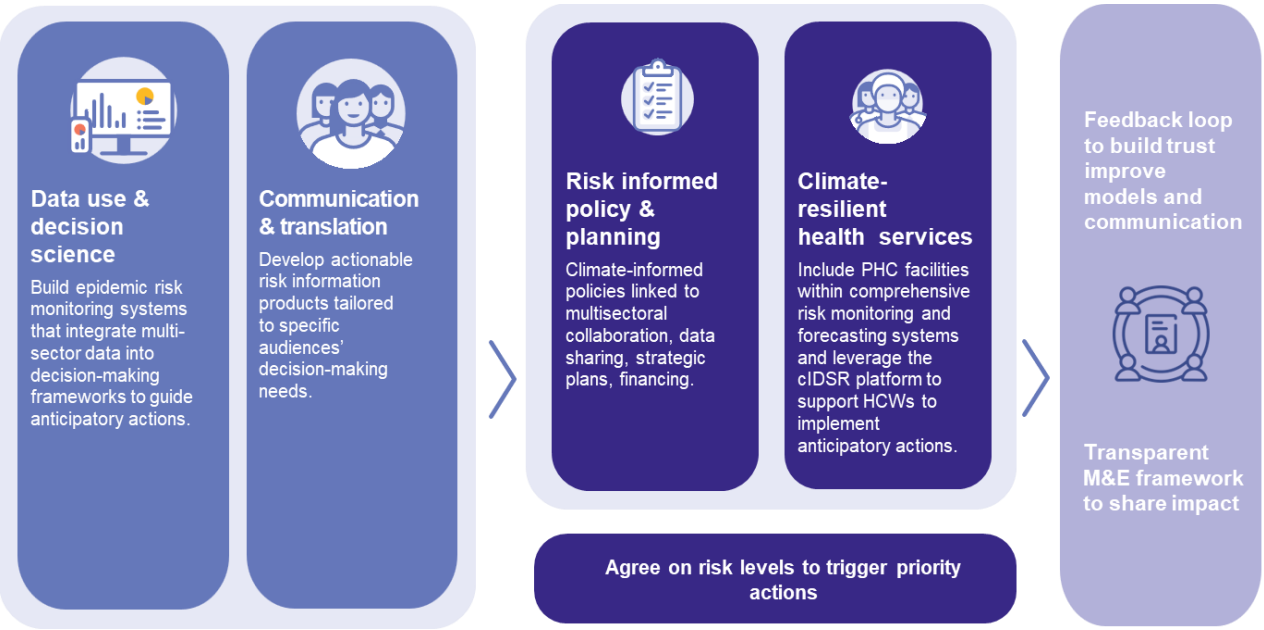
From signals to systems: Strengthening epidemic readiness through climate-informed strategies

As climate change increasingly shapes the conditions that drive infectious disease outbreaks and other health emergencies, strengthening epidemic readiness and health system resilience has never been more critical. Readiness bridges the gap between immediate emergency response and long-term preparedness with “anticipatory actions” triggered when pre-defined risk levels are met. Climate information services for health are at the heart of this effort, providing real-time, actionable insights to anticipate and respond to climate-sensitive health threats.

Resolve to Save Lives (RTSL) is partnering with national and subnational governments to enhance their use of climate information services to strengthen data use and decision science; improve the communication and translation of climate-health risks; embed risk-informed strategies into policies and planning; and build climate-resilient health systems capable of responding to health emergencies while maintaining essential services.

Figure 1. Climate-informed strategies for epidemic readiness



We collaborate closely with national public health agencies to strengthen the following areas:

1. Data use and decision science

- Build epidemic risk monitoring systems that integrate multi-source data—including historical, real-time or forecasted climate data such as rainfall, temperature, drought indices, and flood models—into decision-making frameworks.
- Coordinate with multisector partners, including health and meteorological agencies, to gather data and forecast the impact of climate change on health risk.
- Make epidemic risk monitoring more widely accessible by adapting and applying methods with different levels of complexity—from predefined climate triggers and qualitative risk scoring to quantitative risk forecasting models—based on hazard (including climate), vulnerability and coping capacity factors.
- Calibrate climate-influenced or driven risk levels and link to decision triggers, improving timeliness of anticipatory actions.

2. Communication and translation

- Transform complex epidemic and climate risk data into clear, actionable information products (dashboards, seasonal calendars, and color-coded alerts) tailored to different decision-makers.
- Embed communication strategies within appropriate epidemic risk and impact mitigation structures (e.g., Public Health Emergency Operations Centers) that include feedback loops to improve product content, relevance to the audience, and dissemination strategies to ensure the right information reaches the right people at the right time.
- Carefully communicate the role of climate in determining epidemic risks, supporting non-technical audiences (e.g., local government leaders) to take anticipatory actions based on climatic forecasts.

3. Risk-informed policy and planning

- Integrate climate-sensitive risk monitoring and anticipatory action protocols into national and subnational health security policy and planning (e.g., National Action Plans for Health Security).
- Co-design risk-responsive financing mechanisms to release flexible funds when climate-linked risk levels are met (e.g., rainy season onset, flood alerts) triggering pre-assigned anticipatory actions.

4. Climate-resilient health services

- Include primary health care facilities within comprehensive epidemic risk monitoring and forecasting systems and leverage the clinical integrated disease surveillance and response (cIDSR) platform to support and expand anticipatory action by health care workers. cIDSR is a free, online, and mobile-friendly training program that supports frontline healthcare workers in detecting, treating, and reporting infectious diseases.
- Co-design and implement integrated, adaptable, and long-term systems strategy for primary health care infrastructure that ensures epidemic readiness, climate resilience, and sustainability, enabling primary health care systems to effectively respond to health emergencies and climate-related challenges.

From signals to systems: Enhanced situational awareness milestones

- Supported three countries to integrate recommendations derived from recent risk and vulnerability assessments (using the WHO STAR methodology) into their 2024 NAPHS, including priority activities designed for risk mitigation based on timely data.
- Convened multisector stakeholders in three countries to define risk levels to trigger anticipatory actions.
- Facilitated the development of subnational seasonal calendars for priority hazards in 10 states in Nigeria.
- Hosted forecasting and modelling workshops in Ethiopia bringing together national stakeholders and international academic groups.
- Co-designed data products that integrate climate information services, including dashboards, seasonal calendars, and epi-bulletins for different audiences.
- Facilitated MOU between the Nigeria CDC and meteorological agency for collaboration and data sharing.

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