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WHO EPI-WIN DIGEST

STAR experience in managing health emergencies and disasters, including climate crisis in countries

21 October 2024

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What is the Strategic Toolkit for Assessing Risks (STAR)?

A participatory, inclusive (gender and human right), multisectoral, all-hazards approach for countries at national, subnational, local levels

*… rapidly **conduct a strategic and evidence-based assessment** of public health risks*

- Characterizes and describes risk, including identifying vulnerabilities + coping capacities
- Identify potential health emergencies and disasters harnessing multisectoral expertise
- Provides the evidence base for resource allocation, planning, policy and action to enhance prevention, preparedness, response and recovery from emergencies
- Aligned with Health Emergency and Disaster Risk Management Framework (Health EDRM), International Health Regulations (IHR 2005), Sendai Framework for Disaster Risk Reduction

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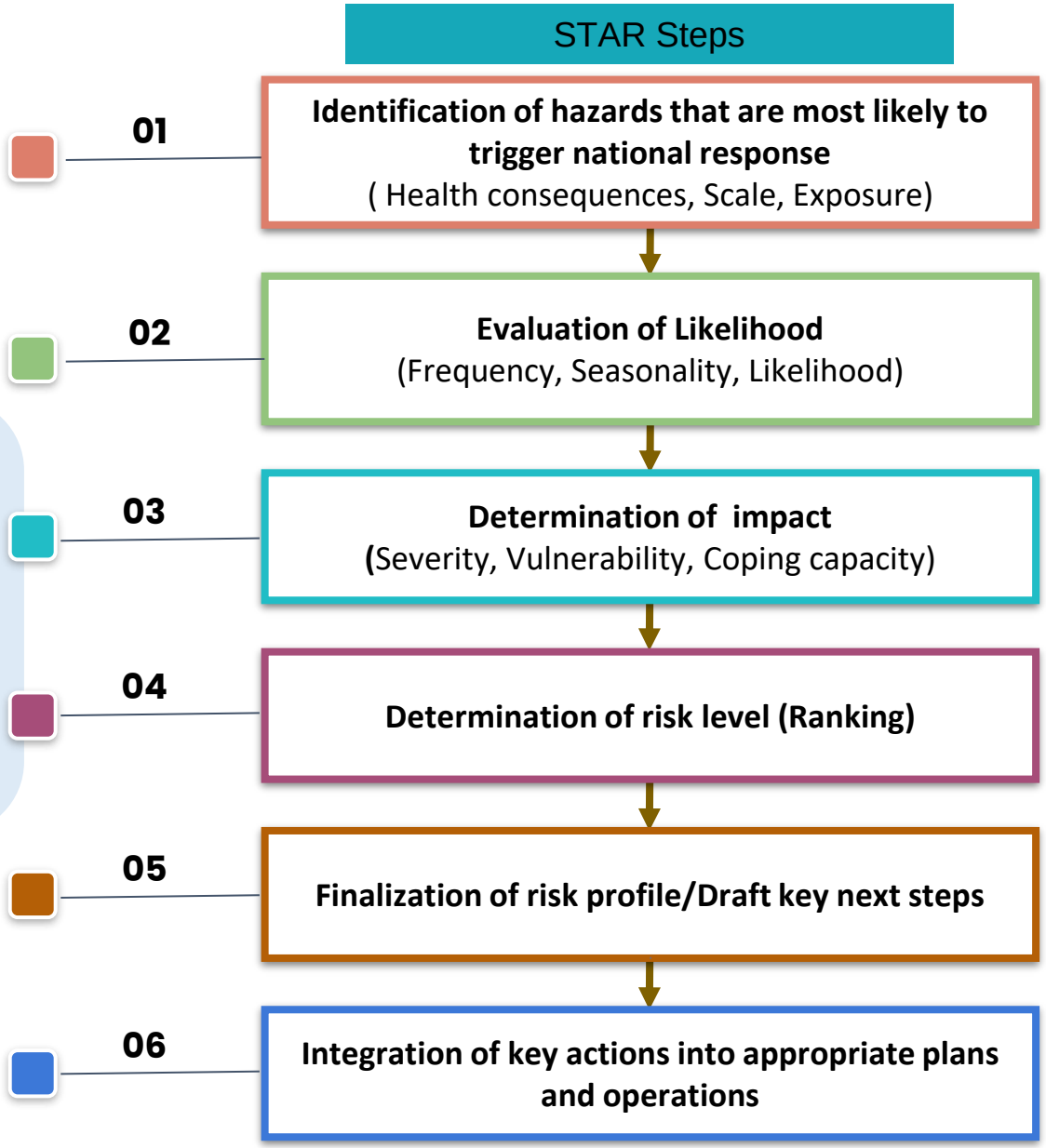
How?

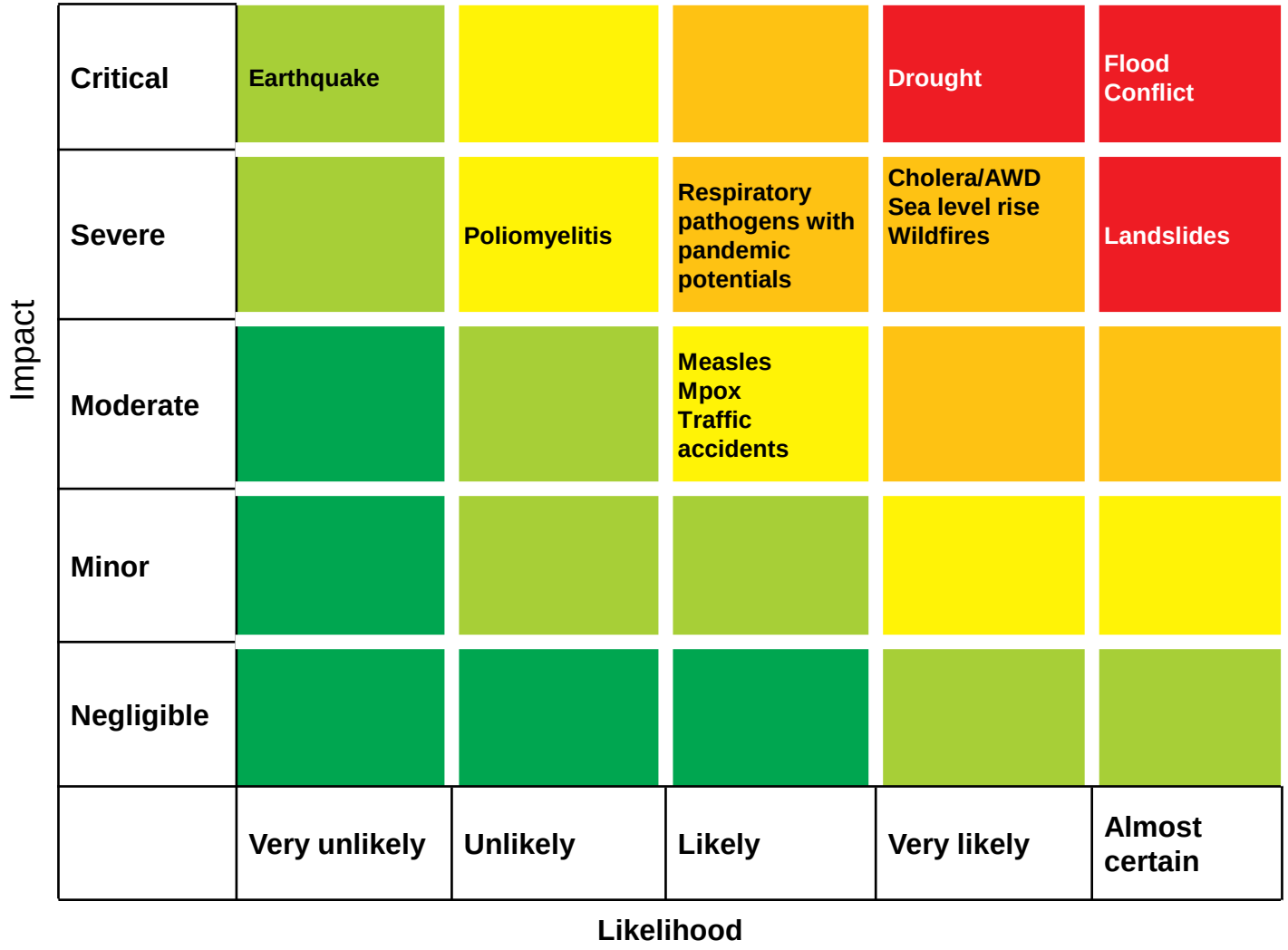
- **Country driven**, consists of E**xcel-based** toolkit, **step-wise** approach
- **Brings together 30-50 multi-sectorial participants** (from health, disaster management, agriculture, climate, environment, security agencies, prime minister office etc) in a **workshop setting**
- **Consolidates available risk and capacity data** (e.g surveillance, plans/policies, report of previous emergencies, vertical programme reports/assessments, vulnerability assessments, climate/ENSO forecasts, hotspot mapping, workforce, population/migration etc)



Country Risk Profile

- Description of the health consequences, geographical areas affected/prone, exposure, severity, impact, vulnerability, coping capacity, risk ranking etc.
- Risk Matrix: 5X5 plot of likelihood/impact
- Seasonal calendar of risk
- Drafted key actions based on risk and consensus among multi-sectorial participants
- Flexible, allows integration of emerging risk information, such as ENSO forecast and health impacts

Risk Matrix



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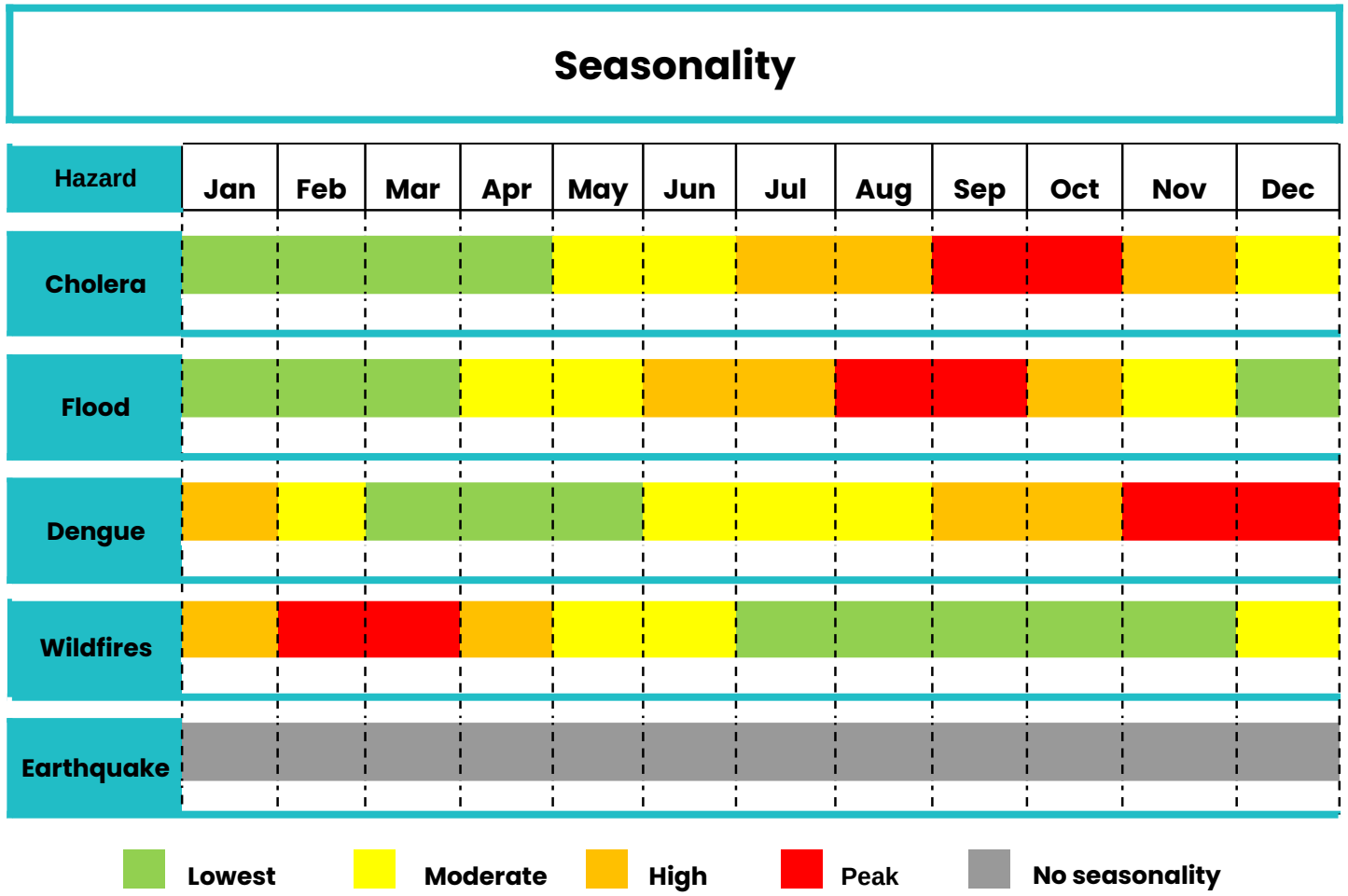
Why?

Enables visualization of months of likely risks occurence for seasonal risks

- Provides the basis for early warning/early actions
- Identifies potential concurrent emergencies before they occur (e.g flood, cholera)
- Allow countries to adopt an integrated risk-informed planning approach for emergency preparedness,response and recovery



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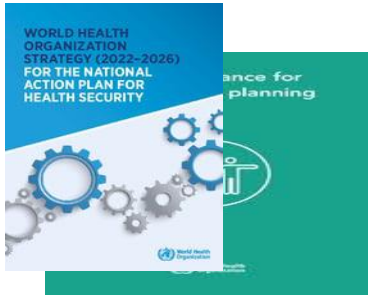
Where?

Context-specific

- **Sweden**: *climate change risk assessments, aligned with the national strategy for climate adaptation i2019, 2023)*
- **Bangladesh:** ***I****nfectious hazards risk assessment during the COVID-19 pandemic (2021)*
- **Uganda:** *City-level (Kampala) STAR in context of urban preparedness (2024)*

Early actions

- **Nigeria**: *applied readiness checklist for priority risks (Lassa fever, Flood, Cholera) i2022)*
- **Armenia:** *informed national Public Health Emergency Operation Centre (PHEOC) action*
- **United Republic of Tanzania:** *triggered operational readiness activities, e.g RRT training, prepositioning supplies, enhanced coordination structures, in hotspot areas, (crucial for Marburg outbreak response, 2023)*



Capacity development

- **Yemen**: *inform the development of national all-hazards emergency preparedness and response plan*
- **Georgia:** *subnational STAR exercises prioritized in NAPHS to strengthen emergency preparedness and response planning at regional level* **(2024)**
- **Kenya:** *development of national health emergency response operational plan. Contingency plan for specific risk (e.g Flood) 2023, 2024*

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When?

Recommend to review/update every 2-3 years or following

- Significant changes in-country for certain parameters of the STAR steps (e.g. seasonality, vulnerability, coping capacity), or other external attributes with the potential to impact health risk (e.g. ENSO, climate change)
- Any major emergency response/during a pandemic
- Sudden forced displacement of a population
- At the discretion of the country (may inform annual planning)

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Country Experiences

Sri Lanka

Several assessments were conducted in 2023, prior to development of the second NAPHS 2024-2028 to ensure continued evidence-based planning for health security in Sri Lanka.

Sri Lanka conducted country risk profiling through STAR workshop prior to NAPHS development to ensure risk-based approach in health security planning.

Purpose: To rapidly identify and assess public health risks for planning and prioritization of health emergency preparedness and disaster risk management activities

Review of relevant information/data available and consensus building through discussions

- Categories of hazards in the Disaster Management Act No.13 of 2005.
- Previous formal or informal risk assessments.
- Reference information; from surveillance, and capacity assessment reports including Desinventar (http://www.desinventar.lk/)
- Hazards from neighbouring countries or geographic areas with potential cross-border risk.
- Previous responses to emergencies drawing on the collective experience of multi-sectoral experts
- WHO Classification of Hazards

Sri Lanka: NAPHS development 2024-2028; Systematic Approach

National Bridging WS

(IHR-PVS-NBW)

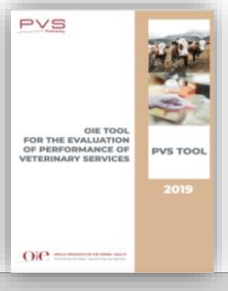
(Feb 2023)

Provided opportunity to human and animal health services to review their current collaboration gaps and develop a joint road map in key technical areas

STAR workshop

(MAY 2023)

- To ensure a risk-based approach
- Results of the STAR workshop directly linked to prioritize capacity building actions for 1–2-year operational National Action Plan for Health Security (NAPHS)



PVS

(July 2023)

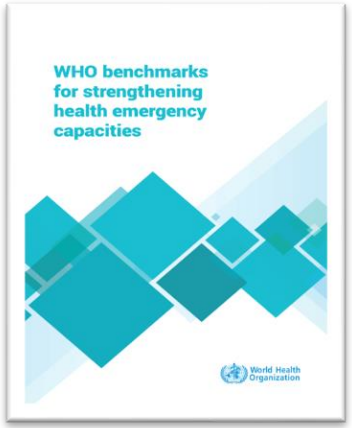
The assessment identified strengths and weaknesses in veterinary services and provided recommendations across four main components of PVS tool

JEE

(Sept. 2023)

JEE scores with priority recommendations facilitated the NAPHS development as the main base

Assessment's recommendations (# 226)

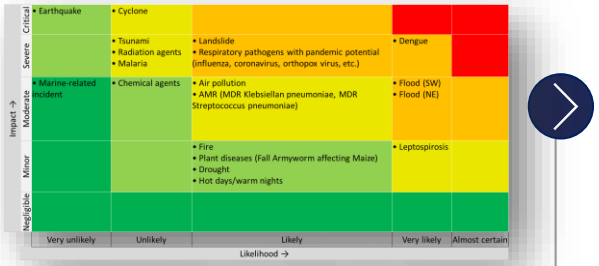


NAPHS 2024-2028 Development (FEB 2024)

Capacity building of technical focal points on the costing of plans was conducted in 2023 prior to NAPHS development

Sri Lanka: Linking risk profile to NAPHS: applying risk profile to capacity planning

Risk calendar



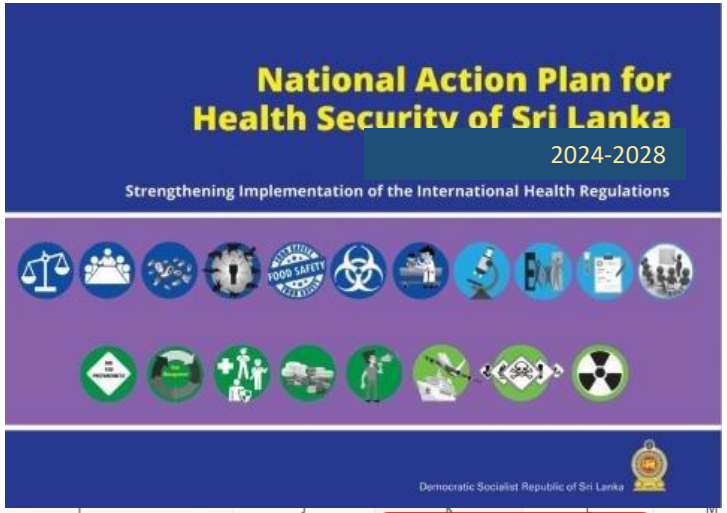
Risk matrix

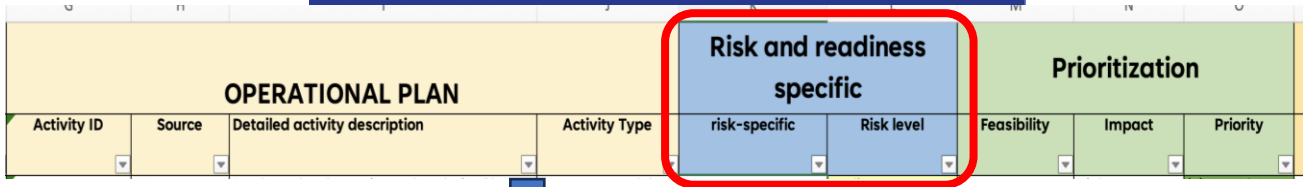
Key actions & recommendations

Hazard	Priority Action	Responsible	Stakeholders	Geographic Areas(s)	Justification
Landslide Flood	• Review and update landslide hazard zonation maps and flood inundation maps.	National Building Research Organization (Landslide), Dept. of Irrigation (Flood)	Disaster Management Center, Dept. of Irrigation, National Building Research Organization, Dept. of Meteorology, Ministry of Health, Road Development Authority, Urban Development Authority, Central Environmental Authority, Mahaweli Authority, Local Government Authorities, District Secretariats, 1990 Suwa Seriya, Emergency Response NGOs and INGOs	Subnational (Flood: river basin level)	To detect changes in different localities
	• Review existing landslide early warning threshold limits and upgrading monitoring system	National Building Research Organization, Dept. of Irrigation		Subnational	Respond to changes in rainfall patterns
	• Development of policy and strategies to integrate management of floods and rainfall induced landslides	National Building Research Organization, Dept. of Irrigation, DMC		Ratnapura, Kalutara, Galle and Matara	To enhance effectiveness of management plan
	• Develop risk communication and community engagement strategic planning.	Ministry of Health		National	For collaborative actions to mitigate emergency and risk situations
	• Capacity building on risk management	DMC and Local Authorities		National and vulnerable districts	For strengthening preparedness and response to landslides and floods

- Health consequences
- Coping capacity

- Geographic areas
- Likelihood
- Vulnerability





e-NAPHS excel sheet

Reviewed each proposed operational action in terms of relevance to risk profile/risk level during NAPHS workshop through e_NAPHS platform and prioritized accordingly

Risk profile considered for risk-informed IHR-based capacity-building, including:

- Operational NAPHS 2024-2025
- Strategic NAPHS 2024-2028

Moldova

- Moldova’s first risk assessment (STAR) in 2018 identified key risks, but the landscape has since changed. In 2024, the government prioritized updating the risk profile due to new threats like pandemics and regional instability.

- STAR implementation:
  - Three training sessions with the group of international experts and the national group of experts (MoH, HAPH, GIES, NAFS);
  - June 4-6, 2024, the Risk Assessment Workshop was organized, attended by over 50 interministerial participants;
  - August 28 - September 12, 2024, the regional workshops on risk assessment took place;

Moldova: Lessons Learned & Best practices & Recommendations:

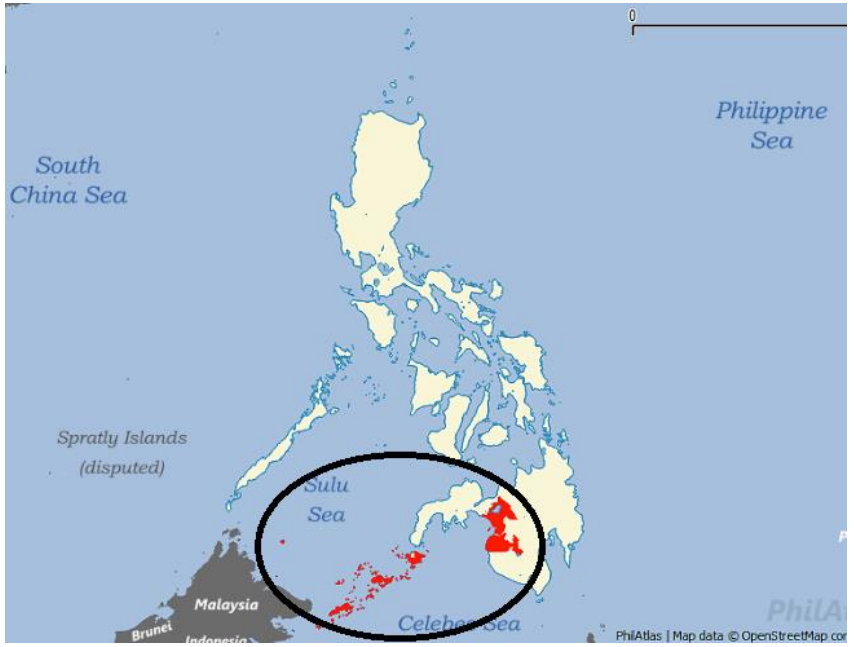
- Elaboration and updating of plans for preparation and response to existing public health hazards and emergencies at the national, regional and territorial level, with the involvement of all actors responsible for responding to public health hazards and emergencies;
- Developing contingency plans for risks that have been assessed as requiring additional risk mitigation actions;
- Trainings;
- Periodically carrying out the assessment of public health hazards and risks with the updating of the risk list for public health hazards;

Philippines

STAR at the sub-national level was done in response to request of DOH subnational offices to capacitate technical staff in conducting health emergency risk assessment to enhance preparedness and response planning (including pandemic plan)

STAR implementation: Sub-national STAR in Metro Manila (highly urbanized city) and the Bangsamoro Autonomous Region of Muslim Mindanao (BARMM) located in the southernmost part of the country with 13 Moro tribes and 5 non-Moro Indigenous People tribes

Methodology features: Multi-sectoral participation; STAR in BARMM was done in two rounds



Philippines

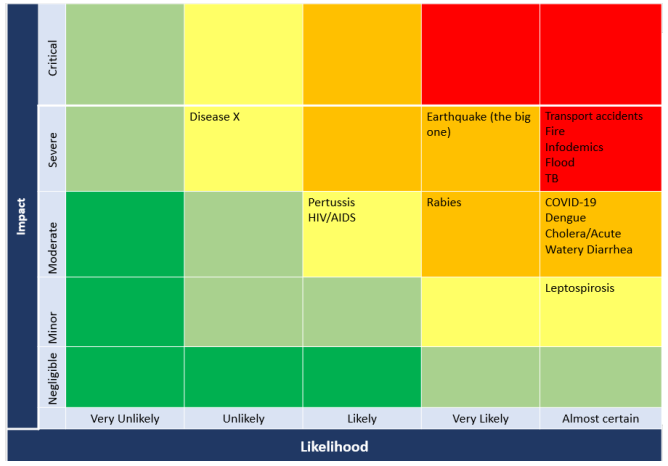
STAR METRO MANILA

14 hazards were identified with major consensus

-Impact of flooding in different cities varies from minor to severe, depending on geographic topology and volume of rain in the city and typhoon category

- Impact of TB due to lack of medicines and human resources for contact tracing

- Likelihood of Disease X as 70-80% of travellers passes through its international airport



STAR BARMM

Round 1:

- Key actions were based on the peak season of dengue and foodborne diseases

- Entomological data are insufficient

- There are identified areas by each group that are prone to flooding and post-disaster foodborne outbreak

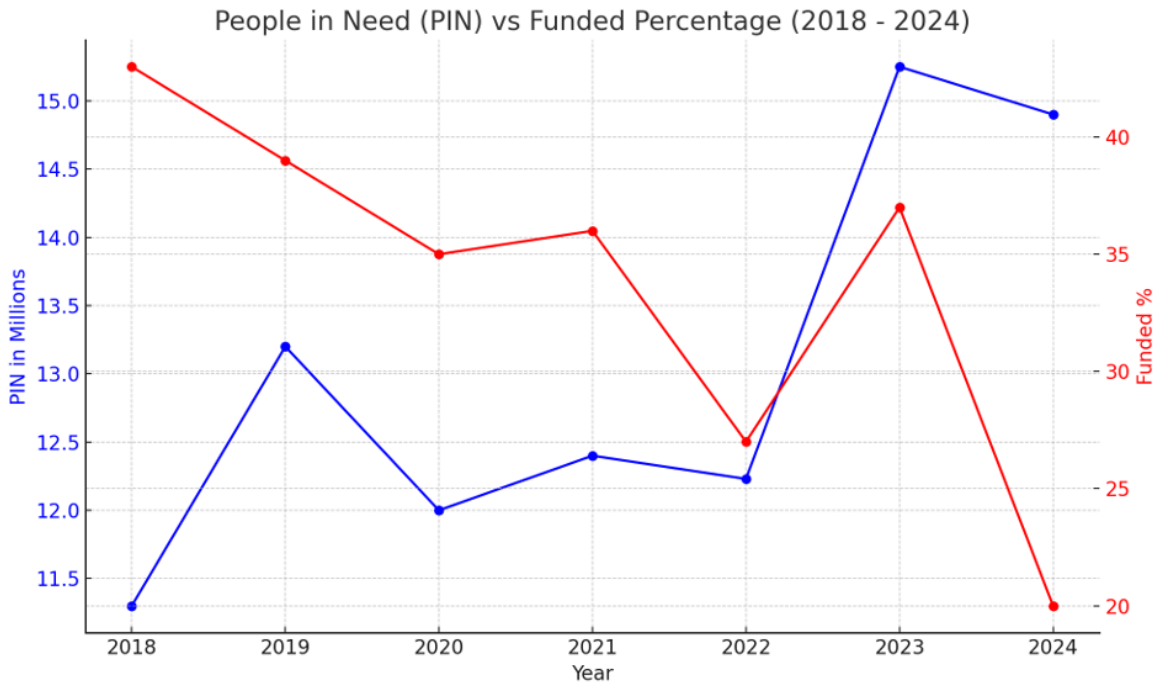
Round 2:

- 10 sub-areas in BARMM reconvened to assess natural + societal hazards

- Major risks identified during in at least one sub-area include: flooding, fire, storm surge, landslide, drought, and conflict

Syria

- Syria is faced with multiple emergencies and economic challenges:
- Increasing people in vulnerable situations because of protracted crises, conflict and social unrest



Major Need Drivers

- ❑ Political, security/conflict (ongoing attacks, impact of regional conflict), Hostilities, sanctions, and red lines
- ❑ Fragmented Health Systems Governance leadership and coordination
- ❑ Socio-economic challenges – water crises, other climate shocks, fuel and power shortages, inflation
- ❑ Recurrent Disease Outbreaks
- ❑ Food insecurity , Malnutrition
- ❑ Protection issues including attacks on healthcare, GBV, SEA
- ❑ Natural Disasters – Drought, 2023 earthquakes – Huge loss and damage to the health sector
- ❑ Massive displacement – IDPs, returnees, etc

WoS health Sector Risk Assessment – STAR- Method

Involvement

- Health cluster coordinators in the three response areas across Syria
- Health information Management officers at three hubs
- WHO technical team in WCO and GZT office
- EMRO WHE with IHP team facilitate the workshop
- NES forum team
- WoS sectors – Nutrition and WASH
- Few of WoS health sector partners at WoS (GBV/ UNFPA) were consulted.

STAR Exercise/ Discussion

Because it was difficult to have one Physical STAR workshop, therefore

- All necessary and relevant documents both within and outside the health sector were collected and compiled into an online shared folder
- 6 online sessions between September and December 2023.
- Facilitation from the EMRO team

Review Process and validation

- Follow up calls with EMRO team and response areas
- A first draft of the health risk profile report was prepared and shared with all contributors/ CLA for feedback.
- A follow-up in-person meeting was held on February 2024, in order to review the results, regroup some identified hazards, and validation.
- Also to agree key priority areas to focus on and to prepare specific contingency plans.“
- Clearance from the WCO and GZT office

Usefulness of STAR in WoS context

At WoS:

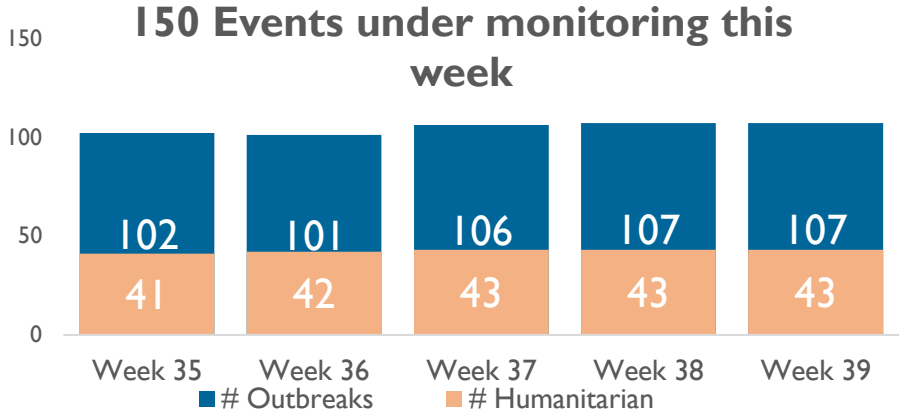
- To inform the development of the WoS health sector Multi-hazards Preparedness Plan (V2 is being drafted)
- With WoS sectors of Nutrition, WASH, and Food security engaged

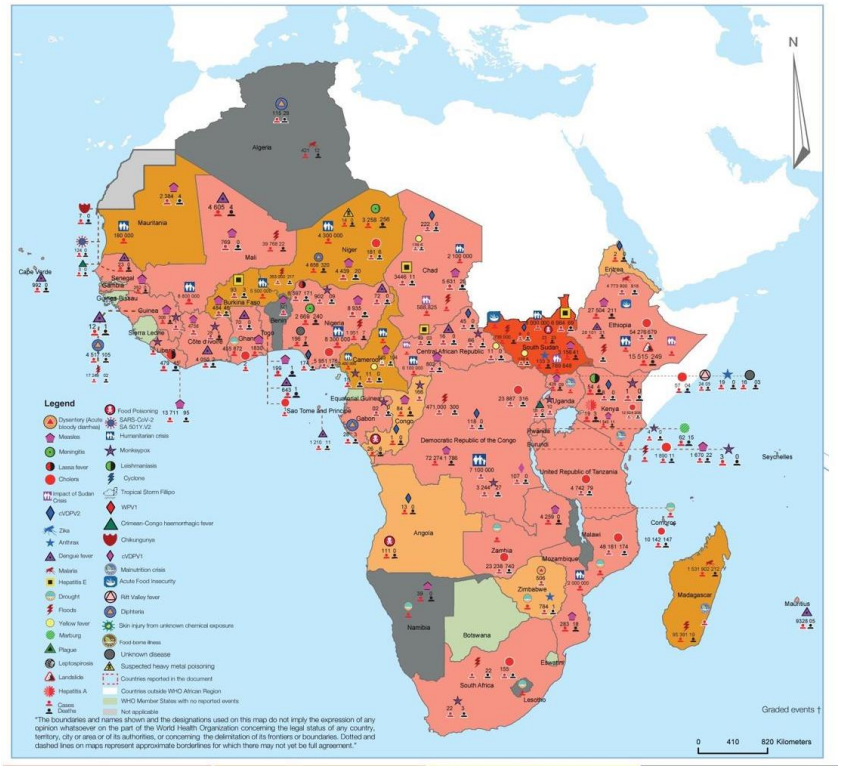
At response Area:

- The STAR results were used for the diseases prioritization exercise at response area
- Plan to inform the development of specific hazards Readiness and response plan

WHO Africa Region

- WHO AFRO monitors multiple public health emergency events.
- Transformations of STAR for timely alert.
  - Risk assessments
  - STAR dashboard and Regional Risk Calendar
  - AI-driven predictive modelling





Transformations in Risk Assessments

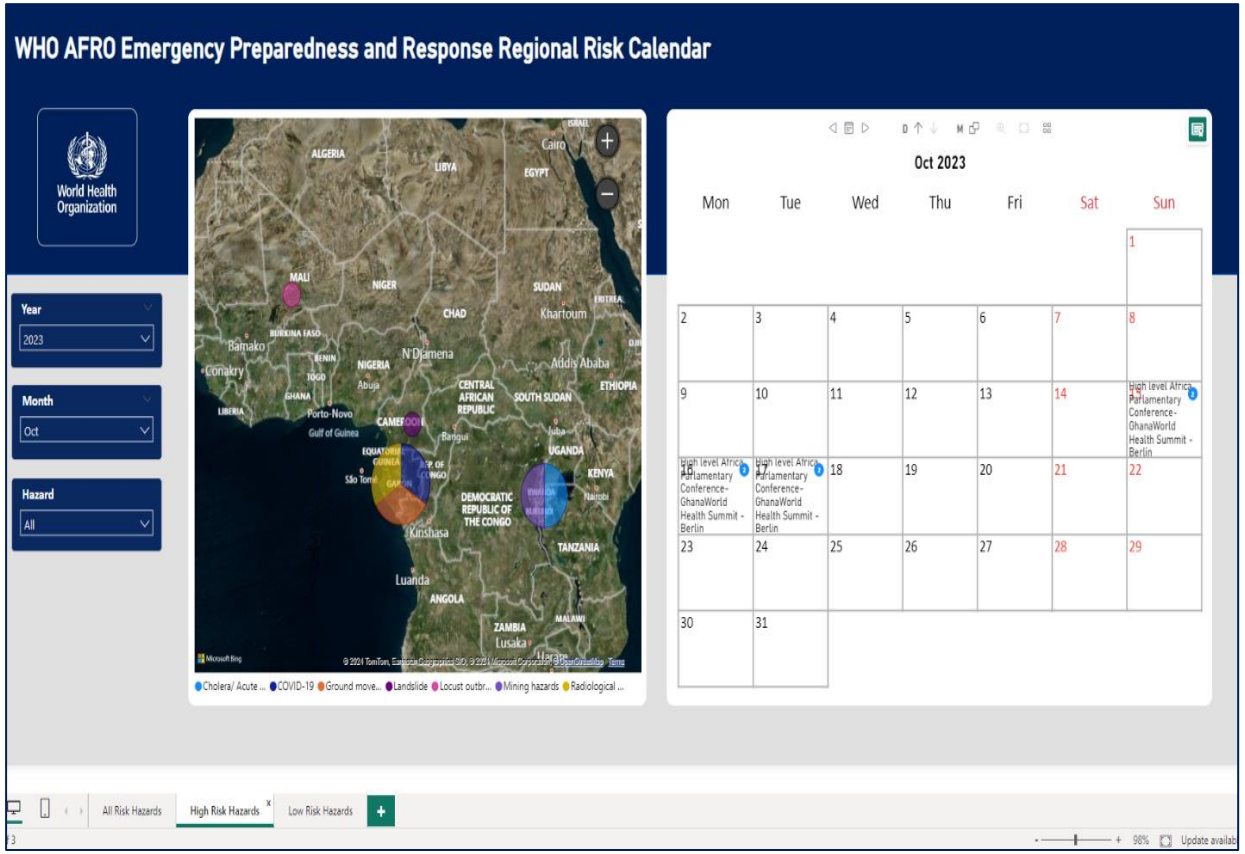
From analogs to AI-driven innovations

1. Transforming Strategic Toolkit for Assessing Risks (STAR) into Interactive STAR dashboard and Regional Risk Calendar

2. AI-driven automated hazard alerts

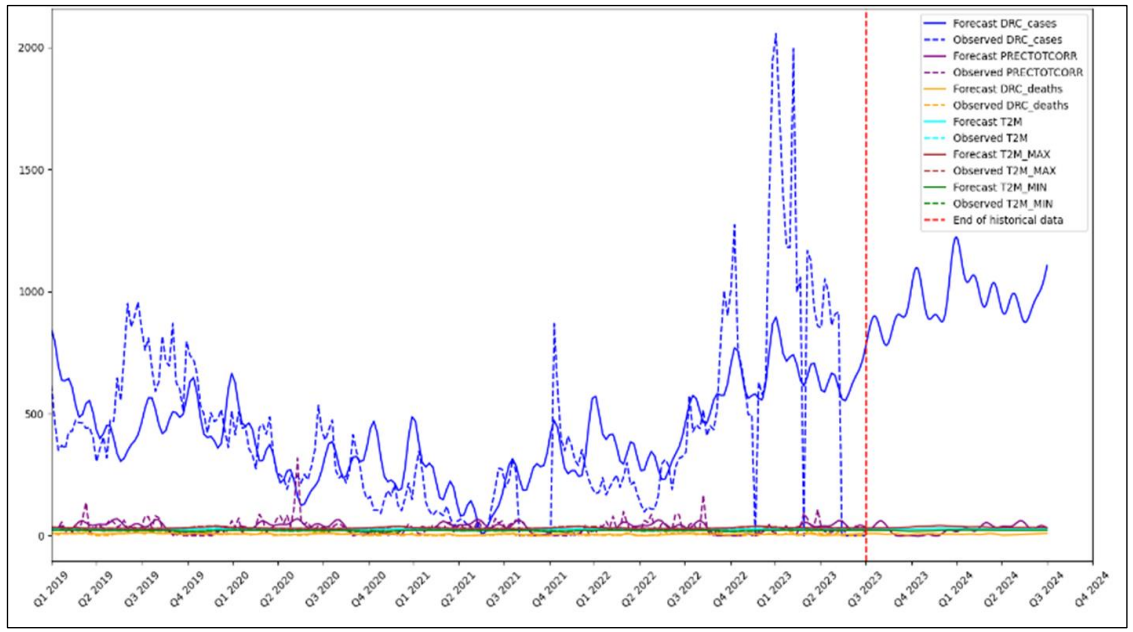
3. AI-driven predictive modeling of PHE cases and deaths

STAR dashboard and Regional Risk Calendar



AI-driven Predictive Modeling

Actual vs Forecasted trends incorporating weather data



Predictive model accuracy using DRC cholera data

Variable	MSE	RMSE	MAE	Accuracy
DRC cases	253161.03	503.15	510.60	
DRC deaths	61.12	7.82	5.71	
PRECTOTCORR	459.60	21.44	17.48	18.9%
T2M	2.02	1.42	1.27	95.13%
T2M_MAX	6.00	2.45	2.40	92.73%
T2M_MIN	0.75	0.87	0.98	95.14%
rfe	485.57	22.04	14.30	91.3%

EPI-WIN Webinar

- View webinar: **STAR experience in managing health emergencies & disasters, including climate crisis**
- Strategic toolkit for assessing risks: A comprehensive toolkit for all-hazards health emergency risk assessment.
- Speakers
  - Dr Stella Chungong, WHO-HQ
  - Dr Kingsley Bieh, WHO-HQ
  - Dr Mahendra Arnold, Ministry of Health, Sri Lanka
  - Mr Veaceslav Guțu, National Agency for Public Health, Republic of Moldova
  - Ms Rowana Capistrano, WHO Country Office Philippines
  - Dr Nasr Ali Ahmed Mohammed, Whole of Syria Health Cluster Coordinator
  - Dr Dick Chamla, WHO AFRO
  - Dr Alex Camacho, WHO PAHO/AMRO
  - Dr Qudsia Huda, WHO-HQ