ADAPT – PROTECT – CONNECT

EXECUTIVE SUMMARY

THE CHANGING FACE OF PANDEMIC RISK 2024

GPMB

GLOBAL PREPAREDNESS MONITORING BOARD

Executive summary

The changing face of pandemics

Global interconnectedness and mobility have driven the increase of pandemic risk in the 21st century. Outbreaks of avian influenza H5N1 in cattle and its spillover to humans, and a new strain of mpox in Central Africa are the most recent signals of concern. The high likelihood that they will spread further should be a wake-up call for the global community.

While global pandemic response capacity is better than ever, with improved surveillance coordination and national capacities, the world nevertheless remains acutely vulnerable. Without proactive measures that identify and rectify vulnerabilities, we run the risk that the next pandemic will again catch us unprepared.

In order to future-proof preparedness, the GPMB has undertaken a review of fundamental pandemic risk drivers to highlight the most effective and urgent pathways to making the world safer.

The emergence and spread of pathogens are not random events, but arise from ecosystem change. The rapid spread of diseases in highly mobile populations is exacerbated by urbanization and international trade. The increased volume and changed patterns of trade in animals and animal products contributes to the spread of animal pathogens. Digital connectivity has positively transformed disease surveillance and health emergency response, but comes with risks, including the spread of misinformation and disinformation. Artificial intelligence (AI) amplifies both the opportunities and the risks of the digital transformation. These risks to pandemic preparedness and response need to be managed by ensuring that enhanced and equitable digital technology access is accompanied by regulatory frameworks that align with ethical and public health principles, and promote cybersecurity.

Trust: an asset in pandemic response

Trust and mistrust are at the centre of pandemic response but have not yet received the sustained policy and scientific attention they deserve. Lack of trust can drive both the emergence of novel viruses and the amplification of outbreaks, by undermining compliance with control measures and incentivising secrecy rather than transparency.

Trust between countries enables stronger international collaboration and cooperation at global and regional levels. Amendments to the International Health Regulations (IHR) (2005) adopted by World Health Organization (WHO) Member States in 2024 have helped to build trust, highlighting the global community's willingness to rise above competing interests for the sake of enhanced mutual health security.

The One Health approach to preventing pandemics

Risks of disease outbreaks in animal populations and increased likelihood of spillover are driven by high animal density in industrial farming, changing environments in smaller-scale farming, and unregulated wildlife trade. Increased disease surveillance, effective regulatory regimes, and better protection and training of farmers are needed to mitigate these risks.

Climate change — along with land-use changes, deforestation and reforestation, loss of habitat and changes in water ecosystems — also impacts species distribution, migration patterns and the ecology of pathogens, disrupting current natural host-pathogen dynamics.

Places that have a dense human—animal—environment interface and are undergoing rapid change are ripe to become new hotspots of emergence of novel diseases with epidemic potential. Soon temperate countries may see outbreaks of diseases that are usually seen in tropical areas, such as epidemics transmitted by mosquitoes, including dengue or yellow fever.

Maximum security comes from maximum equity

Equity is the cross-cutting factor that makes or breaks pandemic preparedness and response. Inequity creates the ideal conditions for new outbreaks and exposes all countries, regardless of their wealth, to devastating epidemics and long-term economic, social and political impacts.

Inequitable access to countermeasures scars global solidarity. The COVID-19 pandemic highlighted stark inequities in access to life-saving interventions, not only vaccines but also products such as rapid diagnostic tests, oxygen extractors, and personal protective equipment (PPE). The unfolding mpox public health emergency runs the risk of repeating all the mistakes of inequitable pandemic response.

Violent conflicts are exacerbating insecurity. Such conflicts are at their highest level since the Second World War, affecting about 2 billion people, with more than 117 million displaced from their homes.[1,2] Conflict situations delay the detection, response to and containment of infectious disease, as exemplified by the mpox outbreak in the Democratic Republic of Congo (DRC) or the polio cases in Gaza. The killing of health care providers during armed conflicts also undermines the most vital of capacities.

Pandemics and the fourth industrial revolution

Biomedical innovations are crucial for faster and more effective epidemic and pandemic preparedness and response. Research into both pathogen-specific and pathogen-agnostic tools is essential to develop higher quality, more effective measures.

Effective response to health crises relies on a seamless end-to-end process. This includes research and development, testing, manufacturing, regulation, supply chains, and delivery. Addressing gaps at any point in this process is crucial now to avoid deepening inequities and increasing global vulnerability. Strengthening the global health architecture, including through an equity-promoting Pandemic Agreement, will help ensure that biomedical innovations are accessible and effective during crises, reducing vulnerabilities and enhancing resilience.

Effective governance in pandemic and epidemic preparedness and response requires transparency, inclusiveness, equity, flexibility and learning. Whole-of-society and whole-of-government approaches are key determinants of good responses.

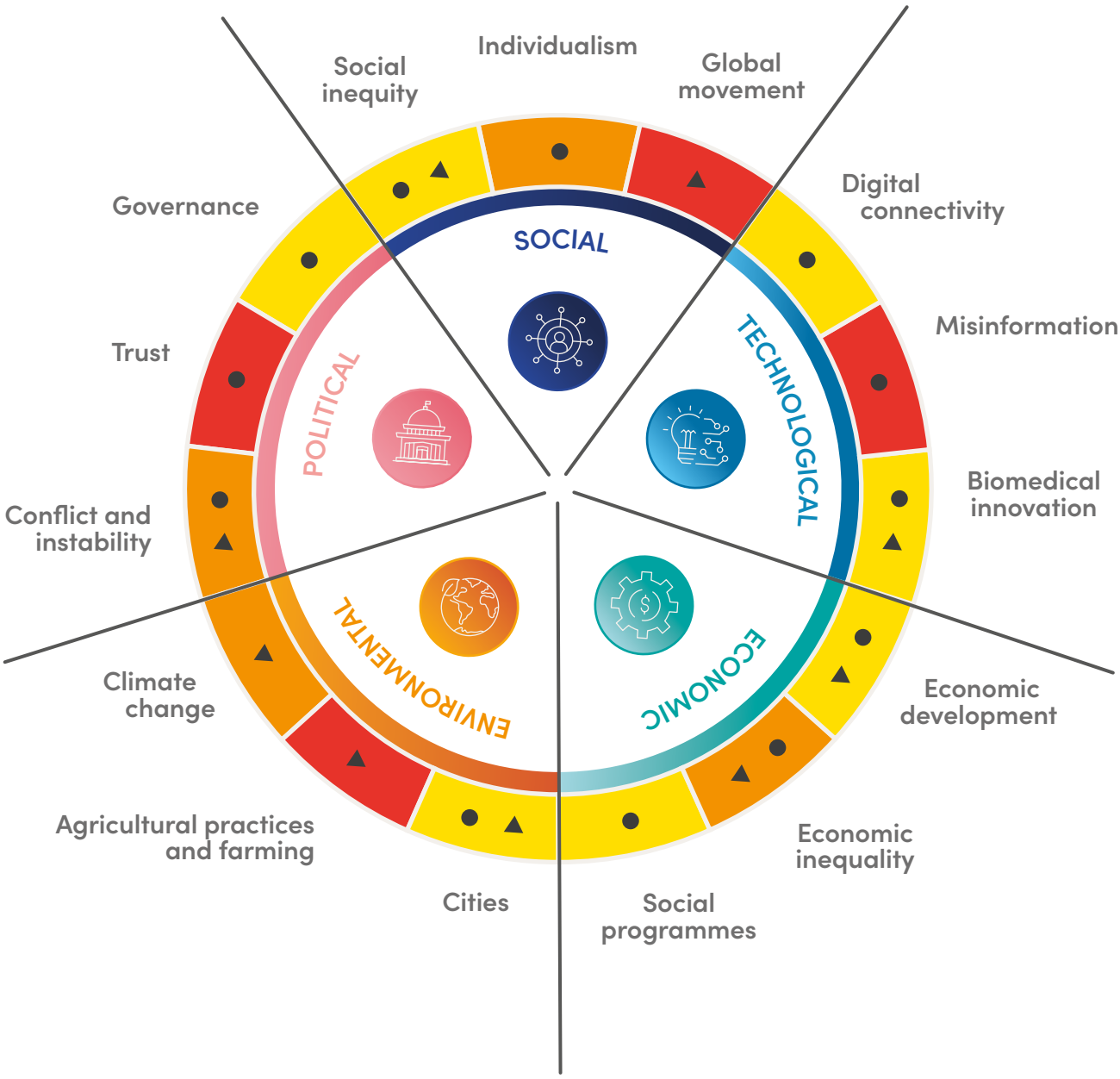
2024 GPMB assessment of pandemic risk

The following heatmap shows the GPMB's assessment of each STEEP driver's influence on pandemic risk, based on the quantitative indicators proposed in the GPMB Monitoring Framework. The assessments consider:

- **Trends for each driver** (for example, increasing, decreasing, or diverse trends in different contexts);
- **The driver's relative influence on pandemic risk**, ranging from low to very high, as compared to other drivers rather than on an absolute scale;
- **The need for and feasibility of urgent action** to mitigate these risks.

More information on the methodology informing the GPMB's assessment of pandemic risk can be found in the technical report *Expanding pandemic risk assessment* available on the GPMB website.

Impact of drivers on global pandemic and epidemic risk in 2024 based on GPMB and expert analysis



Impact on risk

- Very high
- High
- Moderate
- Low

- ● Impact on capacity to respond
- ▲ Impact on emergence or amplification

The box below provides a summary of the GPMB's assessment, highlighting the most severe risk drivers for 2024.

State of global pandemic risk in 2024

Of the 15 pandemic risk drivers assessed by the GPMB in 2024, four impact the level of risk the most: global movement, agricultural practices and farming, misinformation, and trust. The GPMB has observed that these drivers are rapidly increasing and are the most likely to contribute to the emergence and amplification of new outbreaks and epidemics, and to impact our capacity to respond to current ones, if no action is taken soon to address them. This report provides recommended actions for policy-makers to strengthen prevention, preparedness and response in light of these emerging pandemic risk drivers.

- **Global movement** through travel, trade and migration is at a record high and is likely to continue to increase in the coming years. Global movement is becoming a major amplifying factor of epidemics and pandemics. Countries with high mobility (for example, those with international travel hubs, strong livestock trade or with a high number of internally displaced people and refugees) are likely to become more vulnerable.
- **Agricultural practices and farming**: The number of livestock overall has increased dramatically. We are already observing the impact of this driver on the rapid spread of H5N1 globally. As global demand continues to increase, and biosecurity and surveillance measures remain inconsistently applied, the overall risk of spillover and amplification caused by agricultural practices and farming is severe.
- **Misinformation**: Access to and use of social media is on the rise everywhere and individuals are increasingly exposed to false and misleading content. Public health organizations and governments are struggling to keep up with information needs, and to respond to misinformation in a timely manner and prevent mistrust.
- **Trust**: There has been a decline in trust in many countries, distrust in institutions is growing and trust in the multilateral system is at risk. This is impacting our collective capacity both to tackle health emergencies and to find multilateral solutions to protect the world. However, trust-building strategies can be developed to overcome the challenges of pandemic preparedness and response in low-trust environments.

Four other drivers have also been assessed as having a high impact on pandemic risk (**climate change**, **individualism**, **economic inequality**, and **conflict and instability**), and these should also be closely monitored in the future.

Retooling preparedness for new pandemic realities

1. ADAPT

The next pandemic will be different from the last, therefore responses must be adaptable to changing local, national and global contexts. There is a risk that focusing solely on lessons learned from the COVID-19 pandemic could result in preparing for the last battle rather than the next one.

Agile planning requires the capacity to sustain response efforts while addressing an evolving set of risk drivers and managing multiple crises.

Every country requires a pandemic risk driver assessment, and each region should conduct a region-wide assessment. Preparedness plans at both national and regional levels should be adapted accordingly.

2. PROTECT

Many pandemic risks cannot be easily or rapidly mitigated. Countries therefore need increased protection.

Holistic systems approaches to protection are needed to boost resilient and capable health systems that articulate with social protection. They require support from the global and regional health and financing architecture, which needs to be aligned to increase capacity to prevent outbreaks and forestall amplification.

Four critical protective shields need to be enhanced: health system resilience, international collaboration, social protection, and safeguards against accidental release of dangerous pathogens and other biotechnological risks.

3. CONNECT

The risks attached to increasing planetary connectivity need to be mitigated by better supported intersectoral efforts. Stronger collaboration and exchange between the health and environmental sectors can orient investments towards win-win solutions for both sectors.

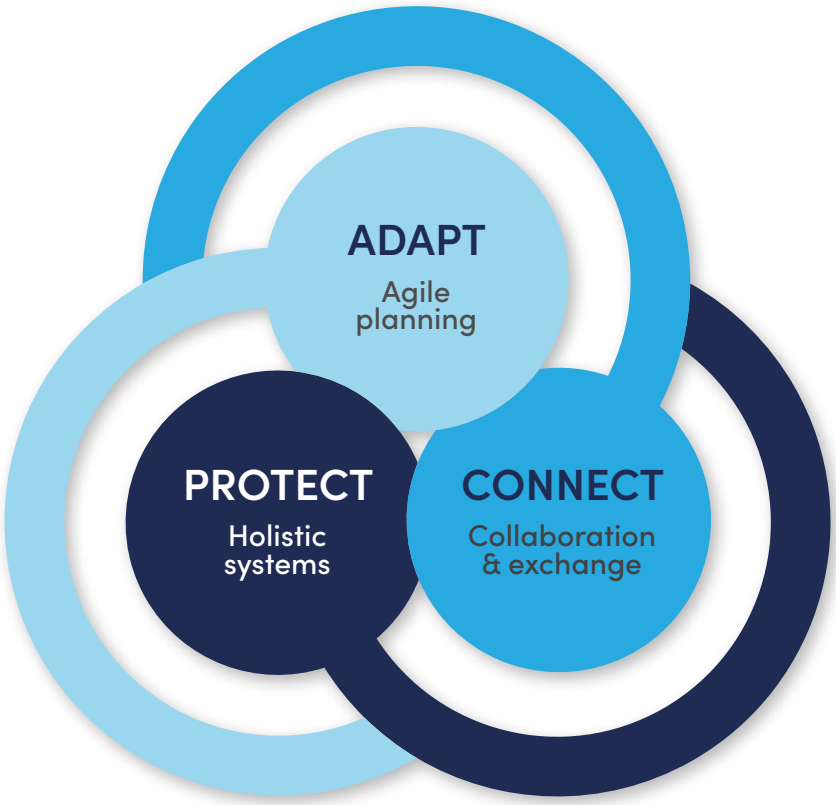
One Health approaches reduce the risk of emerging zoonotic diseases at the human–animal–environment interface. They are especially critical in emergence hotspots, where concerted efforts are needed to address underdevelopment, inequities, social protection, and the strengthening of primary health care. Better metrics are needed to define hotspots of emergence and to pinpoint the risks and solutions related to human–animal–environment dynamics.

Investing in whole-of-society approaches and more inclusive pandemic preparedness and response is crucial to addressing the complexity of pandemic risk drivers.

Specific financing at scale for cross-sectoral collaboration, including the implementation of One Health approaches, is essential. It will accelerate solution-finding at the interface of the multiple sectors that are implicated in pandemic risk, and enable pandemics to be addressed in their full complexity.

Conclusion

The next pandemic will likely be different from the last, requiring adaptive, innovative and inclusive approaches to preparedness and response. The global community must invest in equity, trust building, and collaboration to ensure effective responses to future health crises. By addressing the complex interactions between humans, animals and the environment, the world can better prepare for and mitigate the impact of future pandemics.



[1] With Highest Number of Violent Conflicts Since Second World War, United Nations Must Rethink Efforts to Achieve, Sustain Peace, Speakers Tell Security Council. In: United Nations (UN) [website]. Geneva: UN. 26 January 2023 (https://press.un.org/en/2023/sc15184.doc.htm, accessed 8 October 2024).

[2] Global Trends: Forced Displacement in 2023. Copenhagen: United Nations High Commissioner for Refugees; 2024 (https://www.unhcr.org/global-trends-report-2023#:~:text=At%20the%20end%20of%202023,events%20seriously%20disturbing%20public%20order., accessed 8 October 2024).

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