Asia Pacific Health Security Action Framework

Risk Trends to Readiness: Emergency Ready Workforce as part of the Global Health Emergency Corps

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Executive Summary

Countries across the Asia-Pacific region are facing an increasingly complex emergency risk landscape. Climate-related hazards, geophysical events, disease outbreaks, environmental degradation, and rare high-impact threats are overlapping more frequently, creating cascading effects on health systems, communities, economies, and essential services. An analysis of 21 national risk profiles using WHO's Strategic Toolkit for Assessing Risk (STAR), developed between 2022 and 2026 with input from over 800 multisectoral experts including national disaster agencies, social welfare, security, private sector, finance, tourism and transport, highlights how countries are navigating an evolving emergency environment shaped by climate change, more frequent crises, and the growing need to manage multiple emergencies simultaneously.

Regional Risk Trends

- **Four hazards were characterized as very high or high risks by more than half of the 21 participating countries**: flooding, cyclones/typhoons/storms, dengue, and respiratory pathogens with pandemic potential.
- Antimicrobial resistance, landslides, earthquakes, and gastroenteritis are **shared concerns** across both regions.
- **Half of the assessed hazards (51%) are seasonal and frequently interconnected**: cyclones and floods triggering downstream disease outbreaks, disruption to essential utilities like water and power, while droughts and heatwaves compound scabies transmission and heighten risk of fires.
- **1 out of 5 hazards assessed (18%) were characterized as low-likelihood but high impact emergency risks**—including arboviruses, CBRN events, filoviruses (Viral Haemorrhagic Fevers such as Ebola Virus), civil unrest and botulism.
- **In the Pacific Island Countries, environmental degradation** — including sea-level rise, coastal erosion, and saltwater intrusion — is the **most widely shared risk,** with cyberattack emerging as a growing cross-cutting threat.

Emergency workforce gaps and action trends

Countries have strong workforce foundations in place including clinicians, laboratory staff, rapid response teams (RRTs), emergency medical teams (EMTs), health emergency operations centres (EOCs), first responders, One Health partners, and community networks.

Common persistent gaps

- Fragmented multisectoral coordination
- Uneven workforce distribution and surge capacity challenges in remote areas
- Outdated or untested contingency plans and SOPs
- Limited access to financing for anticipatory and long-term preparedness actions as release of funds are often tied to an emergency declaration

Cross-cutting priorities

- Embedding essential health services and NCD management into emergency workforce readiness
- Inclusive planning pathways for at-risk populations
- Updating RCCE strategies aligned with seasonal risk calendars
- Linking risk-based priorities to national/subnational planning cycles and IHR monitoring frameworks

Regional Collective Action Opportunities

The shared risk patterns and common findings across country risk profiles inform a regional agenda for collective action.

Five key priorities have emerged:

1. Maintain readiness for rare, high-impact threats through virtual stockpiles, specialist rosters, and joint operations exercises.
2. Standardize emergency preparedness in pre-service and academic training to strengthen regional interoperability.
3. Reinforce local health facility and emergency readiness by bridging the public health–clinical interface.
4. Strengthening regional laboratory networks for specimen referral, external quality assurance, and One Health zoonotic disease confirmation.
5. Elevate political commitment through regional platforms and Global Health Emergency Corps (GHEC) Connected Leaders.

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Introduction and Purpose

The Strategic Toolkit for Assessing Risks (STAR), developed by the WHO Health Emergencies Programme and published in 2021, is a participatory, all-hazards methodology designed to assess public health risks and guide the prioritization of emergency preparedness and disaster risk management. Since its release, STAR has been adopted by more than 120 countries to support both national and subnational risk profiling.

This Asia-Pacific risk trend analysis draws on country risk profiles from 21 countries across WHO's South-East Asia and Western Pacific Regions, developed between 2022 and 2026. It highlights shared priority risks, common readiness gaps, and opportunities for collective action. With countries facing overlapping threats such as climate-related disasters, vector-borne diseases, and rare but high-impact events, the analysis aims to strengthen targeted investment, foster regional collaboration, and build collective resilience.

Participating countries: Bangladesh, Bhutan, Cambodia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Lao People's Democratic Republic, Maldives, Nepal, Papua New Guinea, Philippines, Republic of the Marshall Islands, Solomon Islands, Sri Lanka, Thailand, Timor Leste, Tonga, Tuvalu, Vanuatu, Viet Nam.

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Methodology

3.1 Risk profiling using STAR

STAR guides countries through a structured process that brings together multisectoral experts, including national disaster agencies, social welfare, finance, security authorities, private sector, tourism and transport, and civil society organizations to identify hazards, define likely emergency scenarios, and assess each hazard's likelihood and potential impact. The assessment incorporates vulnerability, coping capacity, and confidence in the available evidence, and hazards are then ranked in a risk matrix according to likelihood and impact. This enables stakeholders to prioritise the most serious risks and identify practical preparedness and response actions for national or subnational planning.

3.2 Data consolidation and analysis

WHO consolidated data from 21 risk profiles, including 20 national and one subnational exercise. The dataset covered 7 country profiles from the South-East Asia Region and 14 from the Western Pacific Region, of which 10 were Pacific Island Countries. In total, more than 800 multisectoral experts contributed to developing these country profiles.

To enable cross-country analysis, the STAR data collection tool was adapted for multi-country entry, analysis, and visualization. Data were merged and anonymized to produce aggregated risk matrices, summaries, and risk calendars. Text-based inputs were converted into quantitative outputs using keyword searches, word counts, topics, and categories. This allowed for the identification of trends in high and very high risks, reported strengths and challenges, and coping capacities across key readiness areas such as medical countermeasures, collaborative surveillance, emergency coordination, community protection, and safe, scalable health care. Country next steps were also examined to highlight recurring priorities and opportunities for regional action, particularly for low-likelihood but high-consequence hazards requiring specialized expertise, tools, or resources.

As the risk profiles were developed for national contexts, the findings may have some limitations in their generalizability to the wider Asia-Pacific region.

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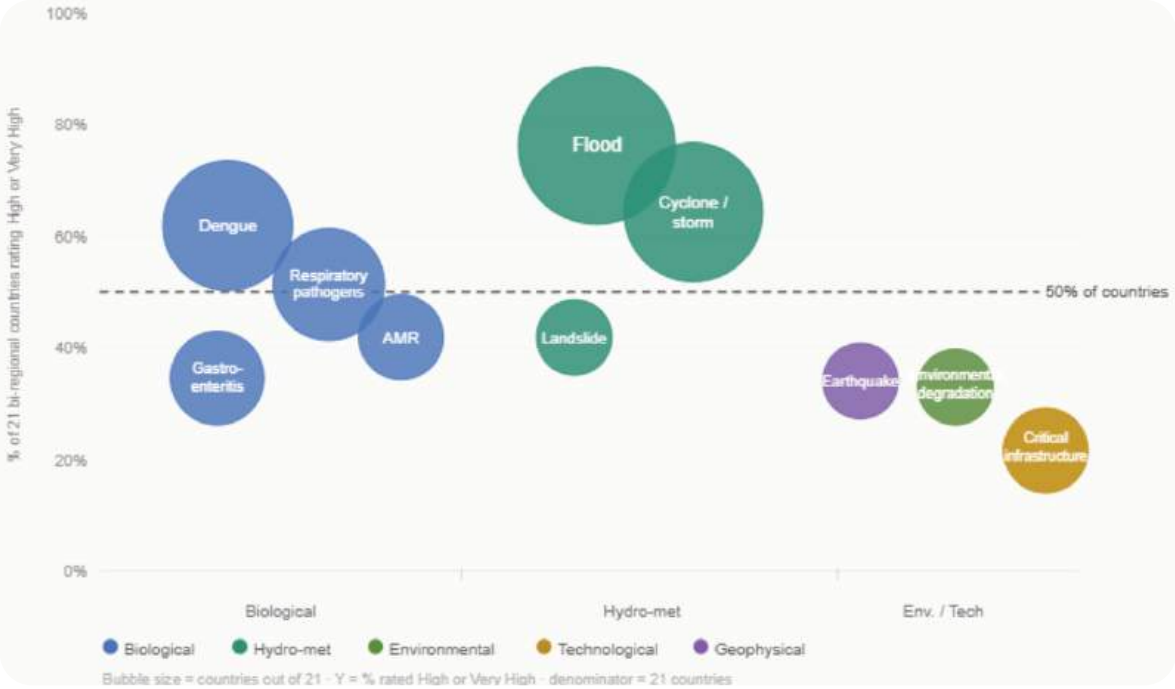
Results

4.1 Regional and Sub-regional risk trends

4.1.2 High likelihood/high impact risks- (Regional)

Across the South-East Asia Region (SEAR) and Western Pacific Region (WPR), weather, geophysical, and climate-related hazards are consistently identified as high-risk threats, significantly affecting population health, health facility operations, and community resilience. Among the 21 country profiles assessed, four risks were most frequently rated as "high" or "very high" which includes 1. flooding, 2. cyclones and storms, 3. dengue, and 4. respiratory pathogens with pandemic potential

Figure 1: Bubble map illustrating the highest emergency risks across 21 countries in Asia Pacific from country risk profiles



Antimicrobial resistance, landslides, earthquake and gastroenteritis are shared concerns across both regions.

4.1.3 High likelihood/high impact risks- (Sub-regional)

In addition to the four major risks, SEAR countries have prioritized landslides, air pollution, and cholera/acute watery diarrhoea, with 57% highlighting these as significant concerns.

Among Pacific Island Countries (PICs), beyond the aforementioned regional risks, environmental degradation stands out as the most widely shared risk, with sea-level rise, coastal erosion, and saltwater intrusion rated as high or very high in seven out of ten PICs. Tsunami was also cited as a major risk among six PICs. Meanwhile, cyberattacks are emerging as a growing cross-cutting threat, with five PICs identifying the risk as high.

4.1.4 Rare, High-Impact Events

Across the 21 country profiles, nearly one in five hazards (18%) were classified in the top-left quadrant of the 5x5 risk matrix with low likelihood but high impact. While these emergencies are unlikely to occur in the near term, their potential to cause severe disruption requires proactive preparedness.

Shared risks identified by multiple countries include:

Category	Risk Identified
Biological	◦ Arboviruses/non-dengue (Chikungunya, Zika, Japanese encephalitis) ◦ Seasonal influenza ◦ Filoviruses (viral hemorrhagic fever) ◦ Mpox ◦ Botulism outbreaks
Security-related	◦ CBRN incidents (Chemical, Biological, Radiological, Nuclear) ◦ Civil unrest/conflict
Geophysical and Environment	◦ Major earthquakes ◦ Oil spills

Additional emerging concerns include air and marine pollution and critical infrastructure failure.

4.1.5 Interconnected risks (disaster and post-disaster outbreaks)

More than half of the 84 unique hazards assessed by countries (51%) are seasonal. These seasonal risks are often interconnected and follow recurring patterns.

- **Cyclones and floods** are frequently followed by outbreaks of diarrhoeal, respiratory, water-related, and vector-borne diseases. They also cause power and water supply disruptions, environmental degradation, and the spread of invasive marine and terrestrial species.
- **Droughts and heatwaves** contribute to worsening scabies transmission and increase the risk of wildfires.

4.2 Trends amongst multi-sectoral emergency workforce priority actions

Countries already have strong workforce foundations (clinicians, labs, public health teams, rapid response and disaster teams, EMTs, divisional health offices, community responders). These form a solid base for a more connected, emergency-ready workforce.

Challenges and priority actions identified:

1. Coordination gaps: The biggest challenge is fragmented multisectoral coordination.

Priority actions:

- Establish and operationalize Public Health Emergency Operations Centres (PHEOCs) and the incident management system with clear roles and triggers.
- Formalize surge support SOPs and inter-agency coordination mechanisms across health and non-health sectors, with standing arrangements before and during emergencies.

2. Workforce strengthening: Capacity is concentrated nationally, leaving subnational and remote areas with major gaps.

Priority actions:

- Recruit and deploy subnational surveillance officers, addressing retention in high-risk areas.
- Create pre-agreements/MOUs for surge mechanisms (e.g., inter-provincial, non-health sector).
- Provide targeted, risk-informed training (detection, case management, IPC, RCCE, incident management, disaster risk management).
- Deliver just-in-time training before peak risk periods for clinical and non-clinical workforce.
- Scale up EMTs and clinical surge capacity with pre-deployment protocols and decentralized supplies.
- Support psychosocial well-being and retention of surge staff (incentives, certified training, structured family support).

3. Contingency planning and testing: Countries prioritize updating and testing contingency plans and SOPs. And simulation exercises are key to validating readiness.

Priority actions:

- Link EMTs and RRTs through joint scenario planning and simulations.
- Update RCCE strategies/messages based on risks and seasonal calendars.
- Extend communication to vulnerable/remote communities by integrating faith-based groups, leaders, and civil society into RCCE mechanisms and local health response planning
- Map supply chain capacities across health and other sectors to identify strengths and bottlenecks.

4. Financing challenges: Funding for preparedness is limited and unpredictable, especially at subnational levels.

Priority actions:

- Advocate for dedicated preparedness budget lines.
- Establish pre-agreed financing with clear activation triggers.
- Support access to funds to enable anticipatory and timely actions such as pre-positioning for likely emergency scenarios.

Cross-cutting themes and key considerations

- Emergency preparedness must ensure continuity of essential health services, including management of noncommunicable diseases (NCDs). WHO provides global and regional tools to support country-level planning.
- Inclusive planning with targeted actions for the most at-risk populations saves lives, builds community trust, and reduces gaps in care.
- Risk-based workforce planning should be linked to broader health security cycles. This means embedding workforce priorities into National Action Plans for Health Security (NAPHS), sub-national operational plans, and International Health Regulations (IHR) processes (States Parties Annual Reporting and Joint External Evaluations). Doing so ensures that workforce strengthening is driven by actual risk profiles.

Pacific Island Countries – Emergency Workforce Priorities

Pacific Island Countries (PICs) face unique workforce challenges due to dispersed islands, small populations, and limited health staff. Their strategies must be tailored to Pacific realities.

Build a surge workforce beyond health sector

- Train non-health government staff (customs, police, agriculture, education, etc.) to take on incident management tasks (e.g. finance, administration, contracts, logistics, communications) during emergencies.
- Create a “whole-of-government surge pool” to backfill roles.
- Partner with faith-based groups and community networks to strengthen local response and surveillance.
- Extend risk profiling and workforce mapping for outer islands and atolls where the most acute workforce gaps are found to update plans and SOPs
- Pre-emergency agreements or MOUs across sectors to define logistics roles, warehousing and transportation arrangements during emergencies

4.3 Regional Collective Themes identified during STAR

The risk trends and priority actions identified across country profiles extend beyond national relevance -they highlight a regional pattern of shared hazards, common gaps, and cross-border risks. In the Asia Pacific Region, these collective priorities and challenges create a unique opportunity to pool resources and expertise, strengthening emergency workforce readiness and reducing risks more effectively.

Regional Emergency Preparedness –Strategic Priorities

(1) Keep regional systems warm to respond to rare, high impact threats

Nearly one in five risks identified across the country profiles were characterised as rare but high-impact — too infrequent for any single country to maintain full standalone readiness, yet too critical to leave unprepared. Shared regional investments pool the Asia Pacific's accumulated emergency know-how and hard-won experience, keeping these systems warm between events so that when a rare but catastrophic emergency strikes, the region can act quickly, deploy surge support, and save lives.

- Streamline legal, financial, and logistical barriers to quickly accept surge staff, equipment and supplies without delay
- Build and manage a shared virtual regional stockpile of therapeutics, reagents and equipment for rare emergencies (e.g. botulism antitoxin and CBRN events)
- Identify regional specialists (such as CBRN experts)
- Practice joint operations (e.g. delivering lifesaving antitoxin to point of care within the treatment window)

(2) Embed and standardize emergency preparedness in training

Across the Asia Pacific region, emergency preparedness competencies are built inconsistently — acquired through ad-hoc in-service training, crisis response, or not at all — rather than embedded at the point of professional formation where they would reach every future health worker before they face their first emergency. Through a regional standard approach, workforce would share a common, quality-assured competencies which can lead to interoperable, trusted regional surge. This would be aligned with the vision set for a qualified and interconnected Global Health Emergency Corps.

- Include emergency preparedness, One Health, and disaster management competencies in pre-service training, workforce training and academic curricula.
- Create international standards to unify Rapid Response Teams (RRTs) and Field Epidemiology Training Programme, similar to the EMT Blue Book, to ensure inter-operability and quality in regional surge support for affected countries

(3) Reinforce health facility and local emergency readiness

Emergencies begin and end at the community level. Local health facilities playing a critical first link for both first detecting emergencies and frontline response. Local readiness gaps—from detection, reporting, contingency planning, provision of patient care and workforce readiness—were consistent across the Asia Pacific region. This shared challenge also points to potential shared solutions, including development of regional tools and guidance, simulation packages and quality-assured resources to strengthen local emergency readiness.

- Reinforce clinical suspicion skills and reporting pathways for early detection, investigation and outbreak response
- Develop and share regional tools to assess health facility emergency readiness, support community-inclusive contingency plans, and strengthen hospital incident management capacity
- Define health facility minimum dataset for emergencies (capture, rhythm, analysis, reporting) and train staff on usage
- Ensure coordination and complementarity of RRTs and EMTs in emergency scenarios

(4) Strengthen regional laboratory capacity and surveillance

Confirmed laboratory diagnosis for priority and high-impact pathogens remains a persistent gap across the country profiles — a bottleneck that delays response, prolongs outbreaks, and undermines the evidence base for public health action. Collective strengthening of regional capacity and surveillance can build an accessible and quality assured regional diagnostic network—shortening confirmation timelines and ensuring every country has the laboratory backing that the emergency requires.

- Map and improve country and regional specimen referral systems for rare, high-impact pathogens (e.g. LabCONNECT)
- Implement and expand the External Quality Assurance Programmes (EQAP) for priority risks
- Build and maintain integrated laboratory networks to close gaps in disease confirmation, including zoonotic diseases

(5) Elevate emergency workforce readiness through political commitment

Across the country profiles, structural and political challenges — not technical gaps — are the most consistent obstacle to translating emergency workforce readiness priorities into funded national commitments. To address these challenges and barriers, countries may leverage existing regional platforms and the GHEC Connected Leaders to find regional solutions.

- Use regional platforms to advance emergency workforce strengthening and multisectoral health engagement as shared security priorities
- Leverage GHEC Connected Leaders to champion risk-informed workforce readiness and integrate health into disaster management coordination

Pacific Island Countries Collective Themes

- Advance joint advocacy for climate financing to strengthen health system readiness and resilience alongside infrastructure.
- Develop shared specialist rosters with rapid deployment protocols, links to partners, further leveraging existing EMTs for specialist access.

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