



1. Introduction



1.1 Purpose @

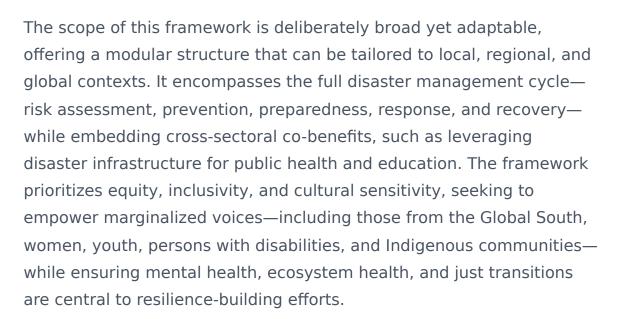
The Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework is a proof-of-concept initiative designed to strengthen disaster resilience within multi-level governance systems. Developed as part of the Global Governance Framework (globalgovernanceframework.org), this framework emerges from a vision to foster ethical, compassionate, and interconnected systems that support human and non-human life in the face of escalating disaster risks. As climate change intensifies the frequency and severity of hazards worldwide, the need for coordinated, equitable approaches to disaster governance has never been more urgent. This framework aims to bridge fragmented efforts and catalyze transformative action across diverse contexts.

1.2 Alignment with Global Priorities 🌍



The framework aligns with and builds upon established global priorities, including the Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals (SDGs), and the Intergovernmental Panel on Climate Change (IPCC) climate adaptation frameworks. It integrates lessons from historical disasters, Indigenous and local knowledge systems, and cutting-edge innovations to address the complex interplay of hazards, vulnerabilities, and systemic inequities. By drawing from these diverse knowledge sources, the framework seeks to avoid reinventing existing approaches while filling critical gaps in implementation.

1.3 Scope and Structure 🔬



1.4 Development Status and Invitation for Collaboration

This framework is not a finalized solution but a living proposal in ongoing development. Different sections range from conceptual to partially operational, reflecting the evolving nature of disaster governance. As a collaborative draft, it invites stakeholders—including communities, governments, NGOs, the private sector, and policymakers—to explore, critique, and refine its components. Through implementation, we anticipate communities will experience reduced disaster impacts, more inclusive decision-making processes, and enhanced capacity to adapt to changing conditions. The subsequent sections provide practical guidance on principles, components, implementation approaches, and evaluation mechanisms that can be adapted to diverse contexts.

We invite the globalgovernanceframework.org community and beyond to join us in co-creating a resilient future where all life thrives in harmony, even in the face of increasing disaster risks. Your insights, critiques, and innovations are essential to shaping this framework's evolution and real-world impact.

The Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework is anchored in a set of guiding principles that shape its design, implementation, and evolution. These principles reflect the ethical and compassionate vision of the Global Governance Framework, ensuring that resilience-building efforts are equitable, inclusive, and sustainable. They draw from global priorities, Indigenous and local knowledge, historical disaster lessons, and a commitment to fostering interconnected systems that support human and non-human life.

The following five principles guide every aspect of the framework:

2.1 Ethical and Compassionate Governance for All Life

The framework prioritizes governance that upholds the dignity and well-being of human and non-human life. It recognizes ecosystems as stakeholders, advocating for their protection and restoration through ethical decision-making that balances immediate needs with long-term sustainability.

In Practice: Ecological representation in local resilience councils; mangrove restoration as natural coastal defense in Small Island States; environmental impact assessments for all recovery projects.

2.2 Co-Creation Through Shared Wisdom



Resilience is built through collaborative processes that center Indigenous, local, and marginalized knowledge systems alongside scientific and technological insights. By prioritizing shared wisdom, the framework ensures that solutions are co-designed with communities, respecting their cultural, historical, and ecological contexts.

In Practice: Indigenous weather prediction integrated with meteorological forecasting in early warning systems; community-led hazard mapping that incorporates generational knowledge of flood patterns.

2.3 Adaptive and Iterative Design 🔁

As a living proposal, the framework embraces adaptability and continuous improvement. It is designed to evolve through stakeholder feedback, pilot testing, and iterative learning, allowing it to respond to emerging risks, cultural nuances, and technological advancements.

In Practice: Regular reflection cycles with diverse stakeholders; flexible KPIs that evolve based on implementation learning; documentation of lessons learned from pilot projects.

2.4 Equity, Inclusivity, and Cultural Sensitivity 🌈

Equity is at the heart of the framework, with a commitment to addressing power imbalances, including those between the Global South and North, and amplifying marginalized voices—such as women, youth, persons with disabilities, and Indigenous communities. Cultural sensitivity guides implementation, ensuring interventions are tailored to local norms and practices.

In Practice: Women-led early warning systems in Bangladesh; disability-accessible evacuation plans and shelters; funding prioritization for historically underserved communities; decision-making authority for marginalized groups.

2.5 Interconnectedness and Holistic Resilience 🕸

The framework recognizes the interconnected nature of social, environmental, and economic systems. It promotes resilience by linking DRR&R with sectors like health, education, and economic

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planning, yielding co-benefits such as disaster shelters serving as public health centers.

In Practice: Mental health services integrated into disaster recovery programs; climate-resilient reconstruction that creates green jobs; disaster shelters designed as multi-purpose community centers.

2.6 Navigating Tensions and Ensuring Accountability 44

In implementing these principles, stakeholders will inevitably encounter tensions and trade-offs, such as balancing urgent action with inclusive consultation, or immediate recovery needs with long-term sustainability. The framework encourages transparent deliberation when such tensions arise, with priority given to the most vulnerable stakeholders and future generations.

Adherence to these principles will be monitored through independent audits, participatory evaluation methods, and regular reflection cycles that invite critique from diverse stakeholders, especially those historically marginalized in disaster governance.

These guiding principles provide a moral and practical compass for the DRR&R Implementation Framework. They ensure that resilience-building efforts are not only effective but also just, culturally resonant, and aligned with the globalgovernanceframework.org vision of a thriving, interconnected world. Stakeholders are encouraged to uphold these principles as they engage with, adapt, and implement the framework in their contexts.

3. Framework Components 🧩

The Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework is structured around five interconnected core components that collectively address the full disaster management cycle. These components integrate Indigenous and local knowledge, gender-responsive and disability-inclusive approaches, mental health considerations, historical disaster lessons, and cultural adaptation to ensure holistic and equitable resilience-building. Each component is designed to be modular and adaptable, enabling stakeholders to tailor interventions to diverse local, regional, and global contexts while aligning with the ethical and inclusive vision of globalgovernanceframework.org.

3.1 Risk Understanding and Co-Assessment Q

This component focuses on building a comprehensive understanding of disaster risks through participatory and inclusive processes.

Participatory Mapping: Engage communities in hazard and vulnerability mapping, integrating climate change projections, mental health risk factors (e.g., trauma vulnerability), and historical disaster data to identify multi-dimensional risks.

Knowledge Integration: Combine Indigenous knowledge systems (e.g., traditional ecological practices for flood prediction), gender-specific vulnerabilities (e.g., women's exposure to economic disruption), and disability-specific vulnerabilities (e.g., mobility challenges) with data-driven insights, such as IPCC-aligned risk models.

Transparent Outputs: Develop open-access risk profiles with appropriate data governance protocols to ensure transparency and equitable access to information, enabling communities and policymakers to make informed decisions.

Case Example

: In Nepal, community-led mapping combined Indigenous knowledge of landslide patterns with satellite data and mental health vulnerability assessments to create comprehensive risk profiles that informed locally appropriate mitigation strategies.

This collaborative approach ensures that risk assessments are grounded in local realities and historical context, fostering ownership and equity in resilience planning. Progress can be measured through indicators such as the percentage of vulnerable communities with updated risk assessments and the diversity of knowledge sources integrated.

3.2 Prevention and Mitigation (1)



Prevention and mitigation aim to reduce disaster risks through proactive, sustainable, and culturally resonant measures.

Community-Driven Solutions: Implement ecosystem-based solutions, such as mangrove restoration or watershed management, informed by Indigenous practices and historical successes (e.g., past flood management strategies).

Ethical Technology: Utilize technologies like AI for predictive risk modeling, ensuring community consent and contingency plans for low-tech alternatives (e.g., manual monitoring) in resourceconstrained settings. Implement transparent data protocols that protect community privacy while enabling effective risk reduction.

Scalable Interventions: Design low-cost, scalable measures, such as retrofitting infrastructure or community training, that incorporate mental health awareness to reduce vulnerabilities. Examples include bamboo reinforcement techniques for housing in flood-prone areas and community-managed early warning systems.

Case Example

: In the Philippines, the "Billion Trees" project combines traditional knowledge with modern mapping to strategically reforest watersheds, reducing flood risks while creating sustainable livelihoods for local communities at a relatively low cost.

By prioritizing local leadership and historical lessons, this component builds resilience that is both environmentally sustainable and socially inclusive. Effectiveness can be measured through reduced hazard exposure and the number of community-led prevention initiatives implemented.

3.3 Preparedness and Collaborative Response

Preparedness and response focus on equipping communities and systems to anticipate and respond effectively to disasters.

Inclusive Early Warning Systems: Develop early warning systems tailored to climate-induced hazards, featuring women's leadership, accessibility for persons with disabilities (e.g., sign language alerts, tactile maps), and mental health support training to address crisis-related stress.

Co-Developed Plans: Create contingency plans with local, ecological, Indigenous, and youth stakeholders, incorporating mental health crisis response protocols and insights from past disasters (e.g., evacuation failures). Establish clear coordination mechanisms between community responders, government agencies, and international actors.

Comprehensive Training: Deliver training programs that emphasize cultural, ecological, gender, disability, climate, and

mental health awareness, using behavioral science to enhance warning uptake and evacuation compliance.

Case Example

: Bangladesh's cyclone preparedness program combines modern meteorological data with a network of women-led volunteer teams equipped with appropriate technology (from megaphones to SMS alerts) and mental health first aid training, dramatically reducing cyclone fatalities.

This component ensures that preparedness is participatory, inclusive, and informed by historical and behavioral insights, enabling swift and equitable responses. Success can be tracked through indicators such as warning system coverage, response time, and inclusion of marginalized groups in preparedness activities.

3.4 Recovery and Resilient Reconstruction



Recovery and reconstruction aim to restore and enhance community resilience post-disaster, aligning with long-term sustainability and equity.

Build Back Better: Reconstruct with climate-resilient standards and ecosystem-based models (e.g., reforestation, wetland restoration), drawing on historical recovery successes to avoid past mistakes. Apply financing mechanisms like parametric insurance and resilience bonds to ensure rapid and sustainable funding for recovery.

Holistic Recovery: Prioritize psychosocial, economic, and environmental recovery, addressing gender-specific needs (e.g., women's livelihood restoration), disability-specific needs (e.g., accessible infrastructure), and mental health services (e.g., counseling, community support groups) sustained through

partnerships with health ministries and WHO frameworks. Promote green jobs, such as youth training in ecosystem restoration, to support a just transition.

Iterative Learning: Foster continuous improvement by analyzing recovery outcomes and historical disaster recovery data to inform future efforts. Establish feedback mechanisms that capture community experiences during recovery.

Case Example

: After Hurricane Maria, Puerto Rico's community-led "energy oases" combined solar power with mental health support centers, creating resilient infrastructure while addressing psychological recovery needs through traditional healing practices and modern therapy.

This component ensures recovery is transformative, equitable, and aligned with environmental and social justice goals. Impact can be assessed through metrics such as build-back rates, inclusion of vulnerable groups in recovery planning, and long-term reduction in vulnerabilities.

3.5 Risk Communication and Public Engagement (

Effective communication and engagement are critical to building a culture of resilience and trust.

Tailored Campaigns: Design public awareness campaigns for low-tech, rural, linguistically diverse, and disability-inclusive communities (e.g., radio, community theater, accessible formats), incorporating mental health coping strategies and historical disaster lessons to build preparedness.

Misinformation Mitigation: Establish trusted communication channels to counter misinformation, ensuring clarity and reliability during crises. Create two-way communication mechanisms that allow communities to report needs and provide feedback on response efforts.

Behavioral Nudges: Leverage social media, community networks, and trusted local figures (e.g., Indigenous elders, women leaders, youth advocates, religious leaders), informed by behavioral science, to promote early warning compliance, evacuation behavior, and mental health resilience.

Case Example

: In Jamaica, youth-led "Disaster Ready" theater groups combine traditional storytelling with modern behavioral insights to communicate risk information across generations, significantly improving community preparedness through culturally resonant messaging.

This component fosters inclusive, culturally sensitive engagement that empowers communities to act proactively and resiliently. Effectiveness can be measured through awareness levels, behavioral change indicators, and community trust in official communications.

Component Interdependence and System Integration

These five components are designed to function as an interconnected system rather than isolated elements. For example:

Risk assessments (3.1) directly inform prevention measures (3.2) and preparedness planning (3.3)

Communication strategies (3.5) enhance the effectiveness of early warning systems (3.3)

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Recovery approaches (3.4) should incorporate lessons from risk assessments (3.1) to prevent recreating vulnerabilities

Prevention measures (3.2) must be communicated effectively (3.5) to gain community acceptance

Implementation should consider these interdependencies, with coordination mechanisms to ensure information flows between components and stakeholders.

These five components form the backbone of the DRR&R Implementation Framework, providing a comprehensive and adaptable structure for resilience-building. By embedding equity, cultural adaptation, historical learning, and mental health considerations, they ensure that disaster risk reduction is not only effective but also just and sustainable. Stakeholders are encouraged to adapt these components to their contexts, contributing to the framework's ongoing evolution through shared insights and innovations.

4. Implementation Approaches



The Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework is designed to be actionable and adaptable, translating its core components into reality through a set of implementation approaches. These approaches bridge the gap between vision and practice, leveraging participatory governance, innovative financing, ethical technology, and robust coordination to build resilience across diverse contexts. Rooted in the guiding principles of equity, inclusivity, and cultural sensitivity, they ensure that implementation is collaborative, conflict-sensitive, and aligned with the ethical vision of globalgovernanceframework.org.

4.1 Open Policy Dialogues 💬

Implementation begins with inclusive policy dialogues that integrate DRR&R and climate adaptation into multi-level governance systems. These dialogues prioritize amplifying marginalized voices, including those from the Global South, women, youth, and persons with disabilities, to address power imbalances. By fostering transparent and participatory discussions, stakeholders can align the framework with local, national, and international policies, ensuring relevance and ownership.

Case Example

: Following Cyclone Idai, Mozambique established cross-sectoral policy dialogues that brought together traditional leaders, climate scientists, and government officials to redesign flood management approaches, significantly improving community buy-in.

Implementation Tip: Begin with mapping existing policy frameworks before initiating dialogues to identify integration opportunities and potential conflicts.

4.2 Innovative Financing Mechanisms 💰



Sustainable funding is critical for resilience-building. The framework promotes a mix of financing mechanisms to secure resources:

Community Resilience Funds: Local crowdfunding and microgrants empower communities to lead DRR initiatives.

Resilience Bonds: Financial instruments fund climate risk mitigation, attracting private sector investment.

Parametric Insurance Models: Enable rapid disaster response through pre-agreed payouts based on hazard triggers.

Forecast-Based Financing: Supports anticipatory action by disbursing funds before disasters strike, triggered by risk thresholds (e.g., weather forecasts).

ESG-Aligned Investments: Encourage private sector contributions through environmentally and socially responsible investments.

Case Example

: In Peru, forecast-based financing for cold waves releases funds when temperatures drop below predetermined thresholds, enabling Andean communities to protect livestock before extreme cold arrives.

Implementation Challenge: Ensuring equitable access to these mechanisms for marginalized communities requires dedicated capacity building and technical assistance.

4.3 Ethical Technology Use with Robust **Data Governance**

Technology enhances DRR&R but must be deployed ethically to avoid exacerbating inequities. The framework advocates:

Community-Controlled Data Protocols: Empower communities to manage their data, with specific adherence to Indigenous data ownership guided by the CARE Principles for Indigenous Data Governance (Collective Benefit, Authority to Control, Responsibility, Ethics).

Privacy Protections: Use anonymized risk data to safeguard individual rights.

Equitable Access: Provide open-source platforms and offline tools (e.g., paper-based risk maps) to bridge digital divides in rural and low-tech settings.

Contingency Plans: Ensure low-tech alternatives (e.g., community-led monitoring) for resource-constrained areas where technology access is limited.

Case Example

: The Maori Data Sovereignty Network in New Zealand established protocols ensuring tribal control over disaster risk data while enabling its use for preparedness planning.

Links to Framework Components: Supports Risk Understanding (3.1) and Preparedness (3.3) through ethical data practices.

4.4 Knowledge Platforms for Shared Learning **\$**

Open-access knowledge platforms facilitate the exchange of best practices, prioritizing Indigenous, local, gender-responsive, disability-inclusive, mental health-focused, and culturally adapted insights. These platforms integrate historical disaster evaluations and stakeholder feedback to foster continuous learning.

Case Example

: PreventionWeb's adaptation for low-bandwidth users in Africa combines online and offline knowledge sharing, significantly increasing access to DRR information in remote communities.

Implementation Challenge: Maintaining multilingual, accessible platforms requires sustained investment and community stewardship.

4.5 Accountability Mechanisms

To ensure commitments translate into action, the framework incorporates robust accountability measures:

Independent Audits: Regular, transparent evaluations assess implementation progress and resource use.

Citizen-Led Monitoring: Empower communities to track and report on DRR&R outcomes, enhancing local ownership.

Case Example

: Philippines' community-based monitoring system for typhoon recovery uses mobile applications and community forums to track reconstruction progress, improving accountability.

Links to Framework Components: Reinforces all components through outcome verification and continuous improvement.

4.6 Conflict-Sensitive DRR Approaches **



In fragile or post-conflict regions, DRR&R implementation must integrate peacebuilding to avoid exacerbating tensions. The framework supports conflict-sensitive approaches, such as Colombia's postconflict community resilience programs, which combine disaster

preparedness with social cohesion, and Pacific island states' efforts to address climate-induced resource conflicts.

Case Example

: In Yemen, water management committees bring together previously conflicting communities to jointly plan for drought resilience, creating dialogue spaces that contribute to local peace.

Implementation Tip: Conduct conflict analysis before DRR interventions in fragile contexts to identify potential tensions and opportunities for peace-positive outcomes.

4.7 Integration with Legal and Regulatory Frameworks 📜

Effective implementation requires alignment with existing legal structures:

Policy Alignment: Harmonize the framework with national disaster management laws and local ordinances to ensure compliance and scalability.

Advocacy for Harmonization: Promote policy coherence across municipal, national, and international levels to streamline DRR&R efforts.

Support for Community-Led DRR: Advocate for legal frameworks that enable community-driven initiatives and mental health services.

Case Example

: Mexico's General Law on Civil Protection incorporates community-based DRR principles, creating legal pathways for

Indigenous communities to implement traditional prevention practices.

Implementation Challenge: Navigating complex legal environments requires specialized expertise and stakeholder alignment.

4.8 Coordination Mechanisms Across **Governance Levels**

To address coordination challenges, the framework establishes:

Multi-Level Coordination Bodies: National-regional DRR task forces facilitate collaboration and resource sharing.

Cross-Governance Forums: Regular meetings align strategies and share historical lessons across jurisdictions.

Standardized Protocols: Data-sharing and joint response planning protocols ensure seamless coordination during crises.

Case Example

: The Mekong River Commission's flood management strategy coordinates actions across Thailand, Laos, Cambodia, and Vietnam, demonstrating effective transboundary disaster governance.

Links to Framework Components: Essential for Preparedness and Response (3.3) and builds on Risk Understanding (3.1).

4.9 Cultural Adaptation Strategies



Cultural sensitivity is paramount for effective implementation. The framework promotes:

Contextual Analysis: Assess local cultural norms and practices to tailor interventions.

Engagement with Cultural Leaders: Co-design communication and training with community elders, religious leaders, and other influencers.

Flexible Guidelines: Allow adaptations to respect diverse cultural frameworks, ensuring interventions resonate with local values.

Case Example

: In Samoa, village preparedness plans incorporate traditional leadership structures and cultural protocols, resulting in significantly higher community participation and ownership.

Implementation Tip: Begin with cultural mapping exercises to identify community assets, values, and appropriate entry points for DRR initiatives.

Implementation Sequencing Guidance 📈



While implementation approaches should be tailored to context, the following sequence offers a starting point:

First Phase: Begin with policy dialogues, cultural adaptation mapping, and knowledge platform development to establish foundations.

Second Phase: Develop coordination mechanisms, legal integration, and initial financing instruments to build institutional framework.

Third Phase: Implement technology systems, conflict-sensitive approaches, and comprehensive accountability mechanisms to operationalize the framework fully.

Throughout all phases, stakeholder engagement and adaptive management remain essential to ensure the framework evolves based on implementation learning.

These implementation approaches provide a practical foundation for operationalizing the DRR&R Framework. By balancing innovation with

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equity, they empower stakeholders to build resilience that is sustainable, inclusive, and responsive to local needs. Stakeholders are encouraged to adapt these approaches, contribute insights, and collaborate through globalgovernanceframework.org to refine and scale the framework's impact.

5. Collaborative Engagement

The Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework thrives on collaboration, recognizing that resilience-building requires the active participation of diverse stakeholders across sectors and scales. This section outlines how stakeholders engage to operationalize the framework, emphasizing inclusive governance, equitable partnerships, and mechanisms to address power dynamics. By fostering shared ownership, technical capacity building, and representation of marginalized groups—including Indigenous communities, women, youth, persons with disabilities, and ecosystems—the framework aligns with the ethical and collaborative vision of globalgovernanceframework.org.

5.1 Stakeholder Roles 🧩

Effective DRR&R implementation hinges on the contributions of diverse actors, each bringing unique perspectives and expertise. Stakeholders collaborate through participatory processes that prioritize inclusivity, local leadership, and ecological considerations.

Diverse Actors: Stakeholders include communities, governments, non-governmental organizations (NGOs), the private sector, academic institutions, ecosystems (represented as stakeholders), non-human life, youth, and persons with disabilities. Each group contributes to co-designing and implementing resilience strategies.

Ecological Representation: Proxies such as environmental guardians or Indigenous-led councils advocate for ecosystems, ensuring that environmental impacts are considered in decision-making. For example, councils may prioritize wetland restoration to mitigate flood risks while preserving biodiversity.

Participatory Governance Experiments: Local resilience councils, integrating ecological, Indigenous, gender, disability, youth, and mental health representation, serve as platforms for cocreating solutions. These councils empower communities to lead

DRR initiatives, such as early warning system design or recovery planning.

Capacity Building: Shared learning and feedback loops strengthen stakeholder capabilities. Initiatives include youth-led DRR programs (e.g., school-based preparedness campaigns, digital activism), technical training for local system maintenance (e.g., early warning technologies), and mental health training to support crisis response. These efforts ensure long-term sustainability and local ownership.

Case Example

: In Thailand, "Village Disaster Volunteers" programs integrate elderly wisdom with youth digital skills, creating intergenerational knowledge transfer that strengthens community resilience while preserving traditional practices.

Cross-Sectoral Collaboration: To maximize impact, the framework encourages collaboration across stakeholder groups through:

Regular multi-stakeholder forums to align priorities and coordinate actions

Joint implementation projects that leverage diverse expertise (e.g., NGOs and private sector collaborating on warning systems)

Knowledge exchange platforms where academic insights inform community practice

Success Indicators: Effective stakeholder engagement can be measured through diversity of representation in decision-making bodies, stakeholder satisfaction surveys, and community ownership of implemented initiatives.

5.2 Private Sector Incentives



The private sector plays a critical role in scaling DRR&R through investment, innovation, and infrastructure development. The

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framework incentivizes private sector participation while ensuring alignment with community and ecological goals.

Public-Private Partnerships (PPPs): Collaborate on resilient infrastructure projects, such as earthquake-resistant buildings or flood defenses, that benefit both communities and businesses. PPPs leverage private expertise and funding while prioritizing public welfare.

Incentives for ESG Investments: Offer tax benefits, subsidies, or recognition programs for investments aligned with Environmental, Social, and Governance (ESG) criteria, encouraging funding for DRR initiatives like renewable energy-powered early warning systems.

Business Continuity Planning: Support businesses in developing continuity plans that integrate community, ecosystem, mental health, and disability-inclusive resilience. For example, businesses can ensure supply chains are disaster-resistant while providing mental health resources for employees post-disaster.

Case Example

: Following major earthquakes, New Zealand's "Resilient Business" program provided tax incentives for companies incorporating seismic safety features beyond code requirements, resulting in a 40% increase in businesses with comprehensive continuity plans.

Digital Innovation Partnerships: Encourage technology companies to develop accessible apps and platforms for disaster monitoring, early warning, and recovery coordination, with particular attention to bridging digital divides in vulnerable communities.

Implementation Challenge: Balancing profit motives with community needs requires clear accountability mechanisms and community oversight of private sector initiatives.

5.3 Addressing Power Dynamics

Power imbalances, such as those between the Global North and South or among marginalized groups, can undermine equitable DRR&R implementation. This sub-section outlines mechanisms to promote fairness and inclusion.

Elevating Marginalized Leadership: Prioritize funding and decision-making authority for Global South communities, women, youth, persons with disabilities, and Indigenous groups. For instance, allocate grants to women-led DRR cooperatives or youth-driven climate adaptation projects.

Platforms for Marginalized Voices: Establish forums, such as community assemblies or digital platforms, where Indigenous, rural, women-led, youth-led, and disability-led communities can shape DRR policies. These platforms ensure representation in local resilience councils and policy dialogues.

Transparency in Resource Allocation: Implement clear, auditable processes to distribute resources equitably, preventing disproportionate benefits to powerful actors. Regular reporting and citizen-led monitoring enhance accountability.

Case Example

: The Pacific Resilience Partnership established a "Women and Youth Leadership Fund" that requires at least 50% of DRR project leadership positions to be held by women and youth, significantly increasing their decision-making authority in regional resilience initiatives.

Digital Inclusivity Strategies: Create accessible digital participation pathways that overcome barriers to engagement:

Mobile-friendly platforms that work with limited connectivity

Multi-language interfaces and content

Voice-based participation options for those with literacy barriers

Disability-accessible design features

North-South Knowledge Exchange: Facilitate bidirectional learning between Global North and South contexts, recognizing that innovative solutions often emerge from resource-constrained environments.

5.4 Collaborative Engagement Challenges and Mitigation **

Effective collaboration faces several barriers that require proactive strategies:

Resource and Capacity Disparities: Address through targeted capacity building, technical assistance, and equitable resource allocation formulas that prioritize vulnerable communities.

Coordination Fatigue: Mitigate by streamlining engagement processes, consolidating meetings where possible, and ensuring participation translates to tangible outcomes.

Trust Deficits: Overcome through transparent communication, honoring commitments, and acknowledging historical injustices that may affect willingness to collaborate.

Conflicting Priorities: Navigate by establishing shared objectives early, facilitating dialogue to identify common ground, and developing compromise solutions that address core concerns of all stakeholders.

Case Example

: After failed initial engagement efforts in flood-prone communities of Bangladesh, a revised approach beginning with trust-building activities and transparent compensation for

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participation time increased stakeholder engagement by over 70%.

Collaborative engagement is the cornerstone of the DRR&R Implementation Framework, enabling stakeholders to work together toward a shared vision of resilience. By fostering inclusive governance, incentivizing private sector contributions, and addressing power imbalances, this section ensures that implementation is equitable, sustainable, and culturally resonant. Stakeholders are invited to engage through globalgovernanceframework.org, contributing insights and innovations to strengthen the framework's collaborative impact.

6. Implementation Barriers and Mitigation Strategies 🚧

The successful implementation of the Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework requires anticipating and addressing potential barriers that could hinder progress. These barriers, ranging from resource limitations to cultural misalignment, can impede the framework's ability to foster equitable and sustainable resilience. This section identifies key challenges and proposes targeted mitigation strategies, ensuring that implementation remains inclusive, adaptable, and aligned with the ethical vision of globalgovernanceframework.org.

6.1 Resource Constraints



Barrier: Limited financial, human, and technical resources can restrict the framework's scalability, particularly in low-income or resourceconstrained regions.

Mitigation Strategies:

Leverage diversified financing mechanisms, such as resilience bonds, international grants, forecast-based financing, and community crowdfunding, to secure sustainable funding.

Establish capacity-sharing networks to pool resources, such as shared training programs or regional equipment hubs, reducing costs for individual communities.

Prioritize low-cost, scalable interventions, like community-led monitoring or ecosystem-based solutions, to maximize impact within resource limits.

Case Example

: Nepal's community-based early warning system uses low-cost river gauges and mobile phones, reducing implementation costs by 75% compared to traditional systems while maintaining effectiveness.

Success Indicators: Increased number of diversified funding sources, cost-sharing arrangements, and successful implementation of low-cost alternatives in resource-constrained areas.

Links to Framework: Connects directly to Innovative Financing Mechanisms (Section 4.2) and equitable resource allocation principles.

6.2 Coordination Challenges

Barrier: Fragmentation across governance levels (local, regional, national, international) can lead to misaligned priorities, duplicated efforts, or delayed responses.

Mitigation Strategies:

Establish multi-level coordination bodies, such as national-regional DRR task forces, to streamline collaboration and align strategies.

Host regular cross-governance forums to share historical lessons, best practices, and joint planning insights, fostering cohesion.

Develop standardized protocols for data sharing and joint response planning, ensuring seamless coordination during crises.

Case Example

: The Caribbean Disaster Emergency Management Agency (CDEMA) established a regional coordination protocol that reduced response times by 40% during the 2017 hurricane season by eliminating duplicative assessments and streamlining resource deployment.

Success Indicators: Reduced redundancies in activities, improved response times, and increased information sharing across governance

levels.

Links to Framework: Supports Coordination Mechanisms (Section 4.8) and Preparedness and Response components (Section 3.3).

6.3 Political Resistance



Barrier: Resistance from policymakers or influential stakeholders, driven by competing priorities or skepticism about DRR investments, can stall implementation.

Mitigation Strategies:

Build advocacy campaigns that highlight the co-benefits of DRR&R, such as economic savings from disaster prevention or public health improvements from resilient infrastructure.

Engage stakeholders early through participatory dialogues to secure buy-in, demonstrating the framework's alignment with local and global goals (e.g., SDGs, Sendai Framework).

Showcase pilot successes, such as effective early warning systems or recovery programs, to build trust and momentum for broader adoption.

Case Example

: Mexico's cost-benefit analysis showing that \$1 invested in flood prevention saved \$7 in recovery costs helped overcome political resistance to funding preventative infrastructure, resulting in a tripling of prevention investment.

Success Indicators: Increased political endorsement, expanded budget allocations for DRR&R, and integration of framework principles into policy documents.

Links to Framework: Reinforces Open Policy Dialogues (Section 4.1) and supports framework adoption across governance levels.

6.4 Knowledge Gaps 📚

Barrier: Limited access to technical expertise, cultural knowledge, or disaster risk information can hinder effective implementation, particularly in marginalized communities.

Mitigation Strategies:

Provide training programs that build local technical capacity, such as maintaining early warning systems or conducting risk assessments, while incorporating gender-responsive, disability-inclusive, and mental health-focused content.

Develop open-access knowledge platforms to share best practices, Indigenous insights, and historical disaster lessons, ensuring resources are culturally adapted and accessible in multiple formats (e.g., audio, braille).

Foster peer-to-peer learning through community exchanges, enabling regions to share successful DRR&R strategies.

Case Example

: Indonesia's "Disaster University" program pairs technical experts with local communities, creating tailored capacity building that has increased local maintenance of early warning systems by 85% in participating villages.

Success Indicators: Improved local capacity for system maintenance, increased knowledge sharing between communities, and greater integration of diverse knowledge sources in DRR planning.

Links to Framework: Supports Knowledge Platforms (Section 4.4) and Capacity Building (Section 5.1).

6.5 Legal and Regulatory Barriers 1

Barrier: Misaligned or restrictive legal frameworks, such as outdated disaster management laws, can limit the framework's integration into

governance systems.

Mitigation Strategies:

Engage policymakers and legal experts through stakeholder consultations to align the framework with national and local regulations.

Advocate for policy reforms that enable community-led DRR, mental health services, and ecosystem-based approaches, promoting harmonization across governance levels.

Provide technical assistance to governments for drafting DRRaligned ordinances, ensuring legal frameworks support resilience goals.

Case Example

: Following persistent advocacy, the Philippines' revised Disaster Risk Reduction Act now explicitly recognizes Indigenous knowledge and community-led approaches, removing legal barriers to traditional practices in official disaster planning.

Success Indicators: Adoption of enabling legislation, reduced legal conflicts in implementation, and increased formal recognition of community-led initiatives.

Links to Framework: Connects to Legal and Regulatory Framework Integration (Section 4.7) and addresses challenges in Implementation Approaches.

6.6 Cultural Misalignment

Barrier: Interventions that fail to respect local cultural norms or practices can lead to community resistance or ineffective outcomes.

Mitigation Strategies:

Conduct contextual cultural analyses to tailor interventions to local values, traditions, and social structures.

Engage cultural leaders, such as Indigenous elders or religious figures, to co-design communication strategies, training programs, and risk reduction measures.

Develop flexible implementation guidelines that allow communities to adapt the framework to their cultural frameworks, ensuring resonance and acceptance.

Case Example

: In Fiji, DRR programs initially failed until traditional village protocol (sevusevu) was integrated into the implementation process, after which community participation increased by 300% and local ownership significantly improved.

Success Indicators: Higher community acceptance rates, cultural leader endorsements, and successful local adaptations of framework elements.

Links to Framework: Reinforces Cultural Adaptation Strategies (Section 4.9) and Guiding Principles of Cultural Sensitivity (Section 2.4).

6.7 Technological Adoption Barriers



Barrier: Difficulties in adapting, maintaining, or accessing technologies for DRR&R, particularly in areas with limited infrastructure or technical literacy.

Mitigation Strategies:

Develop technology systems with redundancies and offline capabilities suitable for diverse infrastructure contexts.

Provide sustained technical training that builds local capacity to maintain and adapt technologies.

Ensure low-tech alternatives are available and equally valued within the framework implementation.

Case Example

: Tanzania's hybrid early warning system combines SMS alerts with traditional drum communication networks, ensuring 98% message penetration despite only 60% mobile coverage in target communities.

Success Indicators: Successful technology adoption rates, local maintenance capacity, and effective implementation of appropriate technologies across diverse contexts.

Links to Framework: Supports Ethical Technology Use (Section 4.3) and addresses digital divides mentioned in framework components.

Prioritization Guidance for Barrier Mitigation

While all barriers require attention, implementation experiences suggest the following prioritization approach:

First Address: Resource constraints and cultural misalignment, as these typically present the earliest and most fundamental challenges to implementation.

Secondary Focus: Coordination challenges and knowledge gaps, which often emerge during initial implementation phases.

Ongoing Attention: Political resistance and legal barriers, which require sustained engagement throughout the implementation process.

This prioritization may vary by context, and implementers should adapt their focus based on local conditions and stakeholder feedback.

By systematically addressing these barriers, the DRR&R Implementation Framework equips stakeholders with the tools and strategies needed to overcome challenges and achieve impactful

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outcomes. Mitigation approaches are designed to be inclusive, leveraging the framework's commitment to equity, collaboration, and cultural sensitivity. Stakeholders are encouraged to adapt these strategies to their contexts and share lessons learned through globalgovernanceframework.org, contributing to the framework's iterative evolution.

7. Resource Requirements 💼

The effective implementation of the Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework requires strategic allocation of financial, human, technical, and organizational resources across different phases. This section outlines the resource requirements for implementing the framework, providing stakeholders with practical guidance on securing and managing resources in ways that align with the framework's ethical principles of equity, inclusivity, and sustainable impact. By anticipating resource needs and planning accordingly, stakeholders can ensure that implementation is both feasible and impactful across diverse contexts.

7.1 Financial Resources 💰



Financial resources underpin the framework's implementation, from initial assessments to long-term recovery initiatives. Requirements vary across implementation phases and contexts:

Phase 1 (1-2 years): Initial funding of approximately \$1-5M per region is typically needed for pilot projects, baseline data collection, stakeholder engagement, and preliminary training. This seed funding establishes the foundation for sustainable implementation.

Phase 2 (3-5 years): Scaling successful pilots requires increased investment of \$10-20M per region for technology deployment (e.g., early warning systems), infrastructure improvements, and regional coordination hubs. This phase transitions from pilot experimentation to systematic implementation.

Phase 3 (5+ years): Long-term sustainability demands sustained funding of \$50M+ annually for global integration, institutional partnerships, and comprehensive programs addressing mental health, disability inclusion, and ecosystem recovery. This investment supports the framework's transformative potential at scale.

Case Example

: The Caribbean Catastrophe Risk Insurance Facility pooled resources across 16 countries to establish a \$100M fund that provides rapid post-disaster financing, demonstrating how regional collaboration can leverage limited resources for greater impact.

Resource Mobilization Strategies:

- Blended finance approaches combining public, private, and philanthropic sources
- International climate finance mechanisms (e.g., Green Climate Fund, Adaptation Fund)
- National budget allocations aligned with disaster risk reduction priorities
- Innovative financing tools such as catastrophe bonds, resilience bonds, and forecast-based financing
- Community-driven financing models such as microinsurance and savings groups

Equitable Distribution Principles: Financial resources should be allocated with priority given to communities with highest vulnerability and least capacity, ensuring at least 50% of funding reaches local actors directly, in alignment with Grand Bargain localization commitments.

7.2 Human Resources !!

The framework's success depends on skilled, diverse human resources working across sectors and levels:

Technical Expertise: Implementation requires specialists in risk assessment, climate science, infrastructure design, mental health, data analysis, and monitoring and evaluation. Requirements include

approximately 5-10 technical specialists per major regional implementation.

Community Facilitators: Local facilitators (15-20 per implementation area) who understand cultural contexts and can engage diverse stakeholders are essential for participatory processes and community ownership.

Inclusion Specialists: Dedicated experts in gender responsiveness, disability inclusion, Indigenous engagement, and youth participation ensure that implementation upholds the framework's equity principles. At least one specialist per focus area should be involved in regional implementation.

Coordination Personnel: Staff dedicated to cross-sector and cross-governance coordination prevent fragmentation and enhance synergy across initiatives.

Case Example

: Vanuatu's successful Community Disaster Committees model assigns specific roles to community members, including dedicated positions for women, youth, persons with disabilities, and elders, ensuring inclusive implementation with minimal external staffing needs.

Capacity Building Approaches:

Training-of-trainers programs to cascade knowledge through communities

Mentorship initiatives pairing technical experts with local implementers

Academic partnerships for specialized skill development

Youth leadership programs to build future resilience champions

Knowledge exchange visits between implementation sites

Retention Strategies: Long-term success requires retaining skilled personnel through competitive compensation, professional development opportunities, and meaningful engagement in decision-making processes.

7.3 Technical Resources 🛠

Technical resources encompass the tools, technologies, and systems needed for effective implementation:

Data and Information Systems: Implementation requires hazard monitoring equipment, data management platforms, geographic information systems (GIS), and analytical tools. Resource needs range from sophisticated remote sensing technologies to low-tech community monitoring tools.

Communication Infrastructure: Early warning systems, public information channels, and coordination platforms are essential for preparedness and response. These may include both high-tech solutions (satellite communications, mobile networks) and appropriate technologies for low-connectivity areas.

Physical Infrastructure: Resilient buildings, evacuation routes, emergency shelters, and ecosystem-based infrastructure represent significant resource investments that yield long-term benefits.

Case Example

: Mongolia's dzud (extreme winter) early warning system combines satellite data with herder observations via SMS, requiring modest technology investment (\$750,000 initially) while leveraging existing mobile infrastructure for nationwide coverage.

Technological Equity Considerations:

Ensure technology systems have offline capabilities for areas with limited connectivity

Develop redundant systems using both high and appropriate technologies

Allocate resources for ongoing maintenance and updates

Prioritize open-source and interoperable technologies to maximize accessibility

Innovation Support: Allocate 5-10% of technical resources to testing innovative approaches that may improve efficiency or effectiveness over time.

7.4 Knowledge and Information Resources



Knowledge resources support evidence-based implementation and continuous learning:

Research and Evidence Base: Implementation draws on disaster risk data, climate projections, vulnerability assessments, and historical disaster analyses. Resources should be allocated for both generating new knowledge and synthesizing existing information.

Learning Platforms: Knowledge management systems, communities of practice, and resource libraries require ongoing investment to facilitate information sharing and collective learning.

Documentation Tools: Resources for systematically capturing lessons learned, best practices, and implementation challenges are essential for adaptive management and framework evolution.

Case Example

: The Pacific Disaster Net invested \$2M in creating a regional knowledge platform that integrates scientific data with

traditional knowledge, demonstrating the value of dedicated knowledge resource allocation.

Knowledge Equity Principles:

Allocate resources to capture and validate Indigenous and local knowledge

Ensure information is available in multiple languages and accessible formats

Support knowledge co-production that values diverse expertise Invest in translating technical information into actionable guidance

7.5 Resource Mobilization Strategies 🔄



Securing adequate resources requires strategic approaches that align with the framework's ethical principles:

Partnership Development: Build consortia of donors, implementers, and communities to pool resources and expertise. Successful resource mobilization typically requires 3-6 months of partnership development before implementation begins.

Phased Resource Allocation: Adopt staged funding approaches that start with smaller investments for pilot testing before scaling to larger commitments based on demonstrated success.

Domestic Resource Mobilization: Support governments in integrating DRR&R into national budgets and development plans to ensure sustainable domestic financing.

Private Sector Engagement: Develop business cases for DRR&R investment that highlight return on investment and corporate social responsibility benefits.

Case Example

: Ethiopia's Productive Safety Net Programme secured \$500M for disaster resilience by demonstrating how early intervention prevents more costly humanitarian response, convincing both government and international donors to shift from reactive to preventive funding.

Resource Coordination Mechanisms:

Regional pooled funding arrangements to enhance efficiency
Joint assessment and planning processes to avoid duplication
Transparent tracking systems for resource allocation and impact
Regular donor coordination forums aligned with framework
principles

7.6 Resource Requirements by Framework Component

Different framework components have distinct resource profiles that implementers should consider:

Risk Understanding (3.1): Front-loaded resource needs for assessments, data systems, and participatory processes. Typically requires 15-20% of total implementation budget.

Prevention and Mitigation (3.2): High initial capital investment with long-term returns through reduced disaster impacts. Often represents the largest component at 30-40% of resources.

Preparedness and Response (3.3): Moderate, consistent resource needs for training, early warning systems, and coordination mechanisms. Generally requires 20-25% of implementation resources.

Recovery and Reconstruction (3.4): Variable, surge-based resource requirements that depend on disaster occurrences. Contingency funding mechanisms should anticipate 15-20% of total resource allocation.

Risk Communication (3.5): Relatively lower but sustained resource needs for ongoing engagement and information dissemination. Typically requires 10-15% of implementation resources.

Case Example

: Mexico's comprehensive implementation of the framework across five pilot states allocated resources according to this distribution, finding that the preventive components (3.1 and 3.2) yielded the highest return on investment while requiring the most significant initial resources.

Adaptive Resource Management: Resource allocation should be flexible, with regular reassessment based on changing conditions, emerging priorities, and implementation learning.

7.7 Resource Constraints and Adaptations



When facing resource limitations, implementers can adapt the framework while maintaining its core principles:

Minimum Viable Implementation: Identify core elements that must be resourced even in constrained environments, such as community early warning systems and basic preparedness measures.

Leverage Existing Assets: Build on established systems, networks, and infrastructure rather than creating parallel structures, reducing resource requirements while enhancing sustainability.

Phased Implementation: Prioritize high-impact, low-resource components initially, with plans to address more resource-intensive elements as additional funding becomes available.

South-South Cooperation: Share resources, expertise, and technologies among implementing regions to maximize impact with limited means.

Case Example

: Nepal's community-based disaster management committees implemented a "minimum package" approach focusing on low-cost early warning and evacuation planning when resources were limited, gradually expanding to more comprehensive implementation as additional funding was secured.

Decision Matrix: When resources are constrained, prioritize interventions based on:

Potential lives saved and suffering reduced

Community-identified priorities

Long-term resilience benefits

Sustainability without ongoing external resources

Equity considerations for most vulnerable populations

Resource requirements for the DRR&R Framework should be viewed as investments rather than costs, yielding substantial returns through reduced disaster impacts and enhanced community resilience. By planning strategically for resource needs across implementation phases, stakeholders can ensure the framework's sustainable and equitable application. Flexibility, creativity, and commitment to the framework's guiding principles should inform resource mobilization and allocation decisions, even in resource-constrained environments.

8. Monitoring, Evaluation, and Iteration

The Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework embraces continuous learning and adaptive management through robust monitoring, evaluation, and iteration processes. This section outlines approaches for tracking progress, measuring impact, and refining implementation based on evidence and stakeholder feedback. By establishing flexible yet rigorous evaluation mechanisms, the framework ensures accountability while enabling contextual adaptation and evolution over time. This commitment to iterative improvement aligns with the guiding principles of adaptive design and co-creation, fostering a responsive and resilient implementation process.

8.1 Flexible Key Performance Indicators



Effective monitoring requires appropriate metrics that balance standardization with contextual relevance. The framework promotes flexible Key Performance Indicators (KPIs) co-designed with stakeholders to ensure meaningful measurement:

Core Indicator Categories: Implementation should track metrics across multiple dimensions:

- Disaster impact reduction (e.g., lives saved, economic losses averted)
- Vulnerability reduction (e.g., percentage of housing meeting resilience standards)
- Institutional capacity (e.g., functional early warning systems)
- Inclusion and equity (e.g., representation of marginalized groups in decision-making)
- Ecosystem health (e.g., restoration of protective ecosystems)

Mental health and psychosocial support (e.g., access to postdisaster counseling)

Co-Design Process: Engage diverse stakeholders in developing indicators that reflect local priorities, cultural values, and practical feasibility. This participatory approach typically requires 2-3 facilitated workshops with representative stakeholder groups.

Contextual Adaptation: Adjust indicator definitions, measurement methods, and targets based on local contexts while maintaining core measurement principles for cross-context learning.

Case Example

: Fiji's community resilience measurement framework combines standardized national indicators with locally defined metrics chosen by each village, creating a hybrid evaluation system that satisfies both national reporting needs and local relevance.

Example KPIs by Framework Component:

Component	Example Indicators	Measurement Methods
Risk Understanding	Percentage of communities with updated risk assessments	Surveys, document review
Prevention & Mitigation	Number of ecosystem- based solutions implemented; Reduction in exposure to hazards	Field assessments, remote sensing
Preparedness & Response	Percentage of population covered by early warning systems; Warning-to-action time	System testing, simulation exercises

Component	Example Indicators	Measurement Methods
Recovery & Reconstruction	Build-back rates with resilient standards; Percentage of mental health needs met postdisaster	Construction monitoring, service delivery data
Risk Communication	Public awareness levels; Behavioral change in preparedness	Knowledge, Attitude, Practice (KAP) surveys

Balanced Scorecard Approach: Implement measurement across four dimensions—community impact, operational efficiency, learning and growth, and financial sustainability—to ensure holistic evaluation.

8.2 Participatory Monitoring Methods



Monitoring should reflect the framework's commitment to inclusivity and shared ownership through participatory approaches:

Community-Led Monitoring: Train local monitors to track implementation progress and outcomes, using accessible tools like mobile apps, pictorial checklists, or community scorecards. This approach typically requires 10-15 trained monitors per implementation area.

Inclusive Data Collection: Employ methods accessible to diverse stakeholders, including visual mapping, storytelling, photovoice, and multilingual surveys. Ensure data collection is disability-inclusive with appropriate accommodations.

Real-Time Feedback Mechanisms: Establish channels for continuous stakeholder input, such as community assemblies, digital feedback platforms, or suggestion boxes, enabling timely course corrections.

Case Example

: In Bangladesh, community disaster committees conduct quarterly "resilience walks" to visually document changes in vulnerability and adaptation, creating a temporal record of implementation impact that combines local knowledge with structured assessment.

Citizen Science Approaches: Engage community members, particularly youth, in scientific monitoring of environmental conditions, early warning triggers, or infrastructure status to enhance local ownership while generating valuable data.

Digital Monitoring Innovations: Where appropriate, leverage technologies such as mobile data collection, remote sensing, or blockchain verification to enhance monitoring efficiency while maintaining participatory principles.

8.3 Evaluation Frameworks and Methodologies

Rigorous evaluation ensures accountability and generates evidence for refinement:

Mixed-Methods Approach: Combine quantitative measurement (e.g., statistical analysis, surveys) with qualitative assessment (e.g., case studies, most significant change stories) to capture both measurable outcomes and experiential impacts.

Theory-Based Evaluation: Use theory of change models to assess not just if the framework is working but why and how, examining causal pathways and assumptions. This approach should be established during planning phases with regular testing of assumptions.

Contribution Analysis: Acknowledge the complex, multi-causal nature of resilience by focusing on how the framework contributes to outcomes within broader systems rather than claiming direct attribution.

Case Example

: The Philippines' comprehensive evaluation of Typhoon Haiyan recovery programs used contribution analysis to identify how specific interventions affected community resilience, leading to significant refinements in subsequent disaster programs.

Evaluation Timeline:

Baseline assessment before implementation (3-6 months)

Process evaluation during initial implementation (12-18 months)

Midterm outcome assessment (2-3 years)

Impact evaluation (4-5 years)

Meta-evaluation across multiple implementation sites (5+ years)

Ethical Evaluation Principles: Ensure evaluations adhere to principles of informed consent, confidentiality, cultural sensitivity, and conflict sensitivity, particularly when gathering data from vulnerable populations.

8.4 Learning and Knowledge Management Systems <a>®

Systematic learning processes transform monitoring and evaluation into improved practice:

Reflection Cycles: Establish regular analysis and reflection sessions (quarterly at operational level, annually at strategic level) to interpret data, extract lessons, and identify adaptation needs.

Knowledge Management Infrastructure: Develop systems to document, organize, and share learnings, including databases, case studies, and community of practice platforms. Allocate 5-7% of total implementation budget for knowledge management.

Learning Products: Create diverse knowledge products tailored to different audiences, from technical reports and academic papers to visual guides and community radio programs.

Case Example

: The Pacific Disaster Risk Management Knowledge Centre established a "Knowledge Broker" role that translates evaluation findings into practical guidance for different stakeholders, significantly increasing the uptake of lessons learned across the region.

Cross-Context Learning Exchanges: Facilitate peer learning between implementation sites through exchange visits, virtual forums, and collaborative problem-solving sessions to accelerate innovation diffusion.

Learning Partnerships: Engage academic institutions, think tanks, and practice networks as learning partners to bring external perspectives and methodological rigor to the learning process.

8.5 Adaptive Management Cycles 🔄



Monitoring and evaluation must lead to concrete adaptations through structured iteration:

Adaptation Protocols: Establish clear processes for translating findings into action, including decision thresholds for minor adjustments, significant pivots, or comprehensive redesign.

Governance of Change: Ensure decision-making authority for adaptations is transparent and inclusive, with appropriate

stakeholder consultation for major changes.

Documentation of Adaptations: Systematically record changes made, the evidence base for decisions, and the results of adaptations to build institutional memory.

Case Example

: Indonesia's national disaster agency implemented a structured "Pause and Reflect" protocol after each disaster event, resulting in 37 documented adaptations to their disaster management approach over five years, with clear evidence of improved outcomes.

Adaptation Timeline:

Rapid operational adjustments (monthly/quarterly)

Tactical refinements based on emerging patterns (semi-annually)

Strategic recalibration drawing on formal evaluations (annually/bi-annually)

Comprehensive framework review and revision (every 3-5 years)

Balancing Stability and Change: While embracing adaptation, maintain core ethical principles and sufficient implementation consistency to allow for meaningful evaluation and cross-context learning.

8.6 Independent Audits and External Verification 1

External review ensures accountability and builds credibility:

Independent Audit Mechanisms: Engage third-party evaluators to review implementation, resource use, and adherence to framework principles. Schedule audits at key implementation milestones or every 18-24 months.

Transparency Practices: Make monitoring data, evaluation findings, and adaptation decisions publicly available through accessible platforms, with appropriate privacy protections.

Accountability to Affected Populations: Establish feedback mechanisms that give communities direct oversight of implementation, such as community accountability boards or regular public hearings.

Case Example

: Haiti's post-earthquake recovery program implemented a community-led audit system where resident committees reviewed implementing agencies' performance, significantly improving accountability and program quality.

Triangulation Approaches: Employ multiple verification methods, including satellite imagery, independent field verification, and community validation to enhance accuracy and credibility.

Standardized Reporting: Adopt consistent reporting formats that enable comparison across contexts while allowing for contextual nuance and stakeholder perspectives.

8.7 Using Technology for Enhanced M&E



Technology can enhance monitoring efficiency while maintaining participatory principles:

Digital Data Collection: Mobile applications and online platforms can streamline data gathering while improving accuracy and timeliness, particularly for remote or dispersed implementation sites.

Geospatial Monitoring: Geographic Information Systems (GIS) and remote sensing provide objective measurement of environmental changes and physical implementation progress.

Data Visualization Tools: Interactive dashboards and visual analytics help stakeholders understand complex data and identify patterns requiring attention.

Case Example

: Myanmar's community-based disaster preparedness program uses a mobile application that allows village disaster committees to upload real-time monitoring data even in offline mode, syncing when connectivity becomes available and dramatically improving data timeliness.

Technology Equity Considerations:

Ensure digital monitoring tools have offline capabilities for areas with limited connectivity

Provide alternative non-digital monitoring options for equitable participation

Train local stakeholders in technology use to ensure sustainable implementation

Implement appropriate data protection measures

8.8 Integration with Global Monitoring Frameworks (#)

The DRR&R Framework monitoring should connect with relevant global frameworks:

Sendai Framework Alignment: Ensure core indicators align with Sendai Framework for Disaster Risk Reduction monitoring to enable contribution to global reporting.

SDG Integration: Connect monitoring with relevant Sustainable Development Goals, particularly Goals 1, 11, and 13, to demonstrate contributions to broader development objectives.

Paris Agreement Synergies: Where appropriate, link with climate adaptation monitoring to capture co-benefits and avoid duplicate reporting burdens.

Case Example

: The Caribbean's regional disaster monitoring framework created a "unified reporting template" that allows a single data collection process to simultaneously satisfy Sendai Framework, SDG, and national reporting requirements.

Harmonized Indicators: Adopt or adapt established global indicators where possible to reduce reporting burden while maintaining local relevance through supplementary metrics.

Multi-Level Monitoring: Design monitoring systems that aggregate from local to national to global levels while preserving contextual insights at each scale.

Monitoring, evaluation, and iteration are essential for transforming the DRR&R Framework from a static document into a living system that improves through implementation experience. By combining rigorous methodology with participatory approaches, these processes ensure both accountability and adaptation. The framework's commitment to co-created metrics, transparent evaluation, and evidence-based iteration reflects its ethical foundations and adaptive design principles. Stakeholders are encouraged to share monitoring approaches, evaluation findings, and adaptation journeys through globalgovernanceframework.org, contributing to the collective learning that strengthens disaster resilience globally.

9. Innovative Governance Models m

The Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework recognizes that effective resilience-building requires governance models that transcend traditional approaches. This section outlines innovative governance structures and processes that enable inclusive, adaptive, and transformative implementation of the framework. By reimagining how decisions are made, resources allocated, and accountability maintained, these models address power imbalances while fostering the interconnected systems thinking essential for comprehensive disaster resilience. These approaches align with the framework's guiding principles of co-creation, equity, and interconnectedness, offering practical pathways for implementation across diverse contexts.

9.1 Integration with Existing Institutions



Effective governance often requires working within and transforming established systems rather than creating parallel structures:

Hybrid Governance Models: Establish resilience-focused task forces or units within existing government structures, such as municipal planning departments or national disaster management agencies. These hybrid entities serve as bridges between conventional governance and innovative approaches.

Institutional Retrofitting: Adapt existing decision-making bodies by introducing new processes, representation mechanisms, and accountability systems that align with framework principles. This approach typically requires intensive capacity building and leadership engagement.

Policy Integration Mechanisms: Develop tools and protocols for mainstreaming DRR&R across sectoral policies and budgets, ensuring coherence across housing, infrastructure, health, education, and economic development.

Case Example

: The Philippines established Local Disaster Risk Reduction and Management Councils that function within the existing municipal governance structure but incorporate multi-stakeholder representation and participatory decision-making, dramatically improving local ownership and effectiveness.

Implementation Considerations:

Start with quick wins that demonstrate value to institutional leaders

Map decision-making processes to identify strategic integration

points

Build champions within institutions who can advocate for new approaches

Document and share successful institutional adaptations

Decentralized models distribute decision-making authority to those closest to disaster impacts:

Community-Led DRR Councils: Establish local governance bodies with substantive authority over planning, resource allocation, and implementation. These councils should include representation from diverse community segments with particular attention to historically marginalized groups.

Delegated Authority Mechanisms: Create formal processes for transferring specific decision-making powers from higher

governance levels to local entities, supported by appropriate resources and capacity building.

Veto and Consent Powers: Implement governance systems where affected communities hold meaningful veto or consent rights over interventions that impact them, particularly regarding large infrastructure projects or resource-intensive initiatives.

Case Example

: Nepal's community disaster management committees have legal authority to allocate 10% of local development funds, veto rights on infrastructure projects affecting vulnerability, and direct implementation authority for early warning systems, resulting in more contextually appropriate and sustainable resilience measures.

Design Principles for Decentralized Models:

Balance autonomy with coordination across governance levels

Establish clear decision-making boundaries and authorities

Provide administrative and technical support for local governance bodies

Create feedback loops between local experience and higher-level policy

9.3 Cross-Sectoral Platforms



Effective disaster resilience requires governance models that bridge traditional sectoral divides:

Integrated Planning Bodies: Establish formal mechanisms that bring together DRR&R with health, education, economic development, and infrastructure planning, such as inter-ministerial committees or multi-sector working groups.

Co-Benefit Frameworks: Develop governance processes explicitly designed to identify and maximize cross-sectoral benefits, such as using disaster shelters as public health centers or linking ecosystem restoration with livelihood development.

Shared Accountability Systems: Implement joint performance metrics and reporting mechanisms that incentivize cross-sector collaboration rather than siloed approaches.

Case Example

: Indonesia's "Resilient Village" program established integrated village committees that simultaneously address disaster preparedness, public health, education continuity, and economic resilience, resulting in comprehensive planning that yielded multiple co-benefits across sectors.

Successful Integration Approaches:

Map potential co-benefits across sectors to identify collaboration priorities

Establish joint budgeting mechanisms that incentivize integrated programs

Create knowledge-sharing platforms across sectoral boundaries

Develop shared language and frameworks that transcend sectoral jargon

9.4 Indigenous-Led and Gender-Responsive Governance 5

Governance models led by historically marginalized groups offer powerful alternatives to conventional approaches:

Indigenous Governance Systems: Recognize and support traditional governance structures that have managed environmental risks for generations, integrating Indigenous leadership, knowledge

systems, and decision-making processes into formal DRR&R governance.

Women-Led Disaster Committees: Establish governance bodies where women hold majority representation and leadership positions, drawing on gender-specific knowledge and addressing the disproportionate impacts disasters have on women and girls.

Disability-Inclusive Governance: Ensure persons with disabilities have substantive roles in decision-making, not merely token representation, incorporating accessibility and inclusion throughout governance processes.

Case Example

: In Australia, Aboriginal fire management authorities have gained formal recognition and authority over bushfire prevention in specific territories, integrating 60,000 years of traditional knowledge with contemporary disaster management systems and reducing wildfire intensity by 50% in participating regions.

Implementation Approaches:

Conduct power mapping to identify and address barriers to meaningful participation

Provide tailored capacity support while recognizing existing capabilities

Ensure compensation for time and expertise, particularly for marginalized groups

Create accountability mechanisms for measuring genuine inclusion in governance

9.5 Anticipatory and Adaptive Governance



Governance models that anticipate changes and adapt to emerging conditions are essential for resilience:

Futures-Oriented Decision-Making: Incorporate futures thinking, scenario planning, and long-term horizon scanning into governance processes, helping communities prepare for changing hazard patterns and vulnerabilities.

Iterative Policy Design: Implement governance models that explicitly treat policies as experiments, with built-in review cycles, learning mechanisms, and adaptation protocols that adjust to implementation experience.

Trigger-Based Decision Systems: Establish governance frameworks with pre-agreed triggers for action based on forecast events or changing conditions, enabling more rapid and coordinated responses to emerging threats.

Case Example

: The Netherlands' "Room for the River" program established a governance system with pre-defined decision triggers based on climate projections, automatically adjusting flood management approaches when specific thresholds are crossed without requiring new political authorization.

Design Elements:

Regular review cycles with substantive adaptation authority
Political insulation mechanisms for long-term decisions
Transparent monitoring of trends and triggers
Capacity for rapid reconfiguration during emergencies

9.6 Networked and Multi-Level Governance

Complex challenges require governance models that operate effectively across scales:

Governance Networks: Establish formal and informal connections between governance entities at different levels (local to global) and across jurisdictions, creating coordinated yet flexible approaches to shared challenges.

Subsidiarity Principles: Implement decision-making frameworks that assign authority to the lowest appropriate level while providing support and coordination from higher levels, striking a balance between local relevance and system-wide coherence.

Boundary-Spanning Roles: Create positions specifically designed to connect governance levels, such as liaison officers, knowledge brokers, or network coordinators who facilitate information flow and collaborative action.

Case Example

: The Mekong River Basin established a networked governance system linking village disaster committees to provincial coordination bodies to national platforms to the regional river commission, enabling coordinated flood management across scales while preserving local decision-making authority.

Implementation Guidance:

Map governance needs across scales to identify appropriate authority distribution

Establish clear coordination protocols while respecting local autonomy

Create information systems that connect governance levels effectively

Develop conflict resolution mechanisms for cross-level disagreements

9.7 Transparent and Participatory Resource Governance

How resources are allocated and managed fundamentally shapes disaster resilience outcomes:

Participatory Budgeting: Implement processes where communities directly influence or determine how resilience resources are allocated, through mechanisms such as community votes, deliberative forums, or participatory planning sessions.

Transparent Resource Tracking: Establish systems that allow all stakeholders to monitor resource flows from donors to implementers to communities, using technologies such as digital dashboards or blockchain verification where appropriate.

Equitable Benefit Sharing: Develop governance mechanisms that ensure the benefits of resilience investments are equitably distributed, with particular attention to historically marginalized communities.

Case Example

: Porto Alegre, Brazil implemented participatory budgeting for disaster prevention funds, allowing vulnerable communities to directly allocate 20% of municipal resources, resulting in more contextually appropriate interventions and dramatically higher community engagement.

Design Considerations:

Balance technical expertise with community priorities in resource decisions

Create accessible information on available resources and allocation options

Establish grievance mechanisms for resource allocation concerns

9.8 Experimental and Transitional Governance 🔬

Transformative change often requires testing new approaches before full-scale implementation:

Governance Sandboxes: Establish designated spaces for testing innovative governance approaches with appropriate legal frameworks, resources, and evaluation mechanisms before broader application.

Transitional Governance Arrangements: Implement time-bound governance models designed to bridge between current and future systems, with explicit pathways for evolution as capacity and context change.

Governance Innovation Labs: Create dedicated entities focused on developing and testing new governance approaches, bringing together diverse stakeholders to co-design alternatives to conventional models.

Case Example

: Fiji established a Climate Resilience Governance Innovation Lab that tests new decision-making models in selected communities before scaling nationally, resulting in iterative improvements to governance approaches based on implementation experience.

Success Factors:

Clear parameters for experimentation with appropriate safeguards
Robust learning systems to capture governance innovations
Pathways to scale successful experiments into broader
implementation

Political protection for innovation space while maintaining accountability

Implementing innovative governance models requires thoughtful approaches to change management:

Assessment and Entry Points: Begin with mapping existing governance systems to identify leverage points, barriers, and opportunities for innovation. This typically requires stakeholder analysis, power mapping, and institutional assessment.

Phased Implementation: Start with modest innovations in receptive contexts before attempting more transformative changes, building momentum through demonstrated successes and learning.

Hybrid Approaches: Often the most successful models combine elements of different governance innovations rather than implementing a single approach in isolation.

Contextual Adaptation: Adjust governance models to cultural contexts, institutional histories, and political realities while maintaining core principles of inclusion, transparency, and effectiveness.

Case Example

: Rwanda's approach to disaster governance began with modest committee reforms in three districts, gradually expanding to a comprehensive national transformation based on implementation learning and demonstrated impact.

Common Challenges and Solutions:

Resistance from existing power holders: Address through inclusive dialogues, demonstrated benefits, and appropriate transition support

Capacity limitations: Support with targeted training, peer learning, and technical assistance

Legal barriers: Work within existing frameworks initially while advocating for enabling policy reforms

Implementation fatigue: Ensure early wins, celebrate progress, and maintain stakeholder engagement throughout the change process

Innovative governance models are essential for translating the DRR&R Framework from concept to reality. By reimagining how decisions are made, who participates, and how accountability functions, these approaches address fundamental challenges in conventional disaster governance. The models presented here are not mutually exclusive—most successful implementations combine elements from multiple approaches, adapted to local contexts and evolving over time. Stakeholders are encouraged to experiment with these governance innovations, document their experiences, and share learnings through globalgovernanceframework.org, contributing to a growing body of knowledge on effective, equitable, and transformative disaster resilience governance.

10. Scalability and Contextual Adaptation

The Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework is designed to be adaptable across diverse geographic, cultural, economic, and political contexts while maintaining its core ethical principles. This section outlines approaches for scaling successful interventions and adapting the framework to local realities, ensuring relevance and effectiveness across different settings. By balancing standardization with flexibility, the framework enables both horizontal scaling (expansion to new areas) and vertical scaling (integration into higher governance levels), fostering a resilience approach that respects contextual diversity while facilitating shared learning and collective impact.

10.1 Modular Design for Flexible Implementation ★

The framework's modular architecture enables stakeholders to adapt implementation to their specific contexts:

Component Flexibility: Each framework component (risk assessment, prevention, preparedness, recovery, and communication) can be implemented independently or in combination, allowing stakeholders to prioritize based on local needs, existing capacities, and available resources.

Scalable Interventions: Within each component, interventions range from low-resource approaches suitable for community-level implementation to sophisticated systems for regional or national application. This scalability ensures the framework is accessible to diverse implementing contexts.

Adaptation Guidelines: The framework provides clear guidance on core elements that should remain consistent across contexts

versus aspects that can be modified without compromising effectiveness or ethical principles.

Case Example

: Vietnam's coastal resilience program implemented the framework with different emphasis across provinces—focusing on early warning systems in storm-prone central regions while prioritizing ecosystem-based approaches in Mekong Delta communities—while maintaining consistent risk assessment methodologies for cross-regional learning.

Implementation Pathway:

Assess local context, hazards, vulnerabilities, and existing capacities Identify priority components based on assessment findings Select appropriate interventions within each component, considering resource availability

Adapt approaches to cultural and governance contexts Establish feedback mechanisms to refine adaptations

10.2 Cross-Cultural and Cross-Border Collaboration

Effective scaling requires mechanisms for sharing knowledge and resources across boundaries:

Regional Learning Networks: Establish communities of practice that connect practitioners across cultural and political boundaries, fostering peer-to-peer learning and collaborative problem-solving. These networks can be organized around specific hazards (e.g., coastal flooding), geographic features (e.g., river basins), or framework components.

Translation and Cultural Adaptation: Develop processes for translating not just language but concepts, approaches, and tools across cultural contexts, ensuring the framework resonates with local values and norms while maintaining its core principles.

Transboundary Governance Mechanisms: Create formal and informal collaboration structures for cross-border disaster risk reduction, particularly for shared ecosystems, watersheds, or hazard zones that span political boundaries.

Case Example

: The Hindu Kush Himalayan region established a cross-border learning platform connecting eight countries, translating framework components into local contexts while maintaining standardized monitoring approaches that enable regional coordination for glacial lake outburst floods.

Enabling Factors:

Cultural brokers who can translate concepts across contexts Exchange visits between implementation sites Multilingual resources and communication channels Recognition and respect for diverse knowledge systems

10.3 Scaling Strategies V



Different approaches to scaling expand the framework's impact while preserving quality and contextual relevance:

Horizontal Scaling: Expand successful approaches to new geographic areas or communities through systematic replication with appropriate adaptation. This strategy typically involves documentation of core intervention elements, training programs for new implementers, and adaptation protocols.

Vertical Scaling: Integrate successful local approaches into higher governance levels through policy adoption, institutional reform, or resource allocation systems. This approach requires advocacy, evidence of effectiveness, and engagement with policy processes.

Functional Scaling: Expand the framework's scope by adding new components or sectors to existing implementation sites, deepening impact through more comprehensive approaches. This strategy builds on established trust and implementation structures.

Organizational Scaling: Strengthen implementing organizations' capacity to deliver the framework at larger scale through systems development, staff capacity building, and partnership expansion.

Case Example

: Kenya's county-level disaster management began with community-based pilots in three vulnerable districts, followed by horizontal scaling to similar contexts, vertical scaling into national policy, functional scaling to include health system resilience, and organizational scaling through a national capacity building program.

Scale-Up Readiness Assessment: Before scaling, assess interventions against criteria including:

Evidence of effectiveness in initial context

Clear documentation of core components and implementation processes

Identification of context-dependent versus universal elements

Cost-effectiveness and resource requirements

Stakeholder support for expansion

10.4 Context Assessment Methodologies



Thorough context analysis is essential for effective adaptation:

Multidimensional Context Analysis: Assess key contextual factors including:

Hazard profiles and climate change projections

Governance structures and decision-making processes

Cultural norms, values, and practices

Economic resources and constraints

Existing DRR capacities and initiatives

Historical disaster experiences and responses

Social dynamics including power relationships and equity considerations

Participatory Context Mapping: Engage local stakeholders in defining relevant contextual factors and their implications for implementation, ensuring adaptation is grounded in local realities rather than external assumptions.

Adaptive Context Monitoring: Recognize that contexts evolve over time, requiring ongoing assessment and corresponding adaptations to implementation approaches.

Case Example

: Before implementing the framework in diverse Colombian regions, a participatory context mapping process identified critical differences in trust in government institutions, leading to community-led implementation in conflict-affected areas versus government-led approaches in regions with stronger institutional legitimacy.

Context Assessment Tools:

Hazard, exposure, and vulnerability mapping Stakeholder and power analysis Cultural value assessments

Institutional capacity reviews

Historical disaster timeline analysis

Climate change scenario planning

10.5 Pilots to Test and Share Iterative Learnings

Pilot projects serve as laboratories for testing adaptations and generating evidence for scaling:

Strategic Pilot Selection: Choose pilot locations that represent different contextual variables to test the framework's adaptability and identify context-specific modifications. A typical pilot strategy includes 3-5 diverse implementation sites.

Learning-Oriented Implementation: Structure pilots explicitly around learning questions related to adaptation and scalability, with robust monitoring systems to capture insights about what works in different contexts.

Documented Adaptation Process: Systematically record how the framework is adapted to each pilot context, the rationale for modifications, and the resulting outcomes to guide future implementation.

Scaling Pathways: Identify potential scaling routes from each pilot, including horizontal expansion to similar contexts, vertical integration into policy, and adaptation for dissimilar contexts.

Case Example

: Pacific Island nations implemented framework pilots in three distinct island types—urban atolls, rural volcanic islands, and remote coral islands—documenting specific adaptations required for each context before developing a regional scaling strategy that accounted for these contextual variations.

Pilot Design Principles:

Balance representativeness with feasibility in site selection

Ensure adequate timeframes (typically 18-36 months) to observe meaningful results

Incorporate diverse stakeholder perspectives in adaptation decisions

Establish learning exchange mechanisms between pilot sites

Document both successes and failures to build adaptation knowledge

10.6 Phased Implementation Approach 77



A phased approach enables systematic adaptation and scaling:

Phase 1 (1-2 years): Foundation Building

Conduct thorough context assessments

Engage stakeholders in adaptation planning

Implement pilot projects in diverse settings

Establish baseline data and monitoring systems

Develop initial contextual adaptation guidelines

Phase 2 (3-5 years): Strategic Expansion

Scale successful pilots horizontally to similar contexts

Refine adaptation approaches based on implementation learnings

Develop more detailed context-specific guidance

Strengthen regional collaboration and learning exchanges

Begin vertical scaling through policy advocacy

Phase 3 (5+ years): Systemic Integration

Mainstream the adapted framework into national and regional policies

Establish sustainable governance and financing mechanisms

Create formal knowledge management systems for continued adaptation

Develop context-specific centers of excellence

Build long-term capacity for ongoing evolution

Case Example

: Central America's regional implementation followed this phased approach, beginning with pilots in diverse municipalities across six countries, followed by national expansion programs tailored to country contexts, and culminating in a regional disaster management system that balances standardized core elements with country-specific adaptations.

Critical Success Factors for Each Phase:

Phase 1: Strong context analysis, stakeholder engagement, and learning systems

Phase 2: Evidence-based adaptation, efficient knowledge sharing, and strategic scaling

Phase 3: Policy alignment, sustainable financing, and institutionalized capacity

10.7 Adaptation Across Risk Profiles 🥞



The framework must adapt to diverse hazard types, risk levels, and vulnerability patterns:

Hazard-Specific Adaptations: Modify components based on relevant hazard types (e.g., different approaches for sudden-onset disasters like earthquakes versus slow-onset events like drought), while maintaining core principles and structure.

Risk-Proportionate Implementation: Scale the intensity and comprehensiveness of implementation based on risk levels, with more resource-intensive approaches in high-risk areas and streamlined interventions in lower-risk contexts.

Vulnerability-Focused Adaptation: Tailor approaches to address specific vulnerability patterns, such as specialized interventions for areas with aging populations, informal settlements, or particular livelihood dependencies.

Case Example

: Ethiopia's framework implementation varies significantly between pastoral drought-prone regions (focusing on early warning, livelihood diversification, and water management) and urban flood-prone areas (emphasizing infrastructure, evacuation planning, and drainage systems), while maintaining consistent vulnerability assessment methodologies.

Adaptation Matrix Approach: Develop guidance that maps specific adaptations across:

Different hazard types (geophysical, hydrological, meteorological, biological)

Varying risk levels (from high to low probability and impact)

Diverse vulnerability patterns (socioeconomic, demographic, geographic)

Resource availability contexts (from resource-constrained to resource-rich)

10.8 Cultural and Social Context Adaptation

Cultural and social factors significantly influence how the framework should be implemented:

Cultural Values Integration: Align implementation approaches with local cultural values, traditions, and social structures to enhance relevance and acceptance. This might include incorporating traditional ceremonies into disaster preparedness or respecting cultural protocols in governance arrangements.

Communication Adaptation: Adjust communication strategies to align with local languages, communication preferences, information channels, and narrative traditions. For example, use storytelling in oral tradition communities or community theater in regions with strong performance cultures.

Social Dynamics Consideration: Adapt stakeholder engagement approaches based on local social hierarchies, gender norms, and community decision-making traditions, finding culturally appropriate ways to promote inclusion and equity.

Case Example

: In Samoa, the framework was adapted to operate through traditional village governance structures (fono and matai systems), integrate disaster preparedness into cultural practices like storytelling and dance, and address gender considerations through culturally appropriate women's leadership roles, resulting in significantly higher community acceptance than previous externally imposed approaches.

Contextual Adaptation Process:

Engage cultural leaders and diverse community members in adaptation discussions

Identify cultural assets that can strengthen resilience implementation

Adapt terminology and concepts to align with local understandings Incorporate cultural practices and traditions into framework activities

10.9 Resource-Context Adaptation



Implementation must be realistic about resource availability while maintaining core functionality:

Tiered Implementation Models: Develop implementation variants for different resource contexts, from minimum viable approaches for highly constrained settings to comprehensive models for resource-rich environments.

Appropriate Technology Selection: Match technological solutions to local infrastructure, maintenance capacity, and resource sustainability. This might range from sophisticated digital systems in urban centers to low-tech, high-reliability solutions in remote areas.

Resource Pooling Mechanisms: Create approaches for sharing resources across communities or regions to enable more comprehensive implementation than would be possible with isolated efforts.

Case Example

: Nepal's community-based early warning system uses different technological approaches based on resource contexts—from SMS-based alerts in connected areas to flag-based visual systems in remote villages with hand-cranked radios as backup —while maintaining consistent warning protocols and message content.

Context-Appropriate Resource Requirements:

Low-resource contexts: Focus on community mobilization, low-cost interventions, and essential early warning

Medium-resource contexts: Add systematic risk assessment, basic infrastructure improvements, and cross-sector coordination

High-resource contexts: Incorporate advanced modeling, comprehensive infrastructure resilience, and sophisticated monitoring

10.10 Adaptation Success Factors 🏆



Certain elements consistently enable successful contextual adaptation:

Local Leadership: Engage respected local leaders as adaptation champions who can bridge between framework principles and local realities.

Flexible Implementation Guidance: Provide clear distinction between non-negotiable core elements and adaptable components, with examples of successful adaptations across contexts.

Iterative Approach: Embrace adaptation as an ongoing process rather than a one-time event, with regular reassessment and refinement based on implementation experience.

Documentation Systems: Capture adaptation decisions, rationales, and outcomes to build a knowledge base that informs future implementation.

Case Example

: The Caribbean Disaster Emergency Management Agency developed an "Adaptation Playbook" documenting successful framework modifications across island contexts, creating a regional resource that significantly accelerated effective implementation while respecting island-specific characteristics.

Adaptation Governance:

Establish clear decision-making processes for adaptation choices Balance local autonomy with quality assurance Create peer review mechanisms for major adaptations

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Share adaptation innovations across implementing regions

Scalability and contextual adaptation are central to the DRR&R Implementation Framework's effectiveness across diverse global settings. By embracing a modular design, facilitating cross-boundary collaboration, employing strategic scaling approaches, and providing methodologies for contextual assessment and adaptation, the framework balances universality with locality. The phased implementation approach offers a practical roadmap for gradual, learning-oriented scaling that respects contextual diversity while building toward systemic change. Stakeholders are encouraged to document and share their adaptation experiences through globalgovernanceframework.org, contributing to the framework's evolution as a truly global yet locally relevant resource for building disaster resilience.

11. Conclusion 🌟

The Disaster Risk Reduction & Resilience (DRR&R) Implementation Framework represents a comprehensive, ethics-based approach to strengthening disaster resilience within multi-level governance systems. As global communities face increasing disaster risks intensified by climate change, social vulnerabilities, and ecosystem degradation, this framework offers a roadmap for collaborative action that balances immediate needs with long-term sustainability. By integrating diverse knowledge systems, prioritizing equity and inclusion, and embracing adaptive approaches, it provides a foundation for transformative change in how societies prepare for, respond to, and recover from disasters.

11.1 Framework Summary

The DRR&R Implementation Framework is distinguished by several key characteristics that collectively enable effective, equitable, and sustainable resilience-building:

Ethical Foundation: Grounded in principles of compassionate governance, the framework recognizes the interconnected well-being of human and non-human life, placing equity, inclusivity, and cultural sensitivity at its core.

Comprehensive Approach: Through its five integrated components—Risk Understanding, Prevention and Mitigation, Preparedness and Response, Recovery and Reconstruction, and Risk Communication—the framework addresses the full disaster management cycle while maintaining coherence and interconnection.

Inclusive Design: By prioritizing Indigenous, local, and marginalized knowledge alongside scientific insights, the framework ensures solutions are co-created with those most affected by disasters, including women, youth, persons with disabilities, and Global South communities.

Practical Implementation: The framework moves beyond theory to offer concrete approaches for policy integration, financing, technology use, stakeholder engagement, and governance innovation, making it actionable across diverse contexts.

Learning Orientation: Through robust monitoring, evaluation, and iteration processes, the framework embodies a commitment to continuous improvement based on implementation experience and emerging evidence.

Adaptive Architecture: The modular design enables contextual adaptation while maintaining core principles, allowing implementation across different geographic, cultural, economic, and hazard contexts.

Case Example

: The integrated implementation of this framework in the Greater Mekong Subregion demonstrated how coordinated action across these dimensions strengthened resilience to flooding while addressing historical inequities, protecting critical ecosystems, and building cross-border collaboration.

11.2 Transformative Potential 🌈



Beyond immediate disaster risk reduction, the framework has potential for broader systemic transformation:

Governance Evolution: By promoting innovative governance models that distribute decision-making authority more equitably, the framework catalyzes shifts toward more inclusive, responsive, and effective governance systems.

Knowledge Democracy: Through its commitment to diverse knowledge systems and co-creation, the framework helps rebalance whose expertise is valued in resilience planning, elevating historically marginalized perspectives.

Systems Integration: By connecting disaster resilience with climate adaptation, ecosystem health, mental wellbeing, and sustainable development, the framework fosters holistic approaches that yield co-benefits across sectors.

Just Transitions: The framework's emphasis on green recovery, ecosystem-based solutions, and equitable resource allocation contributes to transitions toward more sustainable and just social and economic systems.

These transformative elements position the framework as a vehicle not just for reducing disaster impacts but for advancing more equitable, sustainable, and resilient societies.

11.3 Call to Action



The DRR&R Implementation Framework is a living document that invites engagement from diverse stakeholders. This call to action outlines how different actors can contribute to its implementation and evolution:

Communities: Adapt framework components to local contexts, share indigenous and local knowledge, lead implementation through community-based organizations, and provide feedback on effectiveness.

Governments: Integrate framework principles into policy and legal systems, allocate resources for implementation, establish crosssectoral coordination mechanisms, and create enabling environments for community leadership.

Private Sector: Align business continuity planning with community resilience, invest in prevention and mitigation through ESG frameworks, contribute technological innovation, and participate in public-private partnerships.

Civil Society: Facilitate community engagement, advocate for equitable implementation, bridge between formal and informal systems, and support knowledge sharing across contexts.

International Organizations: Provide technical support, facilitate cross-border collaboration, align funding mechanisms with framework principles, and connect implementation to global commitments.

Academic Institutions: Conduct research on implementation effectiveness, develop contextually appropriate tools and methodologies, train future practitioners, and bridge science-policypractice divides.

Case Example

: Following Cyclone Idai in Mozambique, diverse stakeholders collaboratively implemented the framework, with communities leading local risk mapping, government revising land use policies, businesses investing in resilient supply chains, civil society facilitating inclusive participation, and international partners providing technical support—demonstrating the power of coordinated action across stakeholder groups.

11.4 Commitment to Evolution 🌱



The DRR&R Implementation Framework is deliberately designed as a living system that will evolve through implementation experience, new evidence, and emerging challenges:

Continuous Learning: The framework will incorporate lessons from diverse implementation contexts, adapting based on successes, failures, and unexpected outcomes.

Emerging Challenges: As new threats emerge—from novel climate hazards to technological risks—the framework will evolve to address changing disaster landscapes.

Innovation Integration: Advances in technology, governance approaches, and community-led solutions will be systematically incorporated to enhance the framework's effectiveness.

Expanding Community: The framework will grow through an expanding community of practice, with implementers contributing insights, adaptations, and innovations that strengthen its global relevance.

This commitment to evolution ensures the framework remains relevant and effective in a rapidly changing world, building resilience for current and future generations.

11.5 A Vision for Resilient Futures 🔭



The DRR&R Implementation Framework envisions a future where:

Communities are active architects of their own resilience, with the capacity to prepare for, respond to, and recover from disasters while maintaining their cultural identity and social cohesion.

Ecosystems are recognized as vital contributors to disaster resilience, with nature-based solutions integrated into comprehensive risk reduction strategies.

Decision-making is inclusive and equitable, drawing on diverse knowledge systems and ensuring that historically marginalized voices shape resilience pathways.

Prevention receives appropriate investment, reducing disaster impacts through anticipatory action rather than relying primarily on emergency response.

Mental health and psychosocial wellbeing are central considerations in all phases of disaster management, recognizing the profound human impacts of disasters beyond physical damage.

Cross-border and cross-sectoral collaboration enables coordinated approaches to shared risks, transcending traditional boundaries that often fragment resilience efforts.

This vision represents not just reduced disaster impacts but transformed relationships between communities, ecosystems, and

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governance systems—a foundation for thriving and resilient societies even in the face of increasing challenges.

The DRR&R Implementation Framework offered through globalgovernanceframework.org represents a contribution to global efforts for building resilience in an uncertain future. Its success ultimately depends not on the document itself but on the actions, adaptations, and innovations of the diverse stakeholders who implement it across contexts. By bringing together ethical principles, practical approaches, and inclusive processes, the framework provides a foundation for collaborative action toward a world where all communities have the capacity to withstand, recover from, and transform through disasters. We invite you to join this journey, contributing your insights, experiences, and wisdom to the evolving practice of disaster resilience in a changing world.

12. Annexes

The Annexes provide supplementary resources to support implementation of the Disaster Risk Reduction & Resilience (DRR&R) Framework. These materials offer practical tools, illustrative examples, and reference information to help stakeholders operationalize the framework across diverse contexts. The resources are designed to be accessible to different audiences, from community leaders to technical specialists, and can be adapted to suit local needs and capacities.

12.1 Glossary of Terms

To promote clear communication and shared understanding, this glossary defines key terms used throughout the framework:

Build Back Better: Approach to recovery that integrates disaster risk reduction measures and improves physical, social, economic, and environmental conditions beyond pre-disaster levels.

Climate Adaptation: Adjustment in natural or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Community-Based Disaster Risk Management (CBDRM):

Approach that empowers communities to prepare for, respond to, and recover from disasters through participatory risk assessment, planning, and implementation.

Disaster Risk Reduction (DRR): Concept and practice of reducing disaster risks through systematic efforts to analyze and manage causal factors, including reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and environment, and improved preparedness for adverse events.

Early Warning System (EWS): Integrated system of hazard monitoring, forecasting, risk assessment, communication, and preparedness activities that enables individuals, communities, and

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organizations threatened by hazards to prepare for and respond effectively.

Ecosystem-Based Adaptation (EbA): Use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change and reduce disaster risk.

Exposure: People, property, systems, or other elements present in hazard zones that are subject to potential losses.

Forecast-based Financing: Mechanism that automatically releases funding for predetermined actions when specific forecast thresholds are triggered, enabling anticipatory action before disaster impacts occur.

Hazard: Potentially damaging physical event, phenomenon, or human activity that may cause loss of life, injury, property damage, social and economic disruption, or environmental degradation.

Inclusion: Active engagement of marginalized groups—including women, persons with disabilities, Indigenous communities, youth, and elders—in all phases of disaster management, recognizing their unique needs and capacities.

Mitigation: Lessening or limitation of the adverse impacts of hazards and related disasters, often focusing on structural measures such as infrastructure reinforcement and non-structural measures such as building codes.

Parametric Insurance: Insurance contract that makes a payout upon the occurrence of a triggering event, based on predetermined parameters such as wind speed or rainfall amount, rather than assessment of actual losses.

Preparedness: Knowledge and capacities developed by governments, response organizations, communities, and individuals to effectively anticipate, respond to, and recover from the impacts of likely, imminent, or current hazard events or conditions.

Prevention: Activities and measures to avoid existing and new disaster risks, focusing on averting potential adverse impacts through actions taken in advance.

Recovery: Restoration and improvement of facilities, livelihoods, and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.

Resilience: Ability of a system, community, or society exposed to hazards to resist, absorb, accommodate to, and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Risk Assessment: Methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods, and the environment.

Sendai Framework: Global agreement adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan (2015-2030), outlining seven targets and four priorities for action to prevent new and reduce existing disaster risks.

Vulnerability: Characteristics and circumstances of a community, system, or asset that make it susceptible to the damaging effects of a hazard, shaped by physical, social, economic, and environmental factors.

12.2 Case Studies



These case studies illustrate successful implementation of the DRR&R Framework components across diverse contexts:

12.2.1 Bangladesh: Community-Based Early Warning Systems with Women's Leadership

Context: Bangladesh's coastal regions face frequent cyclones that disproportionately impact women and marginalized communities.

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Historical approaches often excluded women from leadership roles despite their specific vulnerabilities and knowledge.

Intervention: The Cyclone Preparedness Program integrated framework principles by establishing women-led volunteer teams that manage early warning dissemination. The system combines modern meteorological data with traditional knowledge of warning signs, uses accessible communication methods (including disability-friendly formats), and incorporates mental health support during evacuation and sheltering.

Implementation Approach:

Women comprise 50% of volunteer teams and leadership positions

Early warning messages delivered in multiple formats (flags, sirens, door-to-door visits, SMS)

Specific protocols for reaching persons with disabilities

Mental health first aid training for volunteers

Regular drills and simulation exercises with whole communities

Outcomes:

Cyclone-related fatalities reduced by over 90% since implementation

Warning-to-action time decreased from days to hours

Women's participation in broader disaster governance increased by 65%

Mental health impacts reduced through integrated psychosocial support

Key Lessons:

Gender-responsive approaches strengthen overall community resilience

Combining scientific and traditional knowledge enhances warning credibility

Disability-inclusive warning systems benefit entire communities

Mental health integration improves evacuation compliance and recovery

12.2.2 Japan: Earthquake Preparedness through Public Drills and Resilient Infrastructure

Context: Japan experiences frequent seismic activity, necessitating comprehensive preparedness at both infrastructure and community levels.

Intervention: Japan's integrated approach exemplifies framework principles through its combination of resilient infrastructure, regular public drills, and inclusive preparedness education. The system particularly emphasizes mental health preparedness, disability inclusion, and multi-generational approaches.

Implementation Approach:

Annual nationwide earthquake drills engaging all sectors

School-based preparedness education with youth leadership components

Strict building codes with regular audits and enforcement

Accessible early warning systems for persons with disabilities

Mental health preparedness integrated into public education

Outcomes:

Significant reduction in earthquake-related fatalities despite increasing urbanization

96% public participation in annual disaster drills

Enhanced community cohesion through intergenerational preparedness activities

Rapid economic recovery after major events due to infrastructure resilience

Key Lessons:

Long-term commitment to preparedness creates cultural shifts in risk perception

Youth engagement ensures intergenerational knowledge transfer Regulatory frameworks must align with community-based approaches

Mental health preparedness significantly improves post-disaster recovery

12.2.3 Small Island States: Climate-Adaptive Coastal Management with Mangrove Restoration



Context: Small island developing states face existential threats from sea-level rise, intensifying cyclones, and climate-induced resource conflicts.

Intervention: A coalition of Pacific and Caribbean islands implemented framework approaches focusing on ecosystem-based adaptation through mangrove restoration, combined with traditional knowledge of coastal management and conflict-sensitive approaches to resource governance.

Implementation Approach:

Community-led mangrove restoration using Indigenous practices
Integration of traditional navigation knowledge with climate science
Collaborative resource management to prevent climate-induced
conflicts

Youth-led monitoring of coastal changes and ecosystem health Cross-island knowledge exchange and capacity building

Outcomes:

Coastal erosion reduced by 60% in restoration areas

Storm surge impacts decreased by 40% during extreme weather events

Resource conflicts reduced through collaborative governance mechanisms

Economic co-benefits through sustainable fishing and ecotourism

Key Lessons:

Ecosystem-based approaches yield multiple co-benefits beyond disaster reduction

Indigenous knowledge provides crucial insights for climate adaptation

Conflict sensitivity is essential when addressing resource scarcity Regional collaboration enhances resilience for small island states

12.2.4 Colombia: Conflict-Sensitive DRR in Post-Conflict Zones

Context: Colombia's post-conflict regions face compound risks from disasters and ongoing social tensions, with historical disaster approaches often exacerbating conflict dynamics.

Intervention: Colombia developed conflict-sensitive DRR approaches that integrate peacebuilding with disaster resilience, addressing historical inequities while building capacity for disaster management in previously neglected regions.

Implementation Approach:

Joint risk assessment involving former conflict actors

Inclusive early warning systems that address both conflict and disaster risks

Recovery planning that incorporates reconciliation processes

Transparent resource allocation to build trust in governance

Mental health support addressing both disaster and conflict trauma

Outcomes:

Successful disaster response in areas previously inaccessible due to conflict

Reduced tensions through collaborative disaster governance

Economic recovery accelerated through conflict-sensitive reconstruction

Increased trust in local institutions through transparent disaster management

Key Lessons:

Conflict and disaster risk reduction must be addressed together in fragile contexts

Disaster governance can create neutral spaces for collaboration between former adversaries

Transparency in resource allocation is crucial for trust-building

Mental health approaches must address compound trauma from
conflict and disasters

12.2.5 Kenya: Youth-Led DRR Initiatives through School Programs and Digital Activism

Context: Kenya faces multiple disaster threats while having a predominantly young population, often excluded from traditional disaster governance.

Intervention: Kenya pioneered youth-centered DRR approaches that leverage digital technologies and school-based programs to build intergenerational resilience, particularly in drought-prone and urban informal settlement areas.

Implementation Approach:

School-based DRR clubs with curriculum integration

Youth-led digital mapping of community risks and resources

Intergenerational knowledge exchange between elders and youth

Social media campaigns for disaster awareness and advocacy

Youth representation in formal disaster governance structures

Outcomes:

Comprehensive risk maps developed for previously undocumented informal settlements

Early warning dissemination improved through youth-led digital networks

Increased youth employment through green disaster risk reduction initiatives

Policy changes resulting from youth-led advocacy campaigns

Key Lessons:

systems

Youth bring innovative approaches and technological fluency to DRR School-based programs create sustainable knowledge transfer Digital approaches can bridge traditional and modern knowledge

Youth leadership improves community engagement and social cohesion

12.3 Resources and Tools for Collaboration %

These resources support stakeholders in implementing the framework collaboratively:

12.3.1 Implementation Toolkit

Participatory Risk Assessment Guide: Step-by-step methodology for inclusive hazard, vulnerability, and capacity assessments.

Stakeholder Mapping Tool: Template for identifying and analyzing key stakeholders across sectors and governance levels.

Implementation Planning Canvas: Structured format for developing context-specific implementation strategies.

Monitoring and Evaluation Framework: Adaptable indicators, data collection tools, and analysis methods.

Resource Mobilization Guide: Approaches for securing and managing implementation resources.

12.3.2 Collaboration Platforms

DRR&R Knowledge Exchange: Online platform for sharing implementation experiences, adaptations, and innovations across contexts.

Community of Practice Forums: Thematic discussion spaces organized around framework components and cross-cutting issues.

AI-Supported Ideation Platform: Digital tool facilitating collaborative problem-solving and innovation for complex

implementation challenges.

Resource Library: Curated collection of case studies, research papers, and practical tools supporting framework implementation.

Peer Learning Network: Structured program connecting implementers across regions for direct knowledge exchange and mentorship.

12.3.3 Training and Capacity Building Materials

Framework Orientation Module: Introductory training on framework principles, components, and implementation approaches.

Specialized Technical Modules: In-depth training on specific components and approaches (e.g., ecosystem-based adaptation, inclusive early warning systems).

Facilitation Guide: Methods and exercises for engaging diverse stakeholders in framework adaptation and implementation.

Self-Assessment Tool: Protocol for implementers to evaluate their capacities and identify development needs.

Training-of-Trainers Package: Resources for building local capacity to disseminate framework knowledge.

12.4 Implementation Templates 📝



These templates provide practical formats for key implementation processes:

12.4.1 Framework Adaptation Worksheet

A structured format for adapting the framework to specific contexts:

Context Assessment

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Vulnerability patterns:

Existing capacities:

Governance structure:

Cultural considerations:

Component Prioritization

Highest priority components:

Rationale for prioritization:

Sequencing approach:

Adaptation Decisions

Framework elements requiring significant adaptation:

Proposed adaptations:

Rationale for adaptations:

Alignment with core principles:

Implementation Planning

Key stakeholders and roles:

Resource requirements:

Timeline and milestones:

Monitoring approach:

12.4.2 Stakeholder Engagement Plan

Template for planning inclusive and effective stakeholder participation:

Stakeholder Mapping

Primary stakeholders:

Influential stakeholders:

Marginalized stakeholders:

Stakeholder relationships and networks:

Engagement Strategy

Engagement objectives:

Participation mechanisms:

Inclusion approaches for marginalized groups:

Decision-making processes:

Conflict resolution mechanisms:

Resource Requirements

Time commitments:
Financial resources:
Human resources:
Capacity building needs:
Monitoring and Adaptation
Engagement quality indicators:
Feedback mechanisms:
Adaptation process:
12.4.3 Monitoring and Evaluation Framework
Structure for tracking implementation progress and outcomes:
Indicator Selection
Process indicators:
Outcome indicators:
Impact indicators:
Contextual indicators:
Data Collection Methods
Quantitative methods:
Qualitative methods:
Participatory approaches:
Frequency and timing:
Analysis and Learning
Analysis methods:
Learning questions:
Reflection process:
Adaptation mechanism:

Reporting and Communication

Reporting formats:

Communication channels:

Stakeholder feedback:

Knowledge sharing approach:

These annexes provide practical resources to support implementation of the DRR&R Framework across diverse contexts. Stakeholders are encouraged to adapt these tools to their specific needs while maintaining alignment with the framework's core principles. All resources are available in adaptable formats through globalgovernanceframework.org, where stakeholders can also contribute additional tools, case studies, and implementation insights to strengthen the global community of practice around disaster resilience.

Global Governance Framework

Developing interoperable systems and operating models for global governance that respect local autonomy.

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