectors are installed annually in vulnerable households. Digital preparedness resources are also available through the **fiipregatit.ro** platform, including an audio-format guide for persons with disabilities. A new guide, **“72 Hours After an Earthquake: Guide for a Survival Plan,”** developed with the Bucharest Community Foundation, further strengthens community-level preparedness by providing practical guidance on how neighbours can support children, older people, and persons with disabilities during the critical first days after an earthquake. The guide will be disseminated through the Federation of Homeowners' Associations to support outreach at the building and neighbourhood level.



Inclusive resilience in practice: assisting persons with disabilities during Exercise SEISM 2025 (left); PEMEA demonstrations with the deaf community, 2025–2026 (right).

Between 2023 and 2025, the World Bank through GFDRR supported DSU in strengthening disability-inclusive emergency management through two complementary areas of work: **inclusive emergency response and inclusive emergency preparedness**. On the response side, four training-of-trainers sessions and ten shadowing and mentorship sessions equipped 84 trainers and 1,133 first responders with adapted techniques for interacting with and assisting persons with disabilities during emergencies. These efforts contributed to the formal integration of the first inclusive firefighter course into the national training curriculum, as well as the development of a pocket guide for firefighters and a standardized **Procedure for the Evacuation and Rescue of Persons with Disabilities**, covering the main types of disabilities.

Work on preparedness focused on building capacity among both trainers and persons with disabilities. A further 87 trainers and 3,115 persons with disabilities were trained using the first nationally standardized preparedness curricula. **The SEISM 2025 exercise** provided an opportunity to apply these approaches in an operational setting, including practical assistance to people with visual and mobility impairments, and generated lessons to inform further curriculum development.

A testimonial shared during the preparedness trainings:

***“Because I can’t hear sirens, when there is severe weather,
I have to stay awake to watch storms until all gone.”***

The next phase of this work aims to further embed disability inclusion within Romania's emergency management system. Priorities include adapting RO-ALERT to better serve persons with disabilities, mapping vulnerable communities in collaboration with local authorities and the ministries responsible for health and labour, and integrating disability-specific needs into local evacuation plans and disaster-relief camps. Together, these measures represent a shift from developing individual tools and capacities toward systematically integrating disability inclusion across preparedness, response, and recovery arrangements

Modernizing the 112 System: Resilience and Accessibility

Roxana-Cristina Dobrișan of Romania's Special Telecommunications Service (STS) presented the modernization of Romania's National Emergency Call System, which STS has operated as a unified nationwide service since 2004. The system now supports multiple channels, including voice, SMS (113), eCall, and VoWiFi, and is being progressively upgraded to **Next Generation 112 (NG112)**. Built around the EENA Model 3 architecture, the system comprises 41 STS-operated first stage answering points, approximately 130 dispatch centres operated by police, ambulance, fire, and gendarmerie services, and around 650 substations. The modernization involves migration to IP-based communications, VoLTE emergency calling, enhanced network- and device-based caller location, and a virtualized private-cloud environment designed to strengthen availability, redundancy, and intelligent routing.



A central focus of the presentation was **accessibility**, particularly for people who are deaf, hard of hearing, or have speech impairments. The **Pan-European Mobile Emergency Application (PEMEA)** was developed through workshops with the Romanian National Association of the Deaf (ANSR) in 2024 and is supported by trained sign-language operators available around the clock since 2025. Currently being piloted in the Bucharest-Ilfov area, the system enables real emergency calls through sign-language video interpretation, Real-Time Text (RTT), and visual icons that allow callers to communicate the nature of an emergency without relying on speech. RTT is particularly important in situations where speaking may be difficult or unsafe, including domestic violence or home-invasion scenarios. Following the pilot, a phased national rollout is planned, alongside further enhancements to provide native RTT and Total Conversation capabilities.

“Accessibility is not a privilege; it’s a necessity and a responsibility we uphold every day.”

The discussion underscored that resilience and accessibility are closely interconnected: an emergency communication system is only effective if people can access it when they need it. **Elisabeta Paraschiv**, Vice-President of the National Association of the Deaf in Romania, reinforced this point from the perspective of users, noting that “the best early warning system in the world only works if it is designed to reach everyone.” The modernization of 112 therefore

illustrates how technological resilience can be combined with inclusive design to ensure that emergency services remain accessible to the entire population.



Elisabeta Paraschiv addressing the audience at BRICK 2026

European Perspective: TAFF and the UCPM

Christian Aagaard from DG ECHO of the European Commission presented the Commission's perspective on the **Technical Assistance Facility for Disaster Prevention and Preparedness (TAFF)** as an instrument for strengthening disaster prevention and preparedness under the **Union Civil Protection Mechanism (UCPM)**. TAFF was launched in 2024 as a three-year pilot, with an annual budget of €4 million. By the time of BRICK 2026, the facility had supported 15 country-requested projects, of which two in Iceland and Germany had been completed, as well as two UCPM-wide projects, including one completed initiative focused on investment priorities for wildfire and seismic risk. TAFF has also supported knowledge-sharing activities, including a dedicated conference held in October 2025.

Aagaard highlighted findings from a lessons-learned survey of experts from 26 eligible countries, which provided positive feedback on TAFF's effectiveness and technical expertise and showed broad support for continuing the facility beyond the pilot period. The survey also generated recommendations for adjustments, several of which have been incorporated into the 2026 TAFF call.

The presentation also emphasized the strategic rationale for the partnership between the European Commission, the World Bank, and GFDRR, and the role of TAFF in complementing national investments through EU-funded technical assistance. TAFF activities are aligned with the EU Disaster Resilience Goals and the Preparedness Union Strategy, helping translate these broader policy priorities into country-level technical support and investment planning.

Beyond country-requested grants, TAFF supports UCPM-wide knowledge and capacity-building activities. These include knowledge products on earthquake and wildfire risk management covering the EU as a whole, as well as country-specific deep dives for Croatia, Cyprus, and Romania. The facility also supports technical clinics and training activities and contributes to the Preparedness Union Strategy, including work on education and inclusion. Taken together, these activities demonstrate TAFF's role not only as a financing mechanism for technical assistance, but as a platform for strengthening the knowledge base, institutional capacity, and investment priorities needed to advance disaster prevention and preparedness across Europe.

The TAFF Mechanism and Its Portfolio

Elif Ayhan, Lead Disaster Risk Management Specialist and **Farah Soraya Ridanovic**, Disaster Risk Management Analyst at the World Bank, provided a deeper look at how TAFF is being implemented in practice. Building on the strategic overview presented by Aagaard, they focused on the facility's three operational pillars: institutional capacity, smart investments, and knowledge base, and illustrated these through examples from the country portfolio. TAFF is being implemented across **13 participating countries**, with the 2024 portfolio comprising nine grants across eight countries and one EU-wide grant, and the 2025 portfolio comprising eight grants across seven countries and one EU-wide grant.

The country examples demonstrated how these pillars translate into practical support. In **Germany**, a completed study examined the economic returns to disaster preparedness and prevention, finding that every €1 invested generated a median benefit of €2–6, with returns reaching up to €500 for certain investments. In **Sweden**, TAFF is supporting the modernization of national disaster-loss databases to strengthen AI-era risk analytics. The work is grounded in evidence that better loss data can help target investment more efficiently: globally, strengthening exposed infrastructure assets is estimated to cost US\$11–65 billion annually, substantially less than indiscriminately upgrading all exposed assets.

Other projects illustrate how TAFF supports the modernization of national systems and the integration of resilience into recovery planning. **Montenegro** is preparing to transition to **Next Generation 112 and a public warning system by 2027**. In **Iceland**, TAFF-supported work on the recovery of Grindavík has centered on the principles of “**Safety first**,” “**Primacy of child safety**,” “**Transparency and Trust**,” and “**Build Back Better**.” Consultations, including a structured assessment of acceptable risk across residential, commercial, tourism, and school uses, highlighted that progress in Grindavík's recovery is constrained primarily by structural gaps rather than a lack of willingness to act.

Together, these examples illustrate how TAFF moves beyond standalone technical studies to address **the institutional, analytical, and investment barriers that can prevent countries from translating risk knowledge into practical resilience action**.



TAFF in Romania: The RAPID Project

Anda Anica, Disaster Risk Management Analyst at the World Bank, brought the focus back to the host country, highlighting Romania's high exposure to **floods, earthquakes, droughts, landslides, wildfires, and extreme weather**. The scale of Romania's seismic risk is particularly significant. The 1977 earthquake, with a magnitude of 7.2, caused more than 1,500 fatalities and 11,321 injuries, and severely damaged or collapsed more than 15,000 apartments. Much of the country's-built environment predates modern seismic codes, and many vulnerable buildings remain unrepaired to this day.

Against this risk profile, several important institutional gaps remain, including the **absence of a coherent disaster recovery framework aligned with Build Back Better principles and limited financing mechanisms for reconstruction**. These challenges are compounded by the vulnerabilities of approximately **900,000 persons with disabilities, isolated communities, and an ageing population**. Addressing these gaps is a central objective of the RAPID Project.

The World Bank's support to Romania combines investment financing, contingent financing, and technical assistance. It includes **four Investment Project Financing** operations focused on rehabilitating high-seismic-risk schools, fire stations, police precincts, and gendarmerie units; a Cat DDO providing contingent financing; and two trust funds implemented through GFDRR financed under **TAFF and the Japan–World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries**.

Implemented from July 2024 to February 2027, the RAPID Project financed under TAFF is structured around three complementary components. The first focuses on **identifying and addressing institutional and policy gaps**, including through a Diagnostic Report on Romania's Disaster Recovery Framework, a Gender Note on gaps and recommendations for gender-responsive disaster risk management, and a case study drawing lessons from recent flood events in Romania. The second component focuses on **advancing Build Back Better recommendations**, including a Knowledge Note on international good practices in disaster recovery and a final report providing recommendations for strengthening Romania's disaster recovery framework. The third component focuses on **building national capacity for recovery planning across different areas**.

Progress under the capacity-building component is already underway. To date of the Brick event, 17 training activities on inclusive emergency response have reached approximately 400 first responders, including three train-the-trainer programmes. An Implementation Handbook, co-developed with organizations of persons with disabilities, has also been developed to guide inclusive firefighter training nationwide.

Taken together, the RAPID Project brings together **diagnostics, international good practice, policy recommendations, capacity building, and practical tools** to strengthen Romania's disaster recovery system. Its focus is not only on improving the response after a disaster, but on putting in place the institutional arrangements, financing mechanisms, knowledge, and capacity required to support a more effective and inclusive recovery.



KEY TAKEAWAYS

Make inclusion part of the system, not an add-on.

Effective inclusion requires the participation of organizations of persons with disabilities in the design of training, procedures, communication systems, and preparedness measures, with lessons embedded in national curricula and operational protocols.

Design emergency systems around how people actually experience disasters.

Preparedness and warning systems need to account for different communication needs and barriers. The modernization of 112 and the PEMEA pilot demonstrate how accessible technologies can turn inclusion into an operational capability.

Test, institutionalize, and scale what works.

Exercises, pilots, and community-based initiatives provide opportunities to identify gaps and refine solutions. Their value is greatest when lessons are translated into national standards, training curricula, operational procedures, and investment priorities.

Use technical assistance to turn evidence into action.

TAFF demonstrates how targeted technical assistance can help countries identify institutional and investment gaps, develop practical solutions, strengthen capacity, and build the evidence needed to prioritize resilience investments. The Germany study, for example, quantified the economic returns to preparedness, providing evidence to support greater investment in prevention and risk reduction.

Build resilience through connected systems.

The experience across the sessions suggests that preparedness, accessible communication, institutional capacity, data, and investment should not be treated as separate workstreams. Their value comes from how they reinforce one another to ensure that the system can reach, protect, and recover all communities.

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Live graphic recording of the Day 4 sessions — TAFF, inclusive resilience and emergency communication. BRICK 2026.

OPERATIONAL READINESS & THE NATIONAL EMERGENCY SYSTEM

Field Visits



Field visit to the Obor rehabilitated fire station.

The knowledge exchange also moved from the conference room into the field, giving participants an opportunity to see how Romania's disaster risk management systems operate in practice. Delegations visited **Obor Fire Station**, the **Bucharest-Ilfov Inspectorate for Emergency Situations**, and the **Integrated Municipal Emergency Centre**, which hosts the 112 Dispatch Centre. Together, the visits illustrated how emergency response infrastructure, integrated communications, and institutional coordination come together at the operational level. The Integrated Municipal Emergency Centre provided a particularly direct demonstration of Romania's integrated emergency management model, with **SMURD**, **ambulance**, **police**, **gendarmerie**, and **STS dispatchers working side by side since 2018**.

The fire station and inspectorate visits also showcased investments supported through the World Bank-financed **Strengthening Disaster Risk Management Project (EUR 142 million)**, implemented by the General Inspectorate for Emergency Situations (GIES) under the Romanian Ministry of Internal Affairs. The project aims to strengthen the resilience of fire stations and enhance GIES capacity in disaster risk reduction and climate change adaptation. A core investment is the **rehabilitation and reconstruction of 26 high-seismic-risk fire stations and other emergency-response facilities across Romania**. The upgraded facilities are designed to provide first responders with safe, modern working environments adapted to operational requirements, while also incorporating accessibility and gender considerations, including appropriate facilities for both women and men. The new stations also incorporate **nearly zero-energy building principles**, including renewable energy and energy-efficiency measures, linking disaster resilience with climate mitigation and more sustainable public infrastructure.



Field visit to the General Inspectorate of Aviation and its SMURD air-medical fleet. Photo: World Bank / TAFF.

For the visiting delegations, the value of the field visits was both practical and comparative. Participants could observe how an integrated dispatch floor is organized to support coordination across multiple services, how a modern emergency-response station is configured around operational requirements, and how seismic strengthening and reconstruction are sequenced in functioning public facilities. These examples provided a tangible complement to the policy and technical discussions, allowing participants to examine not only **what resilience investments are needed, but how they are planned, designed, financed, and implemented**.

The programme also included a visit to the **General Inspectorate of Aviation**, home to the SMURD air-medical fleet. The scale of the aviation component illustrated the breadth of Romania's emergency response system: in 2025, the fleet recorded more than **11,000 flight hours**, approximately three-quarters of them for medical missions. The visit demonstrated how specialized aviation capacity is integrated into the broader national emergency response architecture and how investments in equipment, infrastructure, and specialized personnel contribute to rapid response across the country.

Participants also visited **School No. 168 in Bucharest**, where a temporary mobile modular school provides children with safe learning spaces while the existing seismically vulnerable school building is reconstructed under the World Bank-financed **Safer, Inclusive and Sustainable Schools Project (EUR 100 million)**. Implemented by the Ministry of Education, the project focuses on improving the **resilience, energy efficiency, and learning environment of 11 vulnerable school buildings across Romania**, while also strengthening institutional capacity for integrated investments in the education sector.



Field visit to the temporary mobile school at School No. 168, Bucharest. Photo: World Bank / TAFF

The temporary school model generated particular interest among participants facing similar challenges in their own countries: **how to retrofit or reconstruct critical public buildings while maintaining the services they provide**. The solution at School No. 168 demonstrated one approach to managing this transition—maintaining continuity of education while major seismic resilience investments are undertaken.

Together with the field visits conducted on Day 2 under the Strengthening Disaster Risk Management Project, these visits connected the knowledge exchange's technical discussions with concrete examples of implementation. They showed how investments in **resilient infrastructure, emergency response capacity, integrated communications, energy efficiency, and service continuity** can reinforce one another. Collectively, nearly a decade of World Bank-supported investments in Romania has contributed to strengthening disaster and climate resilience for **almost 1.7 million Romanian citizens**, while providing participating countries with practical examples that can inform their own investment and institutional reforms.

Conclusions and the Way Forward

Over four days, BRICK 2026 demonstrated that **effective disaster recovery is not created in the aftermath of a disaster; it is built long before one occurs**. Through peer-to-peer exchanges, country experiences, technical discussions and field visits to facilities reconstructed with World Bank support, the event brought together a diverse set of perspectives from across the region and beyond. Romania's experience provided an important foundation for this exchange, while contributions from Türkiye, Japan, Ukraine, the Philippines and other participating countries highlighted both the common challenges of recovery and the different institutional, financial and technological approaches available to address them.



Participants of the BRICK 2026 Knowledge Exchange Event — Bucharest, March 2026.

A central conclusion emerging throughout the event was that **recovery planning is as important as emergency preparedness**. Countries that recover more quickly and effectively tend to have the legal frameworks, institutional arrangements, data systems, financing instruments and reconstruction protocols in place before disaster strikes. Romania's rapid access to Cat DDO financing following Storm Boris and Türkiye's large-scale reconstruction of 76,689 rural housing units illustrated how investments made before a disaster can significantly accelerate

recovery afterwards. Recovery frameworks should therefore be established in advance, aligned with Build Back Better principles and designed to provide clear responsibilities, decision-making procedures and mechanisms for rapid implementation.

The discussions also reinforced that **disaster recovery is government-led but multistakeholder-driven**. Governments have the mandate and responsibility to coordinate recovery, but successful implementation depends on the contribution of local authorities, affected communities, civil society, the private sector, international partners, volunteers and technical organizations. Meaningful participation of affected populations is particularly important in ensuring that recovery investments respond to actual needs and do not reproduce existing vulnerabilities. This requires moving beyond consultation toward genuine participation in recovery planning and implementation.

Across the four days, **data and technology emerged as essential connective infrastructure for resilience and recovery**. Examples including GeoRiskPH, PlanSmart, Handa, GRADE, Impact360 and RO-ALERT demonstrated how reliable, accessible and interoperable data can improve risk understanding, support rapid damage and needs assessment, strengthen emergency communication and accelerate financing decisions. Such systems should be treated as standing national assets rather than tools activated only during emergencies. Rapid assessment tools can support early decisions and trigger initial financing, while more detailed assessments continue in parallel, allowing countries to balance speed with accuracy

Housing remains one of the largest and most complex components of post-disaster recovery. The scale of housing needs—whether measured by its share of total social-sector needs, as in Türkiye, or by absolute losses, as illustrated by Ukraine—makes it a critical determinant of the pace and equity of recovery. The experiences presented at BRICK 2026 suggest that housing recovery can be substantially accelerated when countries prepare in advance through pre-designed and adaptable housing typologies, appropriate site-selection criteria, clear reconstruction standards and legal provisions that reduce administrative barriers. Housing reconstruction should therefore be treated as a preparedness function, rather than developed from scratch after each disaster.

At the same time, **financial preparedness must be considered alongside physical preparedness**. The availability of financing can determine whether recovery begins immediately or is delayed for months or years. Risk layering, contingent credit, catastrophe bonds, insurance and other financial instruments provide complementary sources of liquidity for different levels and types of disaster losses. Instruments such as the Cat DDO and CERP should increasingly be viewed as standard components of national fiscal preparedness, complemented by mechanisms that enable local governments and other implementing actors to access resources when they are needed.

Another consistent message was that **inclusion must be embedded in the design of recovery and emergency systems**. The needs of persons with disabilities, older people, children and other potentially vulnerable groups cannot be addressed as an afterthought. Emergency communication and response systems must be designed to reach the entire population, including through accessible warning mechanisms and emergency call systems. The examples discussed during BRICK 2026 demonstrated that a system that does not work for those most at risk cannot fully achieve its resilience objective. Meaningful participation of organizations representing

persons with disabilities and other affected groups should therefore form part of system design, testing and continuous improvement.

Finally, **Build Back Better needs to move from principle to practice and become systematized.** Japan's experience demonstrates how regulatory and institutional frameworks can embed safer reconstruction into normal recovery processes. Rather than relying on post-disaster momentum to improve standards, countries can establish the rules, technical requirements and decision-making processes in advance so that reconstruction systematically reduces future risk. Recovery therefore represents not only an opportunity to replace what has been damaged, but also a strategic opportunity to strengthen institutions, improve infrastructure, address underlying vulnerabilities and reduce the impacts of future disasters.

Looking ahead, the priority is to translate the relationships, knowledge and practical lessons generated through BRICK 2026 into sustained action. This includes strengthening pre-disaster recovery frameworks; developing tiered and multi-instrument disaster risk financing strategies; maintaining data, assessment and emergency communication systems as standing national infrastructure; systematizing housing reconstruction; embedding inclusion across all stages of recovery; and using regulatory and institutional mechanisms to make Build Back Better the default approach rather than an aspiration.

The value of BRICK 2026 ultimately lies not only in the lessons shared, but in the connections established between countries and institutions facing similar challenges. TAFF and future peer-learning initiatives can help sustain these relationships and develop an enduring community of practice around disaster recovery.

***...knowledge shared across borders is
itself a form of resilience-building, one
brick at a time.***

READ AND WATCH MORE FROM BRICK 2026

Publications and Media



Coverage of the BRICK 2026 Knowledge Exchange Event was published by the Union Civil Protection Knowledge Network and GFDRR, and a short film of the event is available online. URLs are provided in full for print readers.

Articles

- UCP Knowledge Network — [“From Rubble to Recovery, One Brick at a Time: The BRICK 2026 Event”](#).
- GFDRR — [“From Rubble to Recovery, One Brick at a Time: The BRICK 2026 Event”](#).

Video

- [“From Rubble to Recovery, One Brick at a Time: The BRICK 2026 Event”](#).

For more information on the Technical Assistance Financing Facility, visit **www**



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