G20 BRASIL 2024

BUILDING A JUST WORLD
AND A SUSTAINABLE PLANET

Delivering Inclusive and Resilient Recovery in the Face of Increased Risks

Disaster Risk Reduction Working Group

Knowledge partner

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Citation: Delivering Inclusive and Resilient Recovery in the Face of Increased Risks

To download the full report, visit: https://www.undrr.org or the G20 Working Group on Disaster Risk Reduction webpage: https://g20drrwg.preventionweb.net.

For additional information, please contact:
United Nations Office for Disaster Risk Reduction (UNDRR)
7bis Avenue de la Paix, CH1211 Geneva 2, Switzerland.
Tel: +41 22 917 89 08

Presentation

Reducing disaster risks is, essentially, reducing inequalities and strengthening community resilience. This is the guiding principle of the G20 Disaster Risk Reduction Working Group (DRRWG), under the leadership of the Brazilian presidency. Recovery readiness is fundamental to effective disaster recovery, encapsulating the principles of being stronger, faster, and inclusive. A well-developed readiness plan can enhance a community's resilience, enabling it to withstand and recover more rapidly from disasters.

Robust and coordinated governmental actions are at the heart of this effort, as people in vulnerable situations face the greatest impacts of disasters and the greatest challenges in recovery, exacerbating social and economic inequalities. Inequality is a determining factor that amplifies the damage caused by disasters, especially for groups already at risk. Combined with the climate crisis, this vulnerability worsens, affecting the poorest and perpetuating a cycle of losses and damages.

Breaking this cycle is a priority for the Brazilian government, which, during its G20 presidency, launched the Task Force for a Global Alliance Against Hunger and Poverty, directly linking disaster risk reduction (DRR) with the promotion of inclusive and equitable development. Brazil's commitment is to create and implement a short, medium, and long-term agenda to reduce these vulnerabilities, mitigate the fatal impacts of disasters, and minimize material, psychological, cultural, and social losses. As extreme events become more frequent, prevention, response, and recovery actions must be expanded and strengthened to protect lives and reduce damage.

Strengthening recovery efforts involves building robust infrastructure and systems that can endure future disasters, thereby reducing the need for extensive repairs and rebuilding. Accelerating recovery ensures that affected communities can return to normalcy swiftly, minimizing economic losses and social disruptions. Inclusivity is crucial to ensure that all members of the community, including at-risk and marginalized groups, are considered and supported in the recovery process. Effective recovery readiness identifies the unique needs of different population segments and establishes strategies to address them, fostering a recovery process that is equitable and comprehensive.

The production of a document about Inclusive and Resilient Recovery in the Face of Increased Risks is a concrete action that materializes the efforts of the G20 and its guest countries. This document aims to strengthen the international network dedicated to social engagement and promote Inclusive and Resilient Recovery in disaster risk situations. Strengthening a culture of prevention is central to this effort through the dissemination of information, social mobilization, technical training, and clear and accessible communication.

Understanding the interconnected nature of disaster-related losses is essential for developing comprehensive disaster recovery plans that address both immediate needs and long-term challenges. By anticipating and mitigating cumulative losses, recovery efforts can be more effective and sustainable, ensuring that communities can rebuild stronger and more resilient than before.

Brazilian Presidency of the G20 Disaster Risk Reduction Working Group

Waldez Goes
Ministry of Regional
Development and Integration

MINISTÉRIO DA INTEGRAÇÃO E DO DESENVOLVIMENTO REGIONAL

GOVERNO FEDERAL BRASIL UNIÃO E RECONSTRUÇÃO

Jader Barbalho Filho
Ministry of Cities

MINISTÉRIO DAS CIDADES

GOVERNO FEDERAL BRASIL UNIÃO E RECONSTRUÇÃO

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Background

Climate change has significantly impacted the scale, frequency and intensity of disasters, with increasing temperatures leading to more extreme weather events. Over the 50-year span of 1970 to 2020, natural hazards have increased five-fold. Countries are being struck by new hazards while still recovering from previous ones, leading to compounding and cascading losses. In such cases, already scarce resources become even more strained and recovery efforts are hindered. This evolving risk landscape at the local, national and global levels impacts the ability to recover and build back better with greater resilience.

The Group of Twenty (G20) plays a vital role in fostering international collaboration and providing leadership in disaster recovery and resilience building. By promoting policy coordination, mobilizing financial resources, offering technical assistance, supporting on the ground action, and enhancing data sharing, the G20 can help its member countries, and the global community build back better after disasters. The G20 DRR Working Group, in its final meeting in Chennai, India in 2023, recognized progress in enhancing disaster preparedness and response but expressed concern that recovery, rehabilitation and reconstruction practices often do not follow the recommendations of the Sendai Framework.[1]

This paper was called for by the Brazilian Presidency of the G20 DRR Working Group and is produced by the United Nations Office for Disaster Risk Reduction (UNDRR) and the International Recovery Platform. It builds on a side technical session of the G20 DRR Working Group Meeting in Rio de Janeiro, Brazil on 27 July 2024. This event was a response to the devastating floods in Rio Grande do Sul, Brazil in 2024 and provided a comprehensive overview and coordinated discussion of good practices and tested approaches to guide inclusive recovery.

The thematic event entitled *Delivering Inclusive and Resilient Recovery in the Face of Increased Risks* brought together speakers from across G20 Member States, invited countries, and international organizations. The speakers discussed the technical, financial, and institutional elements that have worked in other contexts and that could accelerate the design and implementation of inclusive and resilient recovery. The event was organized around case studies from countries around the world with specific experience and lessons learned drawn from past disasters.

The primary objective of this paper is to present the key takeaways of the session and highlight lessons learned from past disaster experiences through case studies. As disasters become increasingly complex, a systematic approach is essential to address their far-reaching impacts and to establish a robust foundation for inclusive and resilient recovery.

This paper does not encompass all issues associated with resilient and inclusive recovery. It is intended as a contribution to the G20 DRR Working Group's efforts to support better approaches to recovery by leveraging scenarios and lessons from around the world. Additionally, this paper will contribute to the development and rollout of the Readiness for Resilient Recovery Programme led by the International Recovery Platform (IRP)[2].

1 G20 Disaster Risk Reduction Working Group Meeting Outcome Document and Chair's Summary, https://g20drrwg.preventionweb.net/media/89205

2 The IRP established in 2005 and served by UNDRR is a global partnership working to strengthen building back better in recovery, rehabilitation, and reconstruction. Co-chaired by Government of Japan, it is a joint initiative of United Nation organizations, international financial institutions, national and local governments, and non-governmental organizations engaged in disaster recovery, and seeking to transform disasters into opportunities for sustainable development. The IRP also functions as one of the major knowledge repositories for response, recovery and reconstruction.

Introduction

Recovery readiness is fundamental to effective disaster recovery, encapsulated by the principles of being stronger, faster, and inclusive. A well-developed readiness plan can enhance a community's resilience, enabling it to withstand and more rapidly recover from disasters. Strengthening recovery efforts involves building robust infrastructure and systems that can endure future disasters, thereby reducing the need for extensive repairs and rebuilding. Accelerating recovery ensures that affected communities can return to normalcy swiftly, minimizing economic losses and social disruptions. Inclusivity is crucial to ensure that all members of the community, including at-risk and marginalized groups, are considered and supported in the recovery process. Effective recovery readiness identifies the unique needs of different population segments and establishes strategies to address them, fostering a recovery process that is equitable and comprehensive. By prioritizing preparedness, communities can mitigate the impacts of disasters, streamline recovery efforts, and promote a more resilient and inclusive society.

Disasters often lead to compounding losses, where the initial hazard event triggers a series of secondary effects that exacerbate the overall impact. These losses can affect multiple sectors simultaneously, creating a ripple effect that complicates recovery efforts. For example, the destruction of infrastructure, such as roads and bridges, can disrupt transportation and supply chains, hindering the delivery of essential goods and services. Similarly, the loss of livelihoods due to business closures can increase poverty and reduce economic stability, making it harder for communities to recover. Compounding losses also include social and psychological impacts, such as increased stress and trauma among affected populations, which can impede community cohesion and long-term recovery. Understanding the interconnected nature of these losses is essential for developing comprehensive disaster recovery plans that address both immediate needs and long-term challenges. By anticipating and mitigating compounding losses, recovery efforts can be more effective and sustainable, ensuring that communities can rebuild stronger and more resilient than before.

Between 2005 and 2017, within the USD 137 billion of development aid related to disasters, USD 9.60 out of every USD 10 was spent on post-disaster activities, namely recovery, relief and reconstruction[3]. This is due to the extensive resources required to rebuild infrastructure, homes, and businesses, as well as to restore public services and essential utilities. The financial burden of recovery is often compounded by the need for specialized materials and labor, which can be scarce and expensive in the aftermath of a disaster. Additionally, the economic disruption caused by disasters, such as lost productivity, decreased income, and increased unemployment, further escalates the costs associated with recovery. Governments and organizations must allocate substantial funds to support affected populations, implement rebuilding projects, and restore normalcy, which can

3 UNDRR. Financing prevention and de-risking investment.

strain budgets and divert resources from other critical areas. Furthermore, the urgency and scale of recovery efforts can lead to inefficiencies and increased expenses, especially in regions with limited financial resilience. Investing in preventive measures and robust recovery readiness can help mitigate some of these costs by reducing the extent of damage and streamlining the recovery process.

Disasters have the potential to significantly derail a country's progress toward achieving the Sustainable Development Goals (SDGs). These events can disrupt advancements across all SDG indicators by damaging infrastructure, disrupting education and healthcare services, increasing poverty and inequality, and harming the environment. In this context, adopting an inclusive and resilient approach to disaster recovery is essential for maintaining and advancing sustainable development. Inclusive recovery ensures that all segments of society, particularly the most vulnerable and marginalized groups, are supported and have equal opportunities to rebuild and thrive. An inclusive recovery should address systemic inequalities and promote social cohesion, which are crucial for long-term sustainability. Resilient recovery focuses on strengthening systems and infrastructure to better withstand future disasters, thereby safeguarding progress toward the SDGs. By integrating inclusive and resilient recovery practices, countries can not only recover from immediate setbacks but also build a foundation for continued sustainable growth. However, resilient and inclusive recovery also faces many obstacles, as documented by the International Recovery Platform below.

Key Challenges for Resilient and Inclusive Recovery[4]:

- **Funding and Financial Constraints**: Securing adequate funding for reconstruction that incorporates resilience measures is often a major challenge. Governments and affected communities may lack the financial resources needed, and international aid can be limited or slow to arrive.
- **Technical Expertise and Capacity:** Implementing resilient building practices requires technical expertise that may not be available locally. Training and capacity-building efforts are necessary, but these take time and resources.
- **Regulatory and Policy Barriers:** Existing regulations and building codes may not support resilient reconstruction. Updating policies and enforcing new standards can be a slow and contentious process, especially in regions with weak governance.
- **Coordination and Planning:** Effective recovery requires coordination between multiple stakeholders, including government agencies, non-governmental organizations, and the private sector. Ensuring all parties work together toward common goals can be difficult, especially in the chaotic aftermath of a disaster.
- **Community Involvement:** Engaging local communities in the rebuilding process is crucial for ensuring that new infrastructure meets their needs and gains their support. However, achieving meaningful community participation can be challenging due to displacement, trauma, and lack of trust.
- **Environmental Considerations:** Building back better requires integrating environmental sustainability into reconstruction efforts. This involves addressing issues like land use, water management, and biodiversity conservation, which can be complex and contentious.
- **Economic Disruption:** Disaster events often cause significant economic disruption, making it hard for local economies to support resilient reconstruction. Businesses may be destroyed, jobs lost, and tax revenues diminished, creating a difficult financial environment for rebuilding.
- **Long-Term Commitment:** Building back better is a long-term process that requires sustained commitment and investment. Political cycles, donor fatigue, and changing priorities can lead to a loss of focus on resilience over time.
- **Social Equity:** Ensuring that rebuilding efforts benefit all segments of society, especially the most vulnerable, is a significant challenge. There is a risk that reconstruction may exacerbate existing inequalities if not managed carefully.

4 The key challenges for a resilient recovery shared by the International Recovery Platform in the G20 Disaster Risk Reduction Working Group Thematic Event: Delivering Inclusive and Resilient Recovery in the Face of Increased Risks, on 27 July 2024.

Key Takeaways: Delivering Inclusive and Resilient Recovery in the Face of Increased Risks

Takeaway 1: Promoting inclusion is crucial for a comprehensive recovery

Disaster recovery requires a deep understanding of the unique needs and circumstances of affected individuals. Engaging with communities is crucial to ensure that no one is left out of the recovery process, but engagement alone is insufficient. A successful recovery strategy must begin with a thorough assessment of the specific situations people face—whether they have access to banking services, the type of housing they currently live in, and where they will need to be accommodated once homes are rebuilt. Tailoring recovery efforts to meet people where they are enables a more effective response and ensures the recovery process is inclusive and responsive to the diverse challenges they face.

Disasters often deepen existing inequalities. According to the World Bank, 26 million people are pushed into poverty each year due to extreme weather events, if adequate support is not provided.[5] A top-down approach to recovery is often ineffective, as it may fail to reach and meaningfully assist affected communities. Instead, recovery efforts must be community-centered, leveraging local knowledge and resources to create lasting change.

It is essential to distinguish between equality and equity in disaster recovery. Equality means providing the same resources to everyone, while equity recognizes that different individuals and communities start from different levels of advantage or disadvantage. For example, investing 1dollar in a well-off community will have a vastly different impact than investing the same amount in a poorer community. A vision for equitable recovery must acknowledge these differences and allocate resources in a way that ensures fair outcomes, not merely restoring the status quo, but building a more just and resilient society.

An inclusive response and recovery require a comprehensive, all-of-society approach that prioritizes the visibility and support of vulnerable groups. Actively engaging these populations helps identify their specific needs and vulnerabilities, allowing for the development of targeted resilience strategies. The Sendai Framework for Disaster Risk Reduction emphasizes the importance of full, equal, and meaningful participation of all groups in the recovery process.[6]

5 Hallegatte, S., Vogt-Schilb, A., Bangalore, M., & Rozenberg, J. (2016).
6 UNDRR. (2023). Inclusive disaster risk reduction means resilience for everyone.

To ensure vulnerable populations are fully integrated into recovery plans, improving data collection on these groups is essential. Establishing trust and engagement mechanisms within communities is the first step in bringing vulnerable populations into support systems and enhancing their access to appropriate resources. By building capacity and addressing existing gaps before disasters occur, governments can better support community readiness and resilience. It is vital to include all segments of society in recovery efforts, integrating equity-focused policies that empower vulnerable groups to shape their own responses.

Inclusive recovery aligns with the principles of sustainable development by addressing the root causes of vulnerability and building long-term resilience. By focusing on reducing inequalities and tackling systemic challenges, this approach enables communities not only to recover from disasters, but also to strengthen their capacity to withstand future shocks. Inclusive recovery considers all aspects of community life—economic stability, social cohesion, and public health—ensuring a holistic approach that leads to more comprehensive and effective recovery efforts. Strengthening social protection systems and enhancing government capacities are essential steps toward fostering a truly inclusive recovery, one that not only restores what was lost but builds a more equitable and resilient future for all.

In delivering inclusive and resilient recovery in the face of increased risks, it is essential to prioritize equity and community-centered approaches. As disasters exacerbate existing inequalities, recovery strategies must focus on addressing the diverse needs of vulnerable populations, ensuring that no one is left behind. By engaging communities, collecting accurate data, and tailoring support to specific challenges, we can create a recovery process that builds not just resilience but also a more just and equitable society. Inclusive recovery is not about restoring the status quo, but about empowering all communities to emerge stronger, more cohesive, and better prepared for the future of increasing risks.

Indonesia: Changing Land Tenure and Inheritance Rights to Protect Women and Children in Aceh Post Indian Ocean Tsunami 2004.

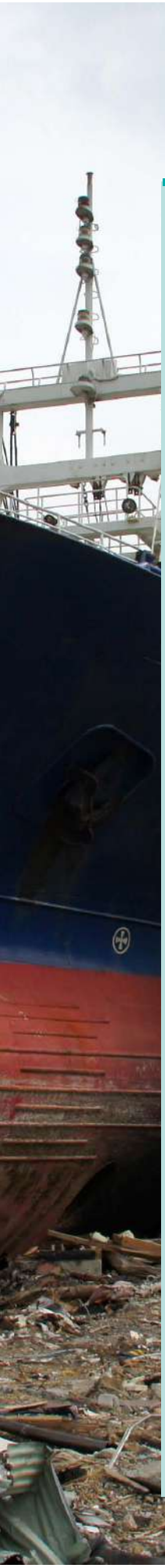
The devastating 2004 earthquake and tsunami in Aceh, Indonesia, created significant challenges, particularly through the widespread loss of land rights documentation and the displacement of many residents. The destruction of critical records, such as land titles, birth certificates, and property deeds, complicated the ability of individuals to prove ownership and claim inheritance, leading to numerous legal disputes. Women and orphans were especially affected, as they often faced discrimination and challenges in asserting their rights under traditional customs and Islamic law, despite the latter recognizing women's inheritance rights.

In response, Aceh implemented several crucial measures to address these issues. The Baitul Mal, a religious institution, was established to provide guardianship and manage assets for orphans, ensuring their rights were protected. To further strengthen the protection of vulnerable groups, Aceh enacted Qanuns—local laws—between 2008 and 2009, focusing on child protection and women's rights. These laws are integral to Aceh's special autonomy status and reflect the region's adherence to conservative Islamic values.

Moreover, in 2006, Aceh introduced the Joint Land Titling Policy, which aimed to secure equal land ownership rights for both husbands and wives. This policy has been instrumental in increasing women's land ownership, thereby empowering them economically. The Citizenship Administration Forum, established under the Aceh Rehabilitation and Reconstruction Programme (ARRP), played a vital role in addressing population administration reform by bringing together government agencies, NGOs, and academic institutions. This forum promoted awareness of the importance of proper documentation and advocated for necessary reforms in administrative processes.

Through the combined efforts of these policies and institutions, Aceh has made significant progress in protecting the rights of orphans, women, and other vulnerable populations, contributing to the region's long-term recovery and resilience after the disaster.

Republic of Korea: Inclusive Flood Preparedness – Global Project on Disaster Risk Reduction



International cooperation in disaster risk reduction (DRR) is crucial from both geographical and economic perspectives. Disasters do not recognize borders, whether geographical or economic. For example, flood risks in Asia and the Pacific are transboundary, impacting multiple countries such as Cambodia, China, Lao People's Democratic Republic, Myanmar, , Thailand, , and Vietnam. A vivid illustration of this occurred in 2018 when a dam collapse in Laos triggered severe flooding in Cambodia, causing water levels to rise by 11.5 meters in some areas and forcing thousands to evacuate.

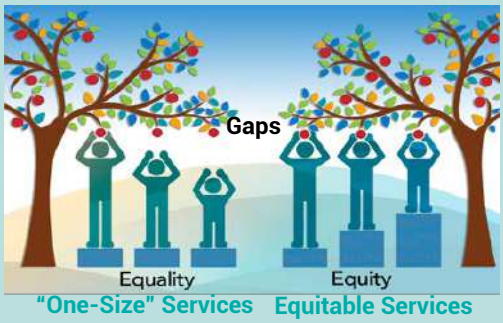
Furthermore, the economic impact of disasters in one country can have global repercussions. A disaster affecting a single nation can disrupt international supply chains, influence global markets, and generate far-reaching economic consequences beyond the immediate region.

Since 2013, the Republic of Korea's National Disaster Management Research Institute (NDMI) has been actively involved in DRR initiatives across the Philippines, Laos, Vietnam, and the Republic of Fiji. The NDMI's Global Disaster Risk Reduction Project focuses on the implementation of the Flood Early Warning System (FEWS) and automated rainfall warning systems. These systems monitor rainfall and water levels through strategically placed gauges, feeding data into a flood forecasting and warning system. Warnings are disseminated via sirens at designated warning posts in populated areas, urging timely evacuations. Once fully operational, this automated system provides real-time alerts to communities at risk.

The internal system, utilizing Web-GIS technology, offers highly detailed geographical information to accurately track and assess rainfall and water level fluctuations, enabling precise forecasting.

The impact of the Global DRR Project is evident in the contrasting outcomes of similar typhoon events in the Philippines. In December 2011, Typhoon Washi, with wind speeds of 65 km/h and atmospheric pressure of 1,000 hPa, caused USD 24 million in damage and resulted in 1,268 casualties. In contrast, following the implementation of the Global DRR Project, Typhoon Tembin in December 2017—with higher wind speeds of 86 km/h and atmospheric pressure of 990 hPa—caused USD 34 million in damage but resulted in only 44 casualties.

The Early Warnings for All initiative underscores the principle of equity, ensuring that services are tailored to meet the diverse needs of populations and achieve equitable outcomes. A one-size-fits-all approach is inadequate, as it overlooks varying experiences and vulnerabilities. No one is immune to disaster, making it imperative to apply DRR principles effectively to mitigate their impact as much as possible.



"One-Size" Services Equitable Services

Inclusion in response is crucial for ensuring that all populations, particularly the most vulnerable, are adequately protected and informed. Tailoring disaster risk reduction (DRR) efforts to the specific needs of different groups ensures equitable outcomes, as a one-size-fits-all approach often overlooks varying vulnerabilities. For instance, the success of the Global Disaster Risk Reduction Project in the Philippines, Laos, and Vietnam highlights the importance of inclusive early warning systems that reach diverse communities. By providing real-time flood warnings through local communication methods, the system helps at-risk populations evacuate in a timely manner, reducing casualties and damage. This inclusive approach not only saves lives but also builds resilience, fostering trust and collaboration across communities.

Takeaway 2: Financing for recovery should come from diversified sources

Financing is key to ensure the long-term success of recovery activities. However, one of the main reasons for insufficient recovery funding is a lack of preparedness. Specifically, financing mechanisms have not been established prior to a disaster, resources have not been earmarked for emergencies, and there are no procedures in place for the quick reallocation and distribution of funds. Additionally, policies for sharing financial resources between various levels of government or for determining eligibility for financial assistance have yet to be developed[7].

There are five important dimensions of recovery financing. In post-disaster recovery, the following elements are critical for successful recovery financing and recovery more broadly: 1) quantify the economic costs of the disaster and prepare recovery plans; 2) develop, review and adjust recovery budgets; 3) identify sources of financing as well as financing gaps; 4) coordinate and allocate financial resources; and 5) set up the mechanisms to manage and track funds.

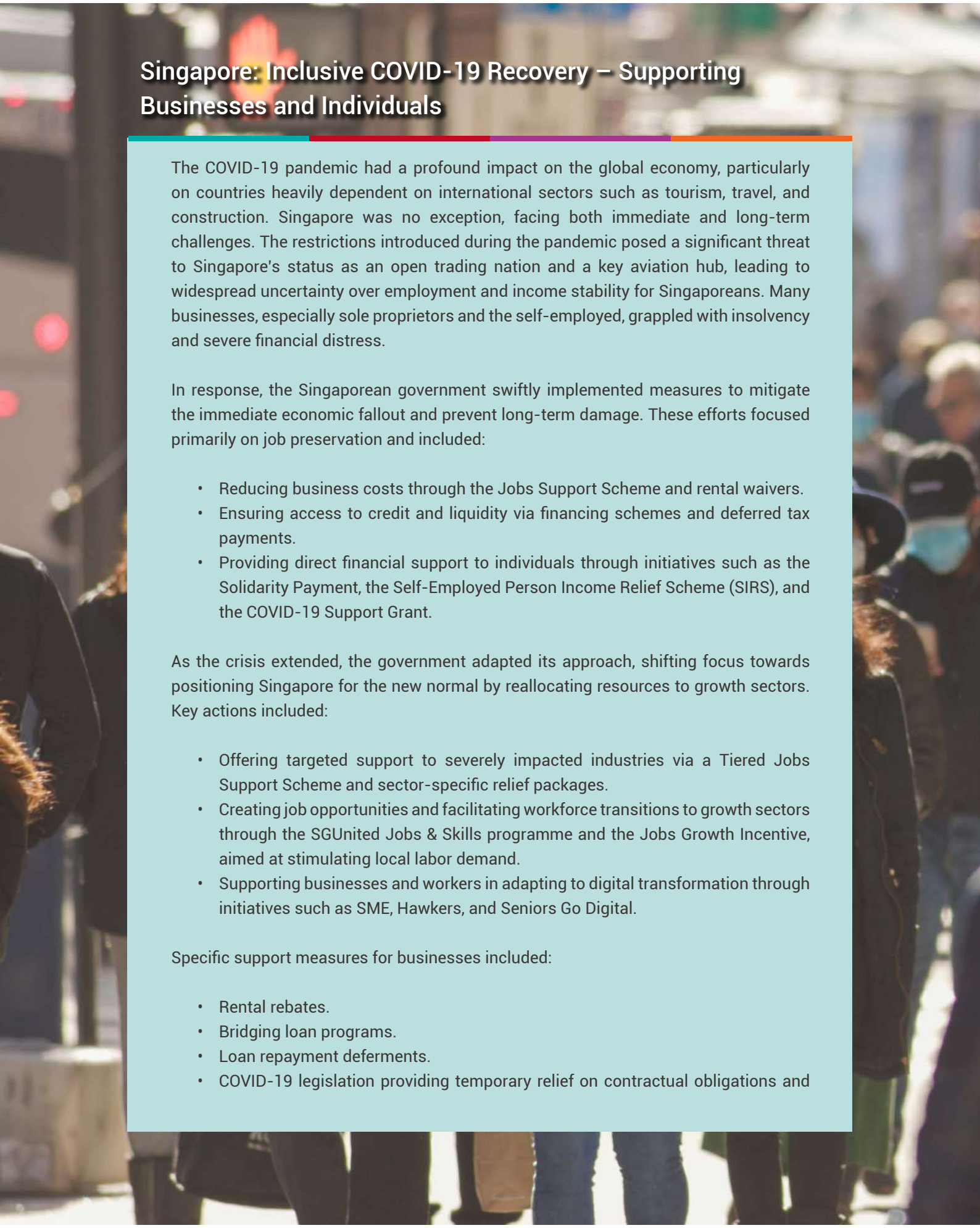
Effective response and recovery demand a comprehensive and collaborative commitment from all sectors of society and international partners:

- Government Engagement: All levels of government must play an active role in driving recovery efforts, ensuring a coordinated and cohesive approach.
- Community Involvement: Households and individuals should be empowered to actively participate and contribute meaningfully to their own recovery processes.
- International Support: Multilateral actors can provide critical assistance; however, this often comes with the challenge of managing an increased debt burden.
- Strategic Budgeting: Recovery and reconstruction efforts must be integrated into disaster management budgets, ensuring that resources are allocated appropriately.

At the national level, financing comprehensive policies for response, recovery and reconstruction requires careful planning and coordination between the government and all actors. While taking into account the challenges and limitations to access funds at the national level, diversifying financing sources is an essential approach to use the financing most adapted to the needs of the country. Leveraging sustainable financing opportunities for recovery and reconstruction is also an important avenue to explore to build long-term resilience.

Financing for recovery must come from diversified sources to ensure preparedness in the face of increasing risks. Relying solely on a single source of funding can lead to inefficiencies and inadequacies, particularly when faced with the scale and complexity of disasters exacerbated by climate change. Diversifying funding sources enhances the financial resilience of recovery efforts and ensures that resources are available to address the unique needs of vulnerable populations. Moreover, leveraging a variety of pre-arranged funding streams encourages innovative solutions and partnerships, fostering a collaborative environment that strengthens community resilience. By ensuring that financing mechanisms are diverse, we can better equip communities to recover from disasters while addressing underlying vulnerabilities and promoting sustainable development in the long term.

7 IRP. (2024). Good practices in financing recovery and building back better.



Singapore: Inclusive COVID-19 Recovery – Supporting Businesses and Individuals

The COVID-19 pandemic had a profound impact on the global economy, particularly on countries heavily dependent on international sectors such as tourism, travel, and construction. Singapore was no exception, facing both immediate and long-term challenges. The restrictions introduced during the pandemic posed a significant threat to Singapore's status as an open trading nation and a key aviation hub, leading to widespread uncertainty over employment and income stability for Singaporeans. Many businesses, especially sole proprietors and the self-employed, grappled with insolvency and severe financial distress.

In response, the Singaporean government swiftly implemented measures to mitigate the immediate economic fallout and prevent long-term damage. These efforts focused primarily on job preservation and included:

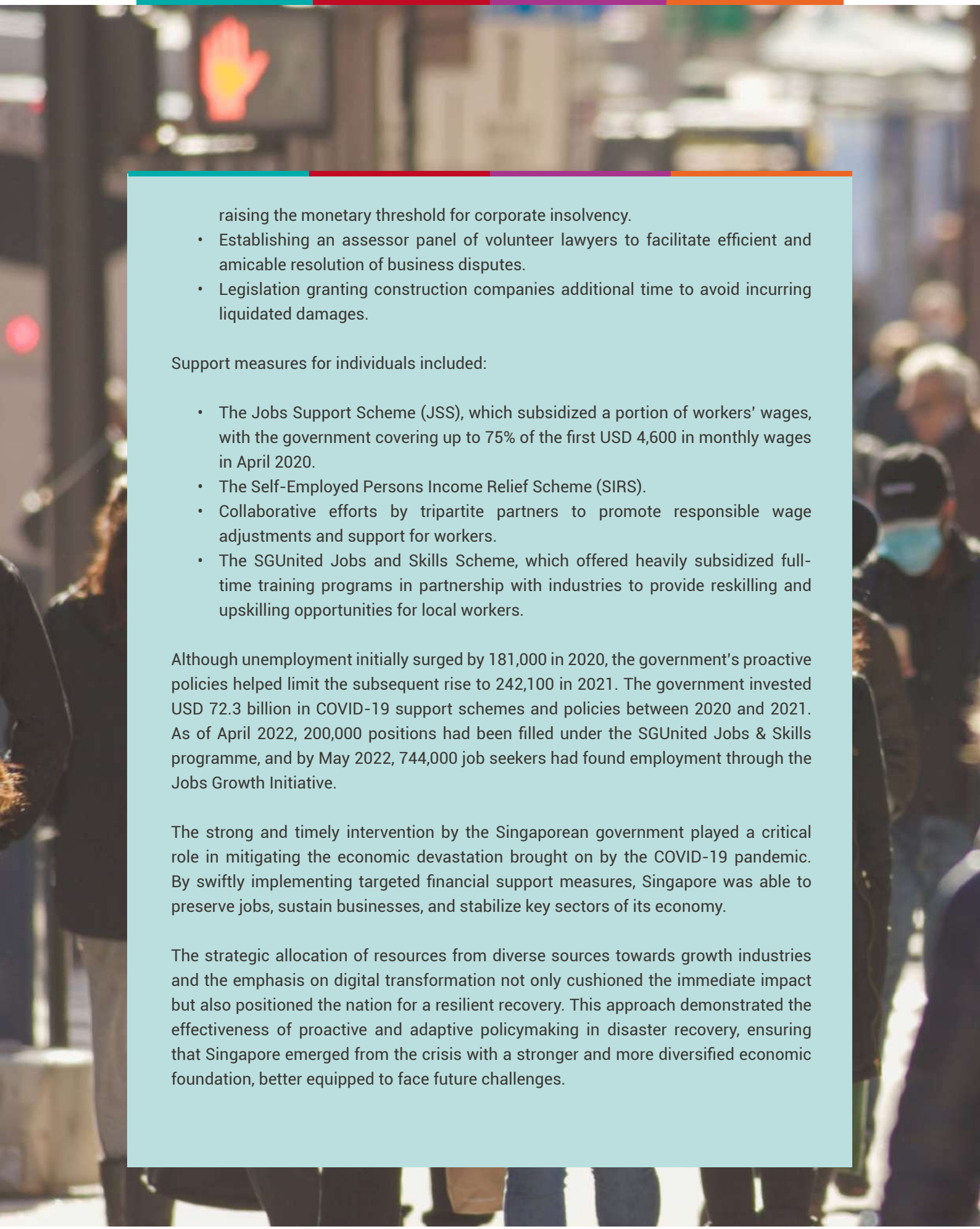
- Reducing business costs through the Jobs Support Scheme and rental waivers.
- Ensuring access to credit and liquidity via financing schemes and deferred tax payments.
- Providing direct financial support to individuals through initiatives such as the Solidarity Payment, the Self-Employed Person Income Relief Scheme (SIRS), and the COVID-19 Support Grant.

As the crisis extended, the government adapted its approach, shifting focus towards positioning Singapore for the new normal by reallocating resources to growth sectors. Key actions included:

- Offering targeted support to severely impacted industries via a Tiered Jobs Support Scheme and sector-specific relief packages.
- Creating job opportunities and facilitating workforce transitions to growth sectors through the SGUnited Jobs & Skills programme and the Jobs Growth Incentive, aimed at stimulating local labor demand.
- Supporting businesses and workers in adapting to digital transformation through initiatives such as SME, Hawkers, and Seniors Go Digital.

Specific support measures for businesses included:

- Rental rebates.
- Bridging loan programs.
- Loan repayment deferments.
- COVID-19 legislation providing temporary relief on contractual obligations and



raising the monetary threshold for corporate insolvency.
- Establishing an assessor panel of volunteer lawyers to facilitate efficient and amicable resolution of business disputes.
- Legislation granting construction companies additional time to avoid incurring liquidated damages.

Support measures for individuals included:

- The Jobs Support Scheme (JSS), which subsidized a portion of workers' wages, with the government covering up to 75% of the first USD 4,600 in monthly wages in April 2020.
- The Self-Employed Persons Income Relief Scheme (SIRS).
- Collaborative efforts by tripartite partners to promote responsible wage adjustments and support for workers.
- The SGUnited Jobs and Skills Scheme, which offered heavily subsidized full-time training programs in partnership with industries to provide reskilling and upskilling opportunities for local workers.

Although unemployment initially surged by 181,000 in 2020, the government's proactive policies helped limit the subsequent rise to 242,100 in 2021. The government invested USD 72.3 billion in COVID-19 support schemes and policies between 2020 and 2021. As of April 2022, 200,000 positions had been filled under the SGUnited Jobs & Skills programme, and by May 2022, 744,000 job seekers had found employment through the Jobs Growth Initiative.

The strong and timely intervention by the Singaporean government played a critical role in mitigating the economic devastation brought on by the COVID-19 pandemic. By swiftly implementing targeted financial support measures, Singapore was able to preserve jobs, sustain businesses, and stabilize key sectors of its economy.

The strategic allocation of resources from diverse sources towards growth industries and the emphasis on digital transformation not only cushioned the immediate impact but also positioned the nation for a resilient recovery. This approach demonstrated the effectiveness of proactive and adaptive policymaking in disaster recovery, ensuring that Singapore emerged from the crisis with a stronger and more diversified economic foundation, better equipped to face future challenges.

Australia: Current Review of Australia's Disaster Recovery Funding Arrangements

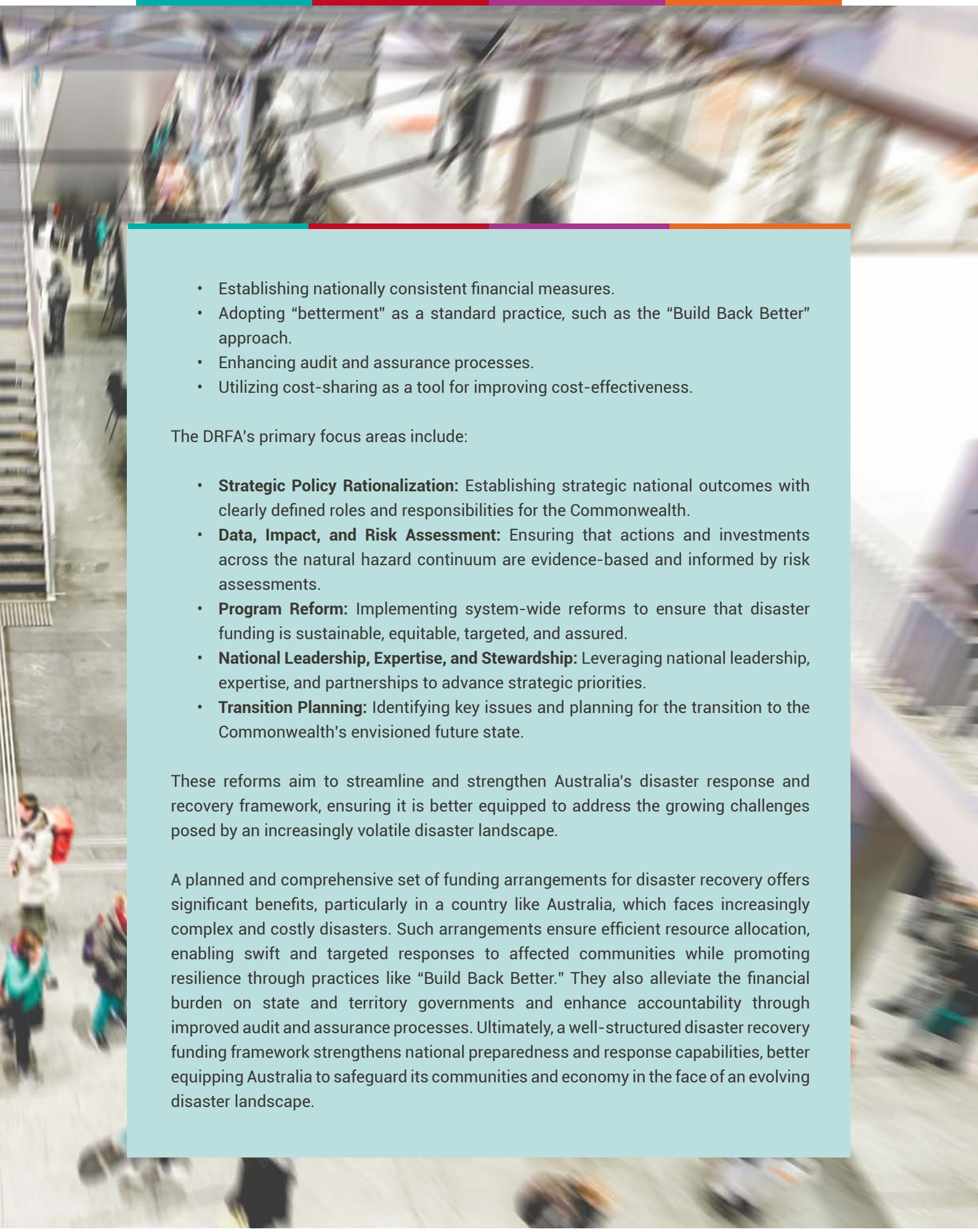
Australia is increasingly facing a more challenging disaster landscape, largely due to the escalating impacts of climate change, which are intensifying the size, scale, cost, and complexity of disaster events. In 2016, the estimated cost of disaster response and recovery stood at USD 18.2 billion, a figure projected to soar to USD 73 billion by the 2060s. Many communities are caught in a relentless cycle of recovery and response, while the disaster funding framework remains complex and fragmented.

The Disaster Recovery Funding Arrangements (DRFA) in Australia were initially established in the 1970s, with the current framework implemented in 2018. The focus of disaster response and recovery has evolved significantly since the 1970s, when efforts were predominantly centered on infrastructure. Today, there is a growing emphasis on supporting communities and addressing "soft recovery" needs. The DRFA operates on a cost-sharing basis between the Commonwealth and state/territory governments, financing disaster assistance in the aftermath of rapid-onset disasters or acts of terrorism. Its primary aim is to provide aid to disaster-affected individuals and communities while alleviating the substantial financial burden on state and territory governments.

Although the DRFA covers a broad range of disasters, it primarily addresses environmental events such as bushfires, earthquakes, floods, storms, cyclones, storm surges, landslides, tsunamis, meteorite strikes, and tornadoes. However, certain hazards, including droughts, animal diseases, and pandemics, fall outside its current scope.

At the core of the DRFA is the understanding that state and territory governments are best positioned to determine the type and level of assistance required following a disaster. States have the flexibility to deploy necessary recovery assistance, though these efforts are not intended to replace self-help strategies such as insurance or state-level disaster mitigation.

Given the escalating costs of disaster response and recovery, a series of reviews have been conducted to examine the challenges of the existing disaster financing mechanisms and propose recommendations for more effective responses. These reviews have identified four key areas for potential reform:



- Establishing nationally consistent financial measures.
- Adopting "betterment" as a standard practice, such as the "Build Back Better" approach.
- Enhancing audit and assurance processes.
- Utilizing cost-sharing as a tool for improving cost-effectiveness.

The DRFA's primary focus areas include:

- **Strategic Policy Rationalization:** Establishing strategic national outcomes with clearly defined roles and responsibilities for the Commonwealth.
- **Data, Impact, and Risk Assessment:** Ensuring that actions and investments across the natural hazard continuum are evidence-based and informed by risk assessments.
- **Program Reform:** Implementing system-wide reforms to ensure that disaster funding is sustainable, equitable, targeted, and assured.
- **National Leadership, Expertise, and Stewardship:** Leveraging national leadership, expertise, and partnerships to advance strategic priorities.
- **Transition Planning:** Identifying key issues and planning for the transition to the Commonwealth's envisioned future state.

These reforms aim to streamline and strengthen Australia's disaster response and recovery framework, ensuring it is better equipped to address the growing challenges posed by an increasingly volatile disaster landscape.

A planned and comprehensive set of funding arrangements for disaster recovery offers significant benefits, particularly in a country like Australia, which faces increasingly complex and costly disasters. Such arrangements ensure efficient resource allocation, enabling swift and targeted responses to affected communities while promoting resilience through practices like "Build Back Better." They also alleviate the financial burden on state and territory governments and enhance accountability through improved audit and assurance processes. Ultimately, a well-structured disaster recovery funding framework strengthens national preparedness and response capabilities, better equipping Australia to safeguard its communities and economy in the face of an evolving disaster landscape.

Takeaway 3: Resilient recovery is built through coordinated and inclusive planning processes

To achieve a resilient recovery after a disaster, it is essential to have a clear vision for the future, established long before disaster strikes. This vision requires dedicated time, active community engagement, and significant investment in the community. By building resilience in advance, communities can better withstand disasters and recover more effectively, ensuring that recovery efforts are not just reactive but are guided by a strategic plan that reflects the community's long-term needs and aspirations.

The World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR) estimate that building back better and more inclusively can reduce the impact of future risks on people's livelihoods and well-being by as much as 31 percent. The report shows that small island states with particularly high-risk profiles could reduce annual losses by an average of 59 percent.[8]

Response, recovery and reconstruction systems need to be put in place in advance and depending on the risk profile of each country. However, pre-existing structural barriers and inequities can significantly challenge implementation. To address these challenges, it is essential not only to ensure meaningful and active engagement with all population groups, but also to enable a comprehensive system with coordination mechanisms between all actors and stakeholders.

A key insight from the thematic event emphasized that *"progress moves at the speed of trust,"* underscoring the necessity of establishing trust and engagement mechanisms before disasters occur to facilitate effective recovery efforts. Consequently, recovery can only be as effective as the planning, coordination and trust established prior to the hazard event. When people are displaced and their lives are disrupted, trust in institutions and recovery efforts can quickly erode. Additionally, when resources are scarce, they are often allocated to more advantaged groups, exacerbating the mistrust between excluded populations and the government. To rebuild this trust, it is essential to understand the specific circumstances and backgrounds of those affected. The effectiveness of recovery efforts hinges on the design and implementation of delivery mechanisms that are sensitive to the needs and conditions of those impacted. Tailored approaches that consider the diverse experiences and challenges people face are key to restoring stability and confidence in the recovery process. This understanding allows recovery teams to determine where individuals and communities can realistically and sustainably be relocated or housed after a disaster.

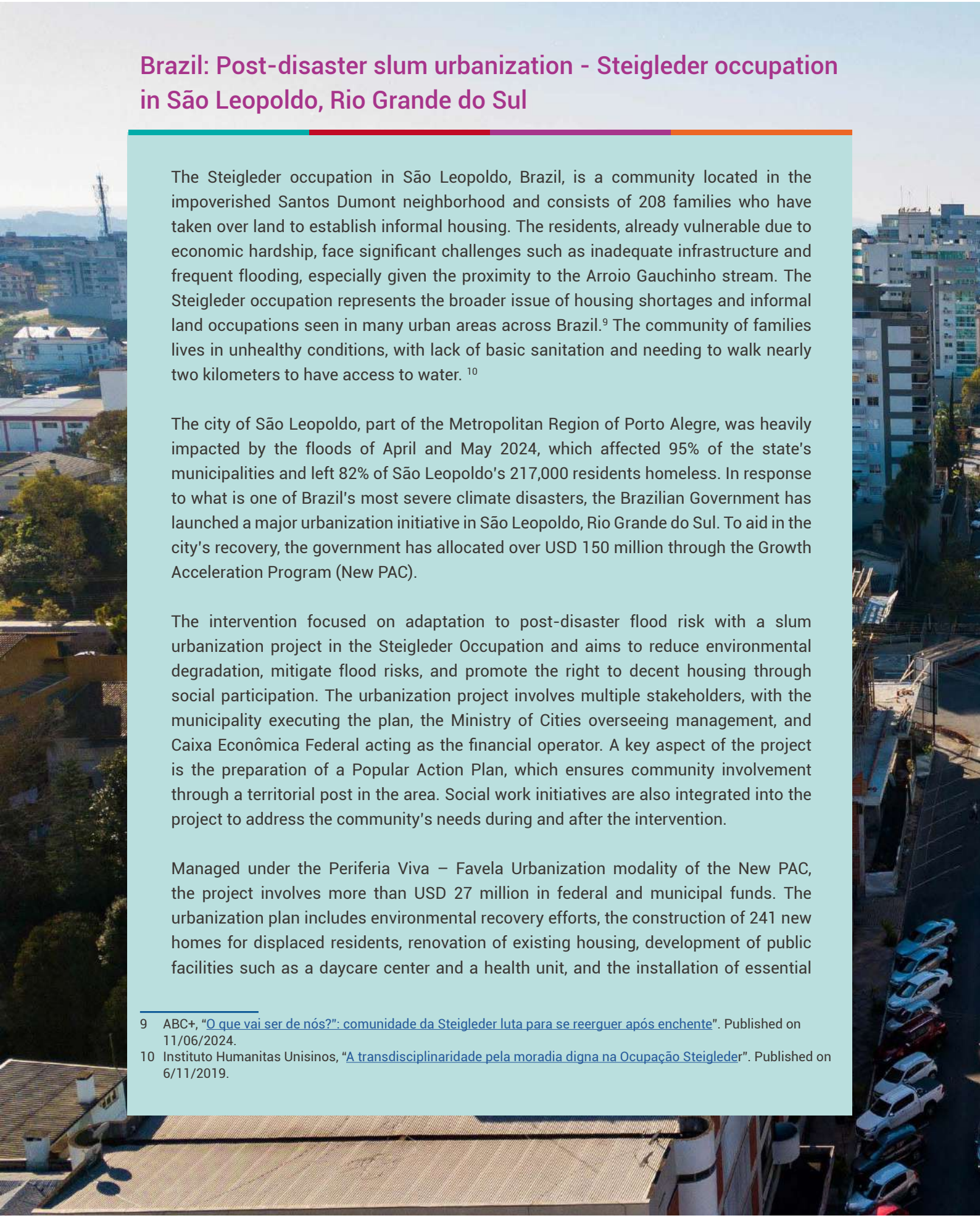
Resilient recovery from disasters requires a systemic approach that goes beyond simply rebuilding what was lost; it involves creating a more robust and adaptive

8 Hallegatte, S., Rentschler, J., & Walsh, B. (2018).

framework that can better withstand future shocks. This approach integrates economic, social, environmental, and institutional dimensions, recognizing that these elements are deeply interconnected. Resilient recovery emphasizes the importance of strengthening infrastructure, enhancing social cohesion, and fostering inclusive economic growth, while also addressing the vulnerabilities that disasters expose. It involves proactive planning, investment in disaster risk reduction, and the incorporation of sustainable practices into the recovery process. By taking a holistic view that considers the long-term impacts and opportunities for improvement, a systemic approach to resilient recovery not only helps communities bounce back but also ensures they are better prepared and more resilient in the face of future challenges.

Legislation plays a pivotal role in ensuring coordinated and resilient recovery from hazard events by establishing clear frameworks for action before disasters strike. Effective recovery depends on a strategic, long-term vision that is rooted in laws and policies designed to address risk reduction, inclusive rebuilding, and sustainable development. For example, pre-established legislation can create mechanisms for proactive planning, ensuring that all stakeholders, including government agencies, private sectors, and communities, collaborate efficiently when disasters occur. This legal foundation supports the integration of economic, social, and environmental considerations into recovery efforts, enabling a systemic approach that builds resilience across multiple dimensions.

Moreover, legislation can help overcome structural barriers and inequities by mandating the inclusion of vulnerable populations in recovery planning and ensuring that resources are allocated equitably. By fostering trust and accountability through transparent, legally supported processes, communities are more likely to engage actively, facilitating a smoother and more inclusive recovery. Trust, built through these legal frameworks, enhances the effectiveness of response systems, reducing the social and economic impacts of disasters. Ultimately, a well-coordinated, legally guided recovery framework ensures that rebuilding efforts are resilient, adaptive, and better equipped to handle future challenges.



Brazil: Post-disaster slum urbanization - Steigleder occupation in São Leopoldo, Rio Grande do Sul

The Steigleder occupation in São Leopoldo, Brazil, is a community located in the impoverished Santos Dumont neighborhood and consists of 208 families who have taken over land to establish informal housing. The residents, already vulnerable due to economic hardship, face significant challenges such as inadequate infrastructure and frequent flooding, especially given the proximity to the Arroio Gauchinho stream. The Steigleder occupation represents the broader issue of housing shortages and informal land occupations seen in many urban areas across Brazil.[9] The community of families lives in unhealthy conditions, with lack of basic sanitation and needing to walk nearly two kilometers to have access to water. [10]

The city of São Leopoldo, part of the Metropolitan Region of Porto Alegre, was heavily impacted by the floods of April and May 2024, which affected 95% of the state's municipalities and left 82% of São Leopoldo's 217,000 residents homeless. In response to what is one of Brazil's most severe climate disasters, the Brazilian Government has launched a major urbanization initiative in São Leopoldo, Rio Grande do Sul. To aid in the city's recovery, the government has allocated over USD 150 million through the Growth Acceleration Program (New PAC).

The intervention focused on adaptation to post-disaster flood risk with a slum urbanization project in the Steigleder Occupation and aims to reduce environmental degradation, mitigate flood risks, and promote the right to decent housing through social participation. The urbanization project involves multiple stakeholders, with the municipality executing the plan, the Ministry of Cities overseeing management, and Caixa Econômica Federal acting as the financial operator. A key aspect of the project is the preparation of a Popular Action Plan, which ensures community involvement through a territorial post in the area. Social work initiatives are also integrated into the project to address the community's needs during and after the intervention.

Managed under the Periferia Viva – Favela Urbanization modality of the New PAC, the project involves more than USD 27 million in federal and municipal funds. The urbanization plan includes environmental recovery efforts, the construction of 241 new homes for displaced residents, renovation of existing housing, development of public facilities such as a daycare center and a health unit, and the installation of essential

9 ABC+, "O que vai ser de nós?": comunidade da Steigleder luta para se reerguer após enchente". Published on 11/06/2024.

10 Instituto Humanitas Unisinos, "A transdisciplinaridade pela moradia digna na Ocupação Steigleder". Published on 6/11/2019.

infrastructure like water, sewage, and paving. These efforts are complemented by two additional federal investments: a sewage treatment plant and the construction of 96 affordable housing units under the Minha Casa, Minha Vida – Entidades (My house, my life – Entities) Program, which supports low-income families through subsidized financing.

The expected outcome is a significant improvement in the urban, social, and environmental conditions of the Steigleder Occupation and its surrounding neighborhood. The project aims to mitigate flood risks, enhance housing and sanitation conditions, and provide essential public services. The initiative also emphasizes the Brazilian government's role in driving reconstruction efforts, using federal funding and coordinated public policy to address socio-environmental risks and promote citizenship among low-income populations. By fostering social participation and coordinating across multiple levels of government, this public policy initiative seeks to combat inequalities and reduce vulnerabilities.

The significance of this project extends beyond immediate recovery, serving as a model for resilient urban development in disaster-prone areas. By integrating environmental restoration with social infrastructure and housing improvements, the urbanization of the Steigleder Occupation not only rebuilds the community but also fortifies it against future climate-related challenges. This comprehensive approach to resilient recovery ensures that the city is better equipped to withstand and recover from future disasters, ultimately contributing to the long-term sustainability and well-being of its residents.

Coordinated planning is essential for achieving resilient recovery from hazard events, as demonstrated by the urbanization initiative in the Steigleder occupation of São Leopoldo, Brazil. The effective collaboration among multiple stakeholders—including government agencies, community organizations, and financial institutions—ensures that recovery efforts are comprehensive, equitable, and tailored to the specific needs of vulnerable populations. This collaborative approach not only facilitates the rebuilding of physical infrastructure but also enhances social cohesion and fosters community participation, crucial for long-term sustainability. By addressing environmental risks and social inequalities, coordinated planning not only helps communities recover from immediate crises but also fortifies them against future challenges, ultimately contributing to their resilience and well-being.

To build a coordinated plan, recovery and reconstruction should be integral components of the national disaster management cycle and plan. National policies must be designed to proactively support and guide inclusive and resilient recovery processes. Systems should be in place before a disaster strikes, to ensure the most resilient recovery possible and minimize losses.

The "Building Back Better" (BBB) principles and framework use this coordinated planning as an opportunity not only to recover and rebuild, but also to integrate preparedness in the entire recovery and rebuilding activities. As some nations allocate more resources to recovery than to adaptation and prevention, it is important to note that coordinated planning for preparedness can reduce the impact of disasters. The UNDRR publication 'Words into Action' focused on Building Back Better outlines the benefits of this approach and how to implement it at the national level.[11]

In elaborating a coordinated plan for preparedness and thus recovery, ensuring that everyone's rights are respected is fundamental, and there are also significant economic impacts to consider. For instance, when someone remains unhoused long after a disaster, the consequences extend beyond just the monetary costs. Prolonged displacement has a compounding effect on individuals' welfare, particularly for the most vulnerable populations, leading to deeper and more lasting social and economic losses. Research, including studies linked with the Build Back Better (BBB) framework[12], underscore that the impact of hazard events is not limited to their immediate aftermath but continues to intensify over time, especially for at-risk populations. These events often exacerbate pre-existing inequalities, with disadvantaged groups—such as low-income communities, marginalized populations, and those with limited access to resources—bearing the brunt of the long-term consequences. The BBB framework emphasizes the need for recovery strategies that not only address the immediate effects of disasters but also focus on creating more resilient, equitable systems to prevent further harm to those already most at risk.

In disaster recovery, speed is often a double-edged sword—while moving quickly can lead to mistakes, it is also essential for minimizing economic and social impacts. A well-prepared community can recover faster and more responsibly, reducing the need for hasty decisions that might lead to long-term issues. By investing in preparedness, communities can avoid the economic trade-offs that come with rushed recovery efforts, ensuring a balance between speed and quality in the rebuilding process.

Avoiding welfare losses is a key objective in disaster recovery, and being prepared is critical to achieving this goal. No matter the level of preparation prior to a disaster, certain recovery activities will always be necessary. However, preparedness allows these activities to be carried out more efficiently, reducing the time needed to restore normalcy and minimizing long-term welfare losses. For example, in Small Island Developing States (SIDS), studies have shown that even with high vulnerability, advanced preparedness can significantly mitigate the long-term welfare losses associated with disasters[13]. Being ready not only speeds up recovery but also helps protect the well-being of affected populations, particularly those most at risk.

11 UNDRR. (2017). Words into Action guidelines: Build Back Better in recovery, rehabilitation and reconstruction.
12 Mannakkara, S., Wilkinson, S., & Potangaroa, R. (2018). Resilient Post Disaster Recovery through Building Back Better. Routledge; UNDRR. (2017). Words into Action guidelines: Build back better in recovery, rehabilitation and reconstruction
13 Noy, I. (2009).

Regional role of the Development Bank of Latin America and the Caribbean (CAF) in planning for resilient recovery

CAF's commitment to cost-effective rebuilding addresses the diverse needs of countries, but tracking fund allocation can sometimes be challenging. Ensuring that recovery efforts are effectively disbursed is vital to achieving inclusive outcomes and fostering resilience. CAF's role in post-disaster recovery goes beyond financing. CAF also leverages partnerships with international agencies to access technical expertise and innovative financing mechanisms, such as catastrophe bonds or climate adaptation funds, which can help countries manage risk more effectively.

By fostering cross-border cooperation and knowledge-sharing among Latin America and the Caribbean (LAC) countries, CAF helps the region as a whole become better prepared to face the growing threat of climate-related disasters. This collective approach not only strengthens regional resilience but also promotes sustainable development by aligning recovery efforts with global climate goals.

Countries in Latin America and the Caribbean expect a multilateral development bank like CAF to prioritize:

- **Effective response, recovery, and reconstruction:** CAF delivers responses that are customized to the specific needs of each country, recognizing that vulnerability to disasters varies widely across the region. For instance, countries prone to hurricanes may need stronger coastal defenses, while others may focus on earthquake-resistant infrastructure. CAF's ability to provide flexible and context-specific solutions is essential in supporting both short-term recovery and long-term reconstruction efforts that build resilience.
- **Inclusion:** A fundamental expectation of CAF is that recovery initiatives adhere to principles of equity, ensuring that vulnerable populations, such as low-income communities and marginalized groups, are not left behind. This aligns with CAF's broader mission of promoting social justice across the LAC region. By prioritizing inclusive recovery efforts, CAF supports "Building Back Better" strategies that not only restore but improve living conditions for those most affected by disasters, making recovery efforts more equitable and sustainable.
- **Resilience:** CAF's commitment to resilience is underpinned by adhering to the Build Back Better framework, which emphasizes the importance of creating stronger, more durable infrastructure capable of withstanding future disasters. This approach involves integrating disaster risk reduction (DRR) into reconstruction efforts, ensuring that communities are better prepared to face future risks. Projects financed by CAF often include improvements in urban planning, infrastructure resilience, and environmental sustainability, all aimed at reducing future vulnerability.

Countries also expect CAF to collaborate with a broad spectrum of sectors and stakeholders, including DRR agencies, finance, infrastructure, water and sanitation, education, and health. For instance, integrating urban planning with disaster risk reduction is essential for sustainable development.

To better prepare for hazard events, countries can employ various strategies such as anticipatory action, risk-informed frameworks, and scenario-based planning. These approaches enable proactive and informed decision-making, ensuring that nations are better equipped to manage future risks.

The multifaceted role of CAF in the region in recovery from hazard events reflects its broader mission of promoting sustainable and resilient development across Latin America and the Caribbean. Through a combination of tailored recovery strategies, cross-sector collaboration, and innovative risk-reduction tools, CAF has become an important regional actor creating a coordinated planning for countries to be better equipped to recover and build resilience.

Preparedness is fundamentally built through a coordinated planning process, which is essential for delivering inclusive and resilient recovery in the face of increasing risks posed by climate change. As a result, coordinated planning becomes a vital mechanism for building long-term resilience, enabling communities to adapt to the evolving challenges of climate change while promoting social cohesion and equity.

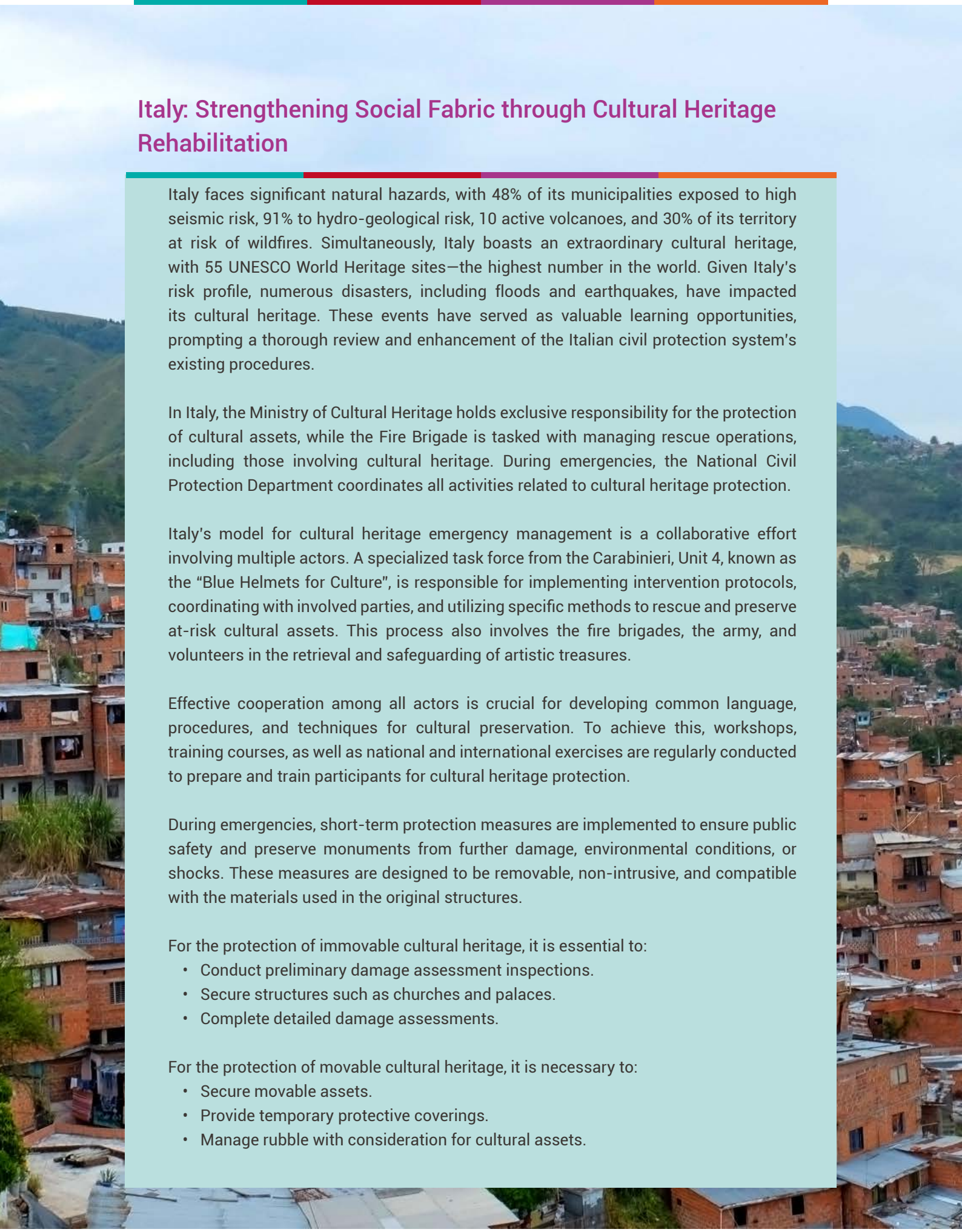
Takeaway 4: Readiness assessments are an important tool to continuously improve recovery systems

Readiness assessments are a critical component of disaster recovery and resilience planning. They involve evaluating the preparedness of communities, infrastructure, and systems to respond effectively to disasters. These assessments identify vulnerabilities, resource gaps, and potential challenges that could hinder recovery efforts. By understanding the current state of readiness, stakeholders can prioritize actions to strengthen resilience, such as improving emergency response plans, enhancing infrastructure durability, and ensuring equitable access to resources. Ultimately, readiness assessments enable communities to not only respond more effectively in the immediate aftermath of a disaster but also to recover more quickly and sustainably, reducing long-term impacts and building greater resilience to future events.

The readiness of governments is also a crucial factor in the success of recovery efforts. This readiness hinges on identifying and addressing capacity gaps before disasters occur. National and local governments often lack a clear understanding of their preparedness for hazards, making it imperative to properly assess and rectify any deficiencies in readiness.

Integrating readiness assessments into the national readiness framework is essential for identifying policy gaps and setting achievable goals for national governments. Although activating readiness at a national level presents significant challenges, these can be overcome through coordinated logistics across all levels of government. Long-term recovery efforts must prioritize the needs of the most vulnerable, even when facing resistance and challenges to paradigm shifts. Persistent advocacy for recovery is necessary to drive lasting change.

Readiness assessments are a crucial tool for continuously improving recovery systems, particularly for ensuring that recovery efforts are not only timely and efficient but also equitable and sustainable. Furthermore, in the face of increasing climate change risks, readiness assessments enable communities to adapt their strategies based on the evolving impacts of climate change. In this way, readiness assessments serve as a foundation for building resilience, ensuring that all community members are supported in times of crisis.



Italy: Strengthening Social Fabric through Cultural Heritage Rehabilitation

Italy faces significant natural hazards, with 48% of its municipalities exposed to high seismic risk, 91% to hydro-geological risk, 10 active volcanoes, and 30% of its territory at risk of wildfires. Simultaneously, Italy boasts an extraordinary cultural heritage, with 55 UNESCO World Heritage sites—the highest number in the world. Given Italy's risk profile, numerous disasters, including floods and earthquakes, have impacted its cultural heritage. These events have served as valuable learning opportunities, prompting a thorough review and enhancement of the Italian civil protection system's existing procedures.

In Italy, the Ministry of Cultural Heritage holds exclusive responsibility for the protection of cultural assets, while the Fire Brigade is tasked with managing rescue operations, including those involving cultural heritage. During emergencies, the National Civil Protection Department coordinates all activities related to cultural heritage protection.

Italy's model for cultural heritage emergency management is a collaborative effort involving multiple actors. A specialized task force from the Carabinieri, Unit 4, known as the "Blue Helmets for Culture", is responsible for implementing intervention protocols, coordinating with involved parties, and utilizing specific methods to rescue and preserve at-risk cultural assets. This process also involves the fire brigades, the army, and volunteers in the retrieval and safeguarding of artistic treasures.

Effective cooperation among all actors is crucial for developing common language, procedures, and techniques for cultural preservation. To achieve this, workshops, training courses, as well as national and international exercises are regularly conducted to prepare and train participants for cultural heritage protection.

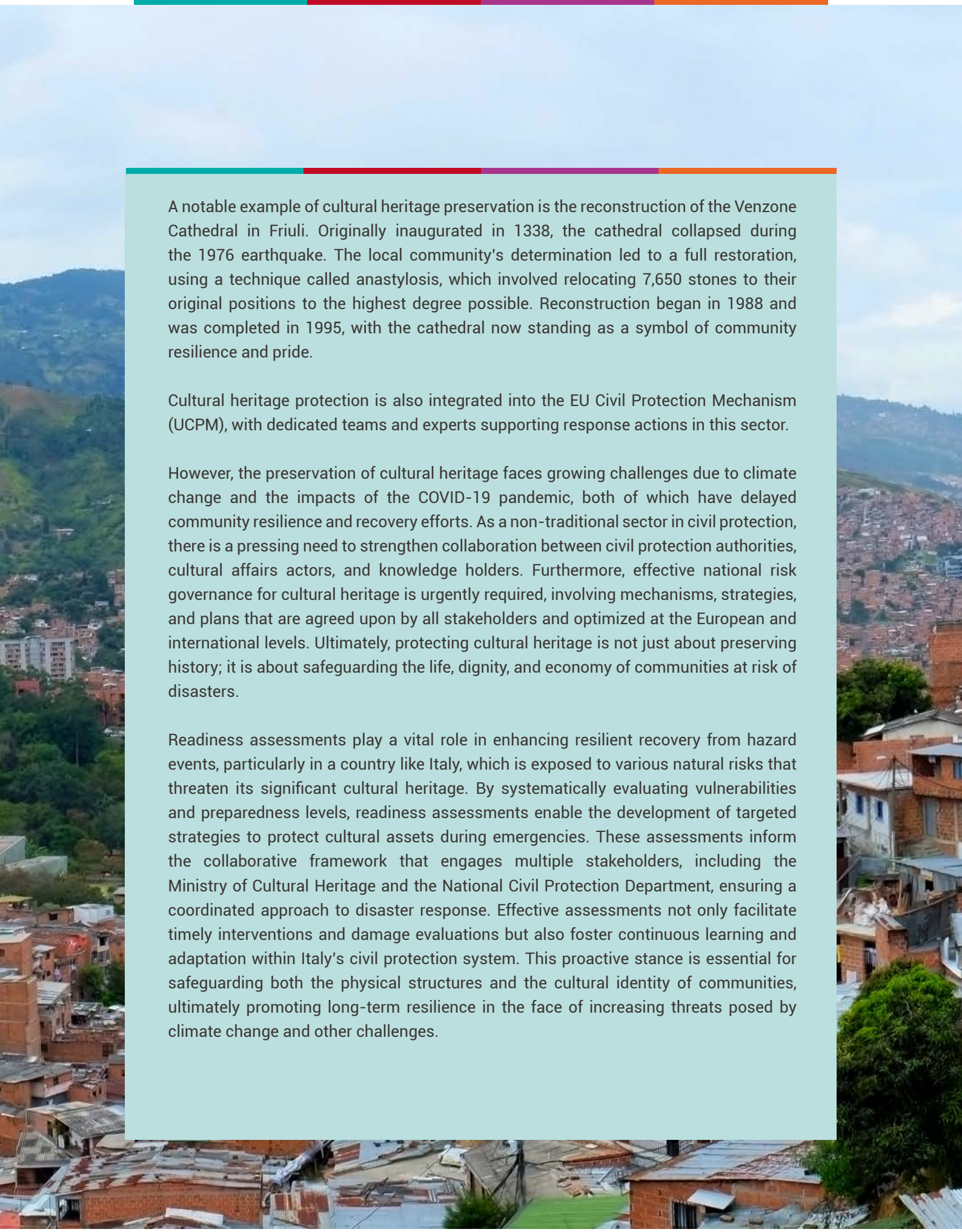
During emergencies, short-term protection measures are implemented to ensure public safety and preserve monuments from further damage, environmental conditions, or shocks. These measures are designed to be removable, non-intrusive, and compatible with the materials used in the original structures.

For the protection of immovable cultural heritage, it is essential to:

- Conduct preliminary damage assessment inspections.
- Secure structures such as churches and palaces.
- Complete detailed damage assessments.

For the protection of movable cultural heritage, it is necessary to:

- Secure movable assets.
- Provide temporary protective coverings.
- Manage rubble with consideration for cultural assets.



A notable example of cultural heritage preservation is the reconstruction of the Venzone Cathedral in Friuli. Originally inaugurated in 1338, the cathedral collapsed during the 1976 earthquake. The local community's determination led to a full restoration, using a technique called anastylosis, which involved relocating 7,650 stones to their original positions to the highest degree possible. Reconstruction began in 1988 and was completed in 1995, with the cathedral now standing as a symbol of community resilience and pride.

Cultural heritage protection is also integrated into the EU Civil Protection Mechanism (UCPM), with dedicated teams and experts supporting response actions in this sector.

However, the preservation of cultural heritage faces growing challenges due to climate change and the impacts of the COVID-19 pandemic, both of which have delayed community resilience and recovery efforts. As a non-traditional sector in civil protection, there is a pressing need to strengthen collaboration between civil protection authorities, cultural affairs actors, and knowledge holders. Furthermore, effective national risk governance for cultural heritage is urgently required, involving mechanisms, strategies, and plans that are agreed upon by all stakeholders and optimized at the European and international levels. Ultimately, protecting cultural heritage is not just about preserving history; it is about safeguarding the life, dignity, and economy of communities at risk of disasters.

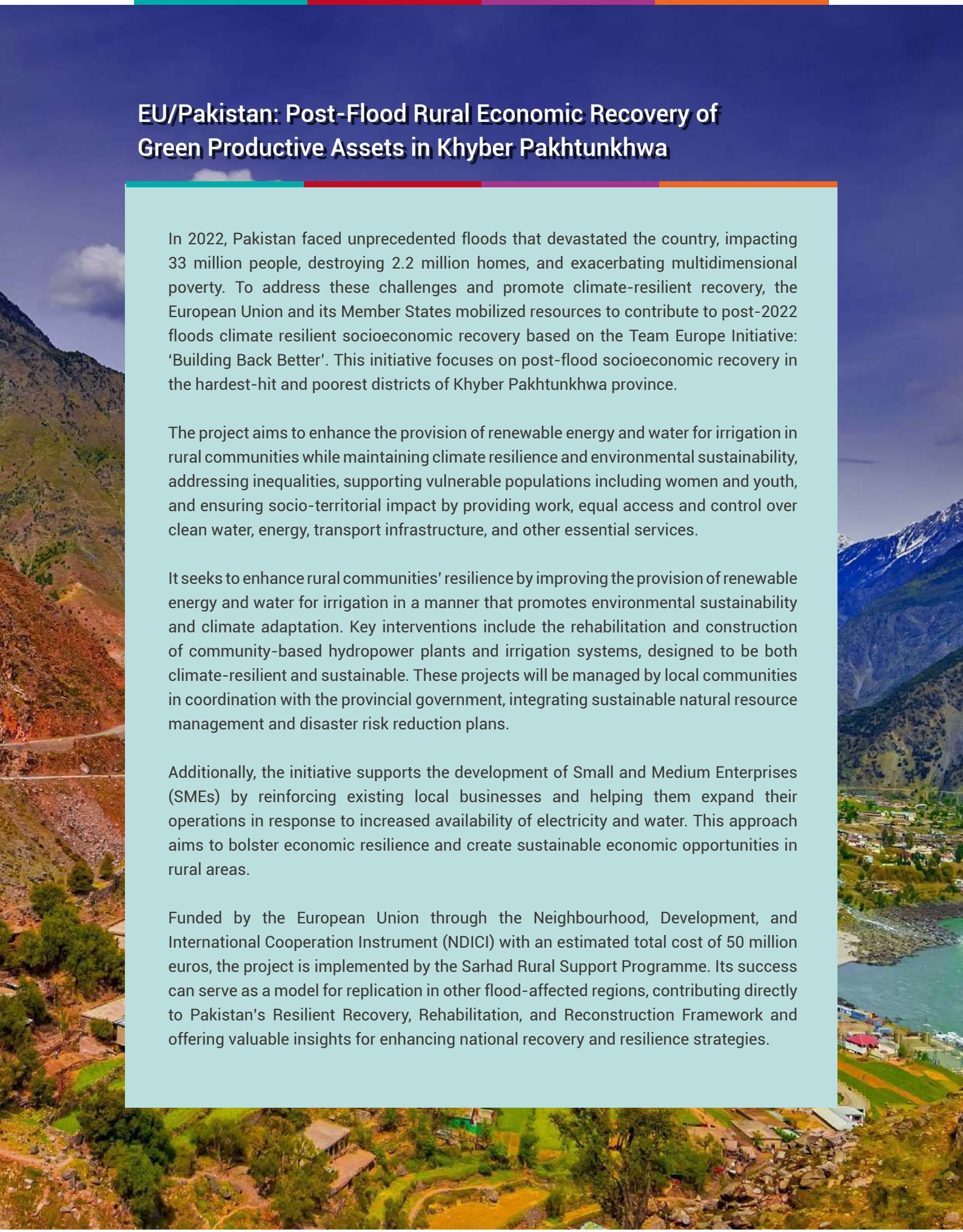
Readiness assessments play a vital role in enhancing resilient recovery from hazard events, particularly in a country like Italy, which is exposed to various natural risks that threaten its significant cultural heritage. By systematically evaluating vulnerabilities and preparedness levels, readiness assessments enable the development of targeted strategies to protect cultural assets during emergencies. These assessments inform the collaborative framework that engages multiple stakeholders, including the Ministry of Cultural Heritage and the National Civil Protection Department, ensuring a coordinated approach to disaster response. Effective assessments not only facilitate timely interventions and damage evaluations but also foster continuous learning and adaptation within Italy's civil protection system. This proactive stance is essential for safeguarding both the physical structures and the cultural identity of communities, ultimately promoting long-term resilience in the face of increasing threats posed by climate change and other challenges.

Takeaway 5: Recovery should be practiced during small hazard events to improve recovery systems before large-scale events strike

Disasters produce chaos and complexity, but also offer unique opportunities to recognize systems failures, reconfigure choices and channel resources to avoid or mitigate harm from future shocks — in short, to embrace risk-informed developmental approaches as a core element of disaster recovery. This requires a holistic approach that integrates financial, technical, regulatory, and social considerations, ensuring that reconstruction efforts lead to safer and more resilient communities.

In this sense, smaller events such as localized floods or drought represent an essential learning element. The response and recovery systems can be practiced during smaller events to evaluate whether coordination and actions are adequate to the needs of the affected population. Critical lessons learned can be drawn even from smaller events, which can be corrected and replicated across the country to ensure continuous improvement.

Large-scale hazard events such as the regional floods in Rio Grande do Sul or Hurricane Katrina need not be the only event to put the disaster systems under enough pressure to check their resilience and efficiency when facing such critical times. Resilience can be built progressively through an iterative process involving actors and stakeholders at all levels.



EU/Pakistan: Post-Flood Rural Economic Recovery of Green Productive Assets in Khyber Pakhtunkhwa

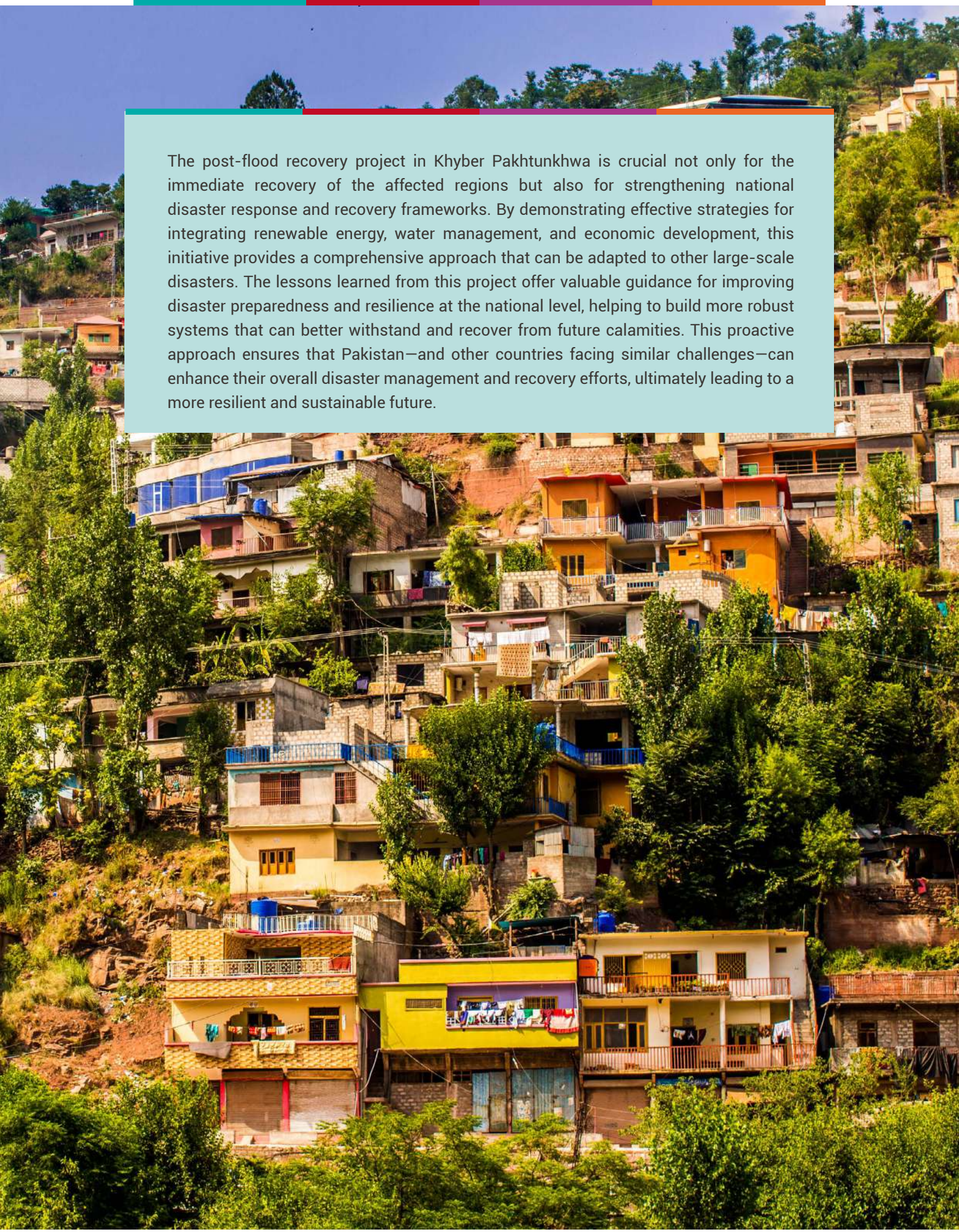
In 2022, Pakistan faced unprecedented floods that devastated the country, impacting 33 million people, destroying 2.2 million homes, and exacerbating multidimensional poverty. To address these challenges and promote climate-resilient recovery, the European Union and its Member States mobilized resources to contribute to post-2022 floods climate resilient socioeconomic recovery based on the Team Europe Initiative: 'Building Back Better'. This initiative focuses on post-flood socioeconomic recovery in the hardest-hit and poorest districts of Khyber Pakhtunkhwa province.

The project aims to enhance the provision of renewable energy and water for irrigation in rural communities while maintaining climate resilience and environmental sustainability, addressing inequalities, supporting vulnerable populations including women and youth, and ensuring socio-territorial impact by providing work, equal access and control over clean water, energy, transport infrastructure, and other essential services.

It seeks to enhance rural communities' resilience by improving the provision of renewable energy and water for irrigation in a manner that promotes environmental sustainability and climate adaptation. Key interventions include the rehabilitation and construction of community-based hydropower plants and irrigation systems, designed to be both climate-resilient and sustainable. These projects will be managed by local communities in coordination with the provincial government, integrating sustainable natural resource management and disaster risk reduction plans.

Additionally, the initiative supports the development of Small and Medium Enterprises (SMEs) by reinforcing existing local businesses and helping them expand their operations in response to increased availability of electricity and water. This approach aims to bolster economic resilience and create sustainable economic opportunities in rural areas.

Funded by the European Union through the Neighbourhood, Development, and International Cooperation Instrument (NDICI) with an estimated total cost of 50 million euros, the project is implemented by the Sarhad Rural Support Programme. Its success can serve as a model for replication in other flood-affected regions, contributing directly to Pakistan's Resilient Recovery, Rehabilitation, and Reconstruction Framework and offering valuable insights for enhancing national recovery and resilience strategies.



The post-flood recovery project in Khyber Pakhtunkhwa is crucial not only for the immediate recovery of the affected regions but also for strengthening national disaster response and recovery frameworks. By demonstrating effective strategies for integrating renewable energy, water management, and economic development, this initiative provides a comprehensive approach that can be adapted to other large-scale disasters. The lessons learned from this project offer valuable guidance for improving disaster preparedness and resilience at the national level, helping to build more robust systems that can better withstand and recover from future calamities. This proactive approach ensures that Pakistan—and other countries facing similar challenges—can enhance their overall disaster management and recovery efforts, ultimately leading to a more resilient and sustainable future.

Brazil: Slope Containment Works in Petrópolis, Rio de Janeiro, in partnership between the Federal Government and the Municipality of Petrópolis

Petrópolis, a city in the mountainous region of Rio de Janeiro, Brazil, has experienced devastating landslides due to heavy rainfall, making it one of the most disaster-prone areas in the country. In 2022, intense rainfall caused devastating landslides, which resulted in over 240 deaths. The city was left with exposed rocky slopes, heightening the risk of future landslides. To address this, the Brazilian Government, through the Growth Acceleration Program (PAC), initiated a series of strategic slope containment interventions to enhance safety and mitigate landslide risks. These efforts aim not only to protect homes and lives, but also to foster social development in vulnerable communities.

The primary objective of these interventions is to ensure the safety of residents, particularly those living in precarious housing conditions on steep slopes, by implementing comprehensive engineering solutions. The works, located in various neighborhoods of Petrópolis, involve the construction of anchored retaining walls, drainage systems, debris flow barriers, and other infrastructure improvements designed to stabilize the slopes and manage water flow. These measures are crucial in preventing future landslides and ensuring the long-term safety of both residents and infrastructure.

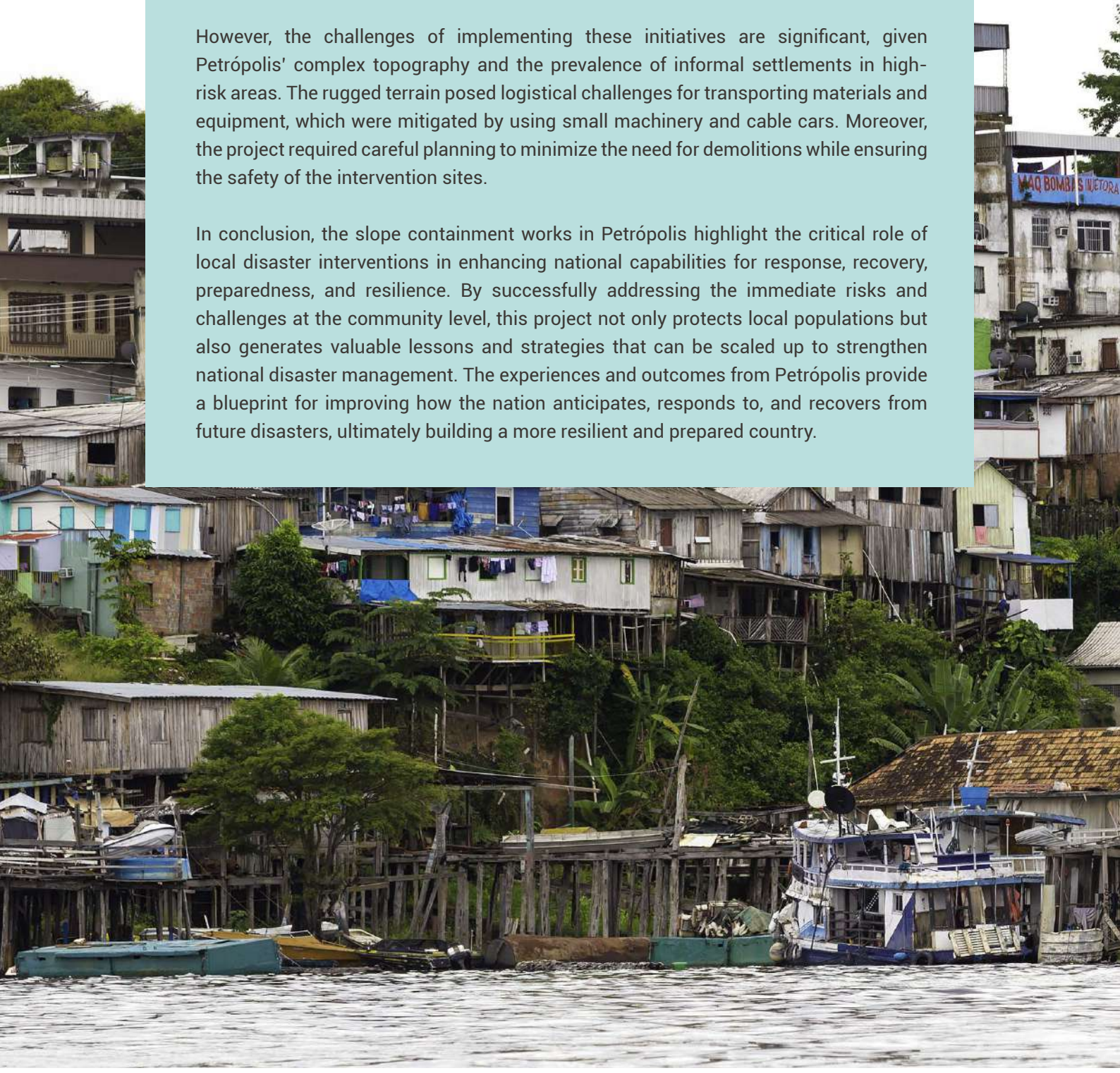
Implementation of these slope containment works was carried out by the City of Petrópolis with federal support. The interventions took place in neighborhoods such as Castelânea, Militar, and Valparaíso, where the terrain is characterized by steep slopes and precarious housing conditions. The engineering solutions include a range of structural measures, such as anchored retaining walls, concrete channels for rainwater, and dynamic barriers against debris flow. Additionally, cyclopean concrete walls and gabion channels were constructed to further protect residences and manage water runoff.

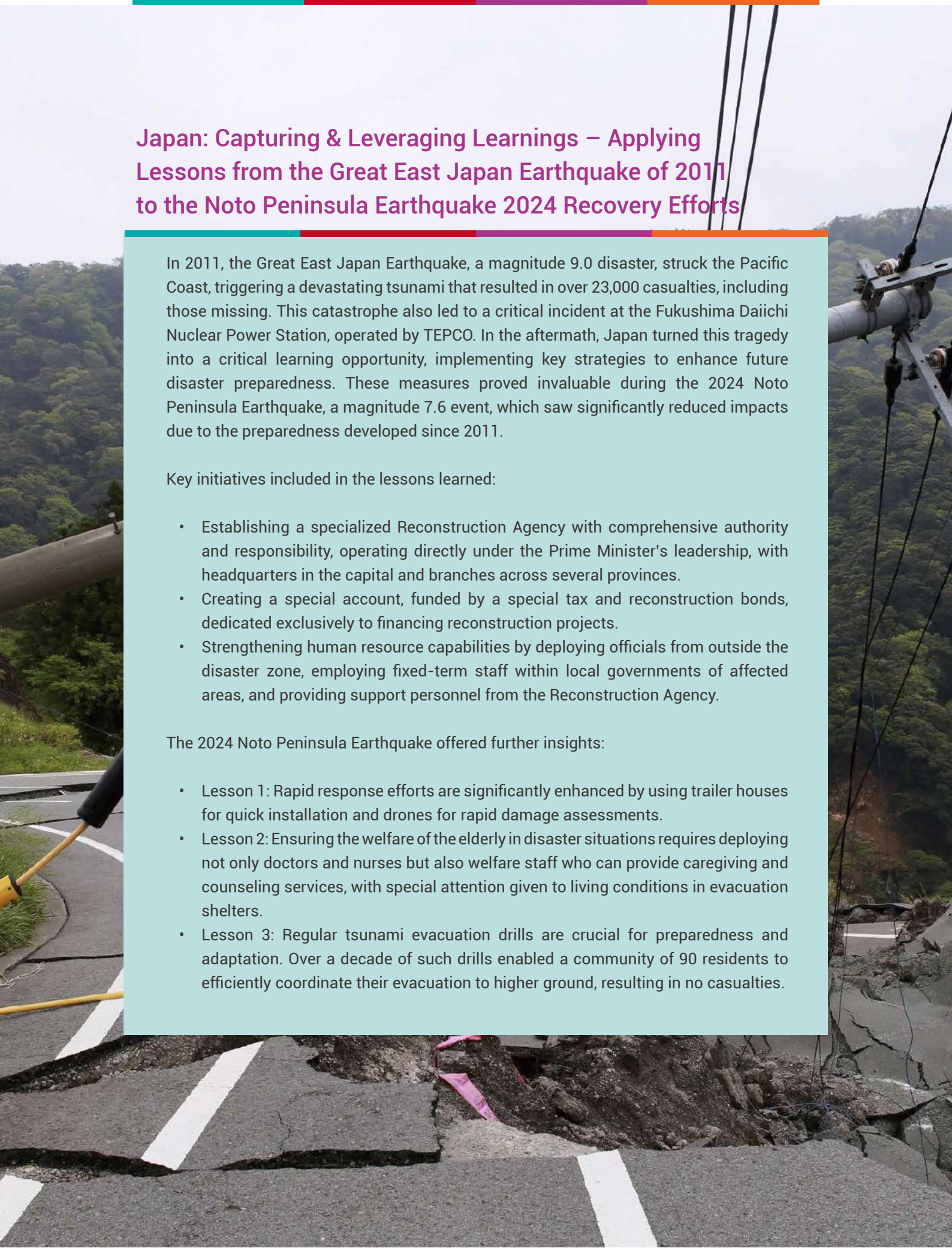
The project also emphasizes social work, supporting approximately 310 families affected by the landslides. Social work teams, including those from the Department of Social Welfare and specialized technical companies, are engaged in providing assistance to these families, ensuring they have access to basic social rights and helping them achieve greater autonomy. This holistic approach addresses not only the physical safety of the community but also their social well-being, aiming to improve living conditions and ensure access to essential services such as education, healthcare, and sanitation.

The impact of these initiatives extends beyond immediate disaster mitigation. By integrating technical engineering solutions with social assistance, the project aims to reduce physical and social vulnerabilities, preserving housing where possible and improving the overall quality of life for residents. This interdisciplinary approach is vital in promoting long-term resilience, making Petrópolis a safer and more equitable city. The project also sets a precedent for similar interventions in other vulnerable areas, emphasizing the need for scalable, replicable strategies that combine risk mitigation with social development.

However, the challenges of implementing these initiatives are significant, given Petrópolis' complex topography and the prevalence of informal settlements in high-risk areas. The rugged terrain posed logistical challenges for transporting materials and equipment, which were mitigated by using small machinery and cable cars. Moreover, the project required careful planning to minimize the need for demolitions while ensuring the safety of the intervention sites.

In conclusion, the slope containment works in Petrópolis highlight the critical role of local disaster interventions in enhancing national capabilities for response, recovery, preparedness, and resilience. By successfully addressing the immediate risks and challenges at the community level, this project not only protects local populations but also generates valuable lessons and strategies that can be scaled up to strengthen national disaster management. The experiences and outcomes from Petrópolis provide a blueprint for improving how the nation anticipates, responds to, and recovers from future disasters, ultimately building a more resilient and prepared country.





Japan: Capturing & Leveraging Learnings – Applying Lessons from the Great East Japan Earthquake of 2011 to the Noto Peninsula Earthquake 2024 Recovery Efforts

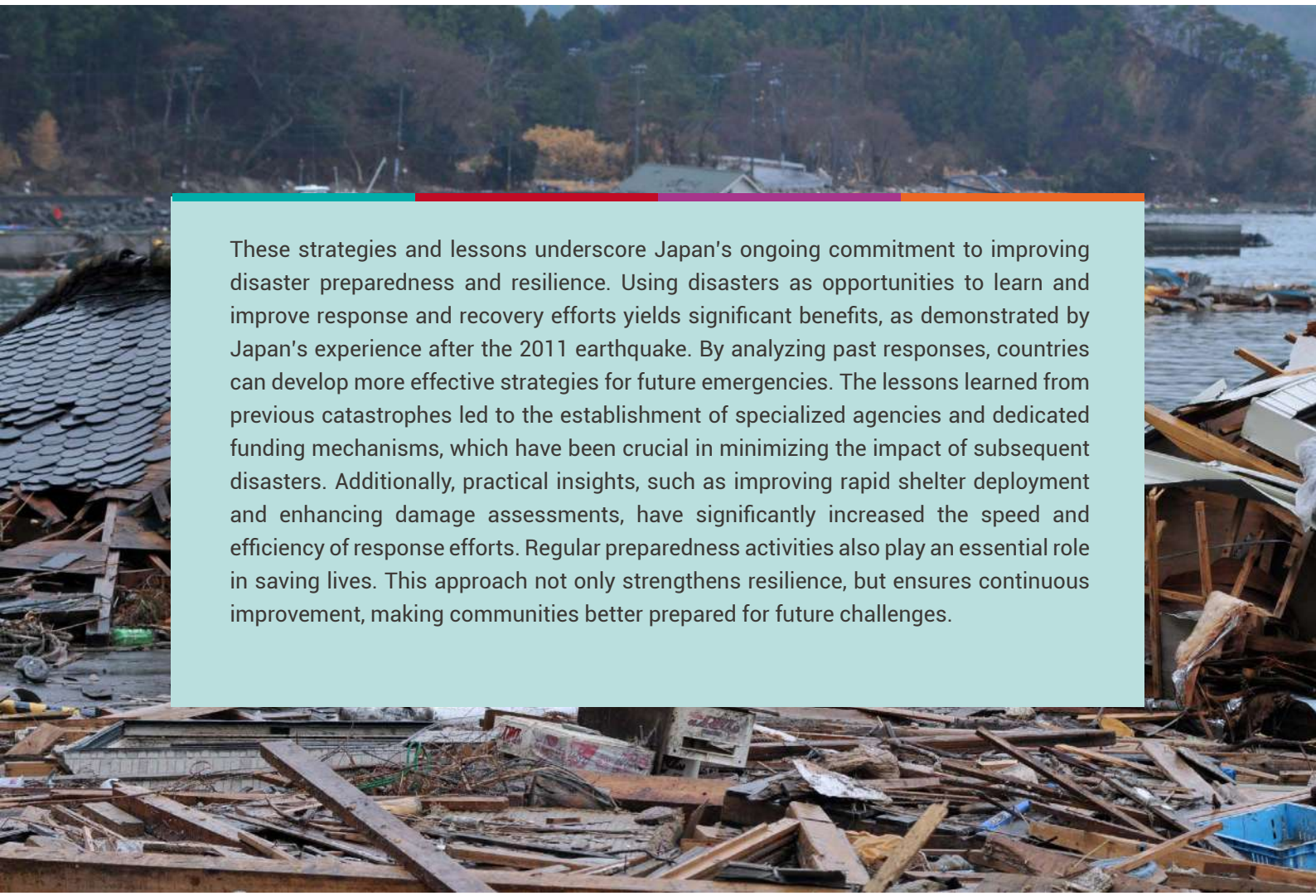
In 2011, the Great East Japan Earthquake, a magnitude 9.0 disaster, struck the Pacific Coast, triggering a devastating tsunami that resulted in over 23,000 casualties, including those missing. This catastrophe also led to a critical incident at the Fukushima Daiichi Nuclear Power Station, operated by TEPCO. In the aftermath, Japan turned this tragedy into a critical learning opportunity, implementing key strategies to enhance future disaster preparedness. These measures proved invaluable during the 2024 Noto Peninsula Earthquake, a magnitude 7.6 event, which saw significantly reduced impacts due to the preparedness developed since 2011.

Key initiatives included in the lessons learned:

- Establishing a specialized Reconstruction Agency with comprehensive authority and responsibility, operating directly under the Prime Minister's leadership, with headquarters in the capital and branches across several provinces.
- Creating a special account, funded by a special tax and reconstruction bonds, dedicated exclusively to financing reconstruction projects.
- Strengthening human resource capabilities by deploying officials from outside the disaster zone, employing fixed-term staff within local governments of affected areas, and providing support personnel from the Reconstruction Agency.

The 2024 Noto Peninsula Earthquake offered further insights:

- Lesson 1: Rapid response efforts are significantly enhanced by using trailer houses for quick installation and drones for rapid damage assessments.
- Lesson 2: Ensuring the welfare of the elderly in disaster situations requires deploying not only doctors and nurses but also welfare staff who can provide caregiving and counseling services, with special attention given to living conditions in evacuation shelters.
- Lesson 3: Regular tsunami evacuation drills are crucial for preparedness and adaptation. Over a decade of such drills enabled a community of 90 residents to efficiently coordinate their evacuation to higher ground, resulting in no casualties.



These strategies and lessons underscore Japan's ongoing commitment to improving disaster preparedness and resilience. Using disasters as opportunities to learn and improve response and recovery efforts yields significant benefits, as demonstrated by Japan's experience after the 2011 earthquake. By analyzing past responses, countries can develop more effective strategies for future emergencies. The lessons learned from previous catastrophes led to the establishment of specialized agencies and dedicated funding mechanisms, which have been crucial in minimizing the impact of subsequent disasters. Additionally, practical insights, such as improving rapid shelter deployment and enhancing damage assessments, have significantly increased the speed and efficiency of response efforts. Regular preparedness activities also play an essential role in saving lives. This approach not only strengthens resilience, but ensures continuous improvement, making communities better prepared for future challenges.

Practicing recovery during small hazard events is a vital strategy for ensuring inclusive and resilient recovery. By actively engaging diverse stakeholders, including at-risk populations, in these scenarios, specific needs and gaps in recovery strategies can be identified and proactively addressed. This approach not only builds community resilience but also fosters a culture of continuous improvement, ensuring that recovery efforts are equitable and tailored to the unique challenges that climate change presents. Ultimately, by learning from smaller events, resilience can be built, including through strengthened capacity to respond and recover effectively to larger-scale disasters.

Takeaway 6: Capacity needs to be built at all levels to promote comprehensive and inclusive recovery

Building capacity at all levels, with a focus on both short-term and long-term needs, is essential for effective recovery. It is critical to establish strong coordination capabilities within the National Disaster Management Agency, ensuring seamless collaboration with the government, technical agencies, NGOs, international organizations, and local communities.

Moreover, monitoring, evaluation, and learning processes are integral components of long-term recovery, reconstruction, and resilience. Properly monitoring progress is essential to the success of programs and to ensuring that valuable lessons are learned and applied in future efforts.

Romania: Enabling Inclusive Emergency Preparedness and Response through Training[14]

Romania has made significant progress in improving its emergency preparedness and response (EP&R) system to protect lives in a disaster-prone country. However, for the 900,000 people with disabilities, safety remains uncertain during emergencies such as earthquakes and floods. Focus groups and on-the-ground consultants revealed that the EP&R system is not fully equipped to meet their needs.

The Global Facility for Disaster Reduction and Recovery (GFDRR) and the World Bank, with partners like the Association of the Blind and the National Red Cross, have been supporting Romania to ensure its EP&R system is inclusive. This includes training 130 first responders, such as firefighters, policemen and paramedics, including 30 women, on interacting with people with disabilities. The training was provided under the Japan-World Bank Program for mainstreaming Disaster Risk Management in Developing Countries and focused on first responders who are part of the Romanian Department for Emergency Situations, the Romanian General Inspectorate for Emergency Situations, and the General Directorate of Social Assistance of the Municipality of Bucharest.

Topics covered include assisting those who are visually impaired and communicating in sign language, with input from persons with disabilities themselves, who also led the training. The involvement of trainers, who were individuals with disabilities, reinforced the important message that people with disabilities are active agents in building their own resilience, including serving as educators, rather than merely being recipients of aid. The training's hands-on approach, incorporating role-playing exercises where participants guided blindfolded partners, provided practical and real-world learning that significantly enhanced its effectiveness. Furthermore, the training equipped participants with valuable strategies and insights on how to engage with people with disabilities during emergencies. For instance, the sign language module recommended creating predefined messages on tablets or mobile devices to facilitate more efficient communication with individuals with hearing impairments.

Participants gained practical knowledge, and feedback shows that 80% improved their understanding of vulnerabilities, with 64% likely to apply these skills in their work. Encouraged by these results, the training is set to expand to 10 counties in 2024, including guides for interacting with people with intellectual disabilities.

Training and capacity building are essential for promoting resilient and inclusive recovery, particularly in disaster-prone areas. By equipping first responders, community leaders, and emergency personnel with the skills and knowledge to address the diverse needs of all populations, including those with disabilities, such programs ensure that no one is left behind in times of crisis. Hands-on training fosters practical understanding and empathy, enabling responders to act effectively and inclusively during emergencies. Furthermore, capacity building empowers marginalized groups to play an active role in their own recovery, strengthening overall community resilience and creating a more equitable and sustainable approach to disaster management.

14 More details can be found in GFDRR Annual Report 2023 here.

Mexico: Strong Local Governance and Finance Mechanisms to BBB – Examples from Mexico City, Tabasco and Acapulco

In September 2017, a magnitude 7.1 earthquake struck just 120 kilometers from Mexico City, causing extensive devastation. The disaster resulted in the collapse of 44 buildings, damage to over 5,000 homes, impact on 47 health facilities, 1,429 leaks in the hydraulic network, and the accumulation of 55,000 cubic meters of debris. Despite the initial strain on government response capacities, an emergency declaration was issued on the day of the event, followed by a disaster declaration two days later.

In the aftermath, a strategic roadmap for reconstruction was quickly established, culminating in the enactment of a new reconstruction law. This law, developed through a comprehensive, flexible, and participatory process, prioritized transparency, emphasized communication with the scientific community, and focused on addressing the needs of the affected population.

The 2018 Reconstruction Law marked a significant shift in the allocation of public funds, prioritizing assistance to affected homeowners over real estate companies, and ensuring that resources were directed to those most impacted by the disaster.

The earthquake underscored the necessity of a well-defined framework with key components to ensure a resilient recovery:

- Comprehensive support mechanisms
- Diversified financing strategies
- Inclusive and participatory governance
- Adaptation to evolving needs
- Balanced recovery decisions
- Institutional and international collaboration

Mexico's robust local governance is further strengthened by its extensive network of public employees dedicated to disaster risk management, enabling swift and effective action when hazards occur.

The 2017 earthquake near Mexico City highlighted the critical need for a resilient and well-structured disaster recovery framework. In response, Mexico's swift enactment of the 2018 Reconstruction Law marked a pivotal shift toward prioritizing the needs of affected homeowners and ensuring transparency and inclusivity in the reconstruction process. By establishing comprehensive support mechanisms, adopting diversified financing strategies, and fostering inclusive governance, Mexico has set a strong precedent for future disaster response efforts. This approach, combined with the country's robust local governance and commitment to disaster risk management, has not only facilitated a more balanced and effective recovery but also strengthened the nation's overall resilience to future hazards.

Strong local capacity was essential in Mexico's response and recovery efforts following the 2017 earthquake due to the need for swift, coordinated action across various sectors. Local governance, bolstered by a large network of public employees trained in disaster risk management, enabled Mexico to quickly issue emergency and disaster declarations, set up a participatory framework, and enact the 2018 Reconstruction Law. This robust local capacity facilitated transparent fund allocation and ensured that recovery efforts prioritized those most affected. Furthermore, local governance mechanisms allowed Mexico to implement diversified financing strategies and inclusive decision-making, both critical for a balanced and resilient recovery that adapted to the evolving needs of the population.

Building capacity at all levels is essential for delivering inclusive and resilient recovery in the face of the increasing risks posed by climate change. Strengthening the skills and resources of local, regional, and national entities ensures that response and recovery systems are well-coordinated and equipped to address the unique challenges of disasters exacerbated by climate change. A comprehensive capacity-building approach involves training diverse stakeholders, including government agencies, NGOs, and community organizations, to understand and meet the needs of vulnerable populations effectively. By investing in capacity development, we create a resilient framework that not only addresses immediate recovery needs but also builds long-term resilience against future climate-related disasters, fostering a more equitable and sustainable future for all communities.

Conclusion

Readiness is crucial for achieving inclusive and resilient recovery. This involves not only educating the population about risks, but also making public communication a central focus. Effective public awareness fosters readiness, and engaging schools and children is a strategic approach to cultivating future resilience and embedding a culture of DRR within communities. Continuous community engagement is essential for leveraging local knowledge, developing tailored solutions, and maintaining sustained disaster preparedness.

Addressing income inequalities through housing-focused programs is also pivotal in building resilience. While humanitarian assistance is the immediate response following a disaster, recovery is a broader, long-term process that demands practical, on-the-ground implementation. Early Warning Systems and Anticipatory Action are critical in enhancing capabilities by establishing clear chains of responsibility that can be effectively mobilized.

Effective disaster recovery requires a holistic approach that integrates preparedness, inclusivity, and resilience into every stage of planning and execution. By learning from smaller hazard events and continuously refining response systems, communities can build the capacity needed to handle larger-scale disasters. Prioritizing readiness assessments and inclusive practices ensures that recovery efforts are equitable and that the most vulnerable populations are not left behind. Furthermore, diversifying financing sources and establishing strong coordination among all stakeholders are critical for sustainable recovery. Ultimately, resilient recovery is not just about rebuilding infrastructure but about creating stronger, more cohesive communities that are better prepared for future challenges.

Way Forward for the G20 DRR Working Group

To advance the key takeaways from the technical session convened by the Government of Brazil, the G20 DRR Working Group can focus on the following strategic areas:

- Facilitate countries in conducting regular readiness assessments and ensure the effective implementation of the identified recommendations.
- Promote the standardization of terminology related to recovery, readiness, and the “Build Back Better” (BBB) framework.
- Utilize the World Reconstruction Forum, organized under the umbrella of the International Recovery Platform (IRP) during the Global Platform for Disaster Risk Reduction (DRR), to further embed inclusion and resilience as fundamental elements of response, recovery, and reconstruction efforts.
- Strengthen the actions of the IRP by supporting the development and delivery of training programs focused on resilient and inclusive recovery practices in countries.
- Advocate for the establishment of a global or regional Centre of Excellence for Resilient Recovery to foster expertise and innovation in this critical field.

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