

PrepTalks Discussion Guides are companion documents to PrepTalk video presentations and question-and-answer (Q&A) sessions. When used together with the videos, these guides help translate the research and expertise showcased in each presentation into action steps to improve disaster preparedness.

Francis Ghesquiere: The Making of a Resilient Future

Ghesquiere's PrepTalk presents a global perspective on the need to improve disaster resilience. He highlights the scale of the challenge, from rapid urbanization in areas at risk of earthquakes and floods, to the increasing frequency and intensity of storms that seemed like myths just a few years ago. He discusses the need for all sectors to participate in planning and to incorporate future trends in population growth, urbanization, and increasing risk due to future environmental conditions.

Ghesquiere heads the Global Facility for Disaster Reduction and Recovery (GFDRR), a global partnership hosted by the World Bank with programs in more than 80 countries. The GFDRR recently published "The making of a riskier future: How our decisions are shaping future disaster risk," available at <https://www.gfdr.org/sites/default/files/publication/Riskier%20Future.pdf>. This publication outlines the drivers of future global disaster risk and makes the case that "tomorrow's risk is being built today. We must therefore move away from risk assessments that show risk at a single point in the present and move instead towards risk assessments that can guide decision makers towards a resilient future."

The making of a riskier future: How our decisions are shaping future disaster risk

Executive Summary – Key Messages from the report:

- Most disaster risk assessments today are static, focusing only on understanding current risks. A paradigm shift is needed toward dynamic risk assessments, which reveal the drivers of risk and the effectiveness of policies focused on reducing risk.
- Global disaster risk is changing extremely fast, due to combined dynamics of hazard, exposure, and vulnerability.
 - Hazard refers to the likelihood and intensity of a potentially destructive [event].
 - Exposure refers to the location, attributes, and value of people and assets exposed to the hazard.
 - Vulnerability is the potential extent to which physical, social, economic, and environmental assets may become damaged or disrupted when exposed to a hazard event [including physical vulnerability and social vulnerability].
- The drivers of disaster risk are in the control of policy makers, society, and individuals—but accurate assessment and continuous reevaluation of risk are required to enable effective risk reduction and prevent drastic increases in future losses.

Source: p. xiii, p.5, <https://www.gfdr.org/sites/default/files/publication/Riskier%20Future.pdf>



Partners for the Discussion

Based on his international research, Ghesquiere encourages policy-makers to integrate forecasted trends in your community's demographics and land use plans with assessments of current and future risk. This means bringing together a broad group of stakeholders and community leaders.

You may want to meet with different groups when discussing each of the themes below. Participants could include those involved in forecasting hazard risks, for example the Warning Coordination Meteorologist from your local National Weather Service (NWS) Weather Forecast Office, data scientists at local universities, planners from local and regional planning organizations and government offices and organizations that may have different areas of focus including: hazard mitigation, community resilience, floodplain management, zoning, building codes, transportation, economic development, affordable housing, and historic preservation. Consider including demographers from local universities and Geographical Information System (GIS) mapping specialists. You will also need to have discussions with your elected leadership and the governmental financial offices within your jurisdiction.

[Resilience] is not just one problem that can be siloed; this is an issue that has to be addressed in every single sector.

Francis Ghesquiere

Watch Ghesquiere's PrepTalk and Q&A session. Use this discussion guide and the other additional resources to discuss how to better capture future trends in the hazards your community is facing as well as population and infrastructure changes.

Discussion Prompts

Echoing the need to plan looking toward the future, the Federal Emergency Management Agency (FEMA) 2018-2022 Strategic Plan is based on key strategic drivers and trends as identified in the FEMA Strategic Foresight Initiative. These are noted in the boxes below and are applicable to planning at all levels of government. There is also a 4-minute video providing a high level introduction to the Strategic Foresight Initiative, which would be useful to watch before discussing the themes and associated questions below: <https://www.fema.gov/media-library/assets/videos/133159>.

Topic: Rising Disaster Costs

Strategic Foresight Key Influencing Theme: Rising Disaster Costs

Disaster costs are expected to continue to increase due to rising natural hazard risk, decaying critical infrastructure, and economic pressures that limit investments in risk resilience. As good stewards of taxpayer dollars, FEMA must ensure that our programs are fiscally sound. Additionally, we will consider new pathways to long-term disaster risk reduction, including increased investments in pre-disaster mitigation.

Source: FEMA 2018-2022 Strategic Plan, p. 10, <https://www.fema.gov/media-library/assets/documents/160940>

- How is your community planning to hold down the rising cost of disasters? Consider reviewing your community's potential disaster costs by using FEMA's Hazus multi-hazard loss estimation tool, www.fema.gov/hazus, and others tools such as National Oceanic and Atmospheric

Administration’s (NOAA) Coastal Resilience tool which forecasts future flood risks from sea level rise and storm surge, <https://coast.noaa.gov/digitalcoast/tools/coastalresilience.html>.

- A 2018 study by the National Institute of Building Sciences found that for every \$1 that the Federal Government invests in mitigation saves taxpayers an average of \$6 in future spending. What pre-disaster mitigation investments could have a similar return for your community?
- As stewards of your community’s tax dollars, how are you ensuring that your investments in infrastructure, economic development, mitigation and other initiatives are fiscally sound? For example, do all your community’s land-use plans consider flood-prone areas or areas susceptible to coastal surge? Dr. Berke’s PrepTalk, Land Use Planning for Community Resilience, provides great strategies on ensuring land use plans are integrated and take into account community hazards. <https://www.fema.gov/preptalks>
- In its report, The making of a riskier future, the GFDRR explains, “[Risk] assessments provide the basis for disaster risk management and decision making in multiple sectors by quantifying the effects of disaster in terms of potential casualties and asset losses. Information on future disaster risk is essential.”
- Does your community have ways to quantify future risks, both with and without disaster risk management interventions?

[We must] sensitize ministries of finance, which are the people who allocate the resources ... Part of that effort has been how do we translate the language of disaster risk into the language of ministries of finance ... Using probabilistic technique, we can now actually measure the probability of loss and the probability of an event, and what impact that will have on their balance sheet.

Francis Ghesquiere



Source: p. 2, <https://www.gfdrr.org/sites/default/files/publication/Riskier%20Future.pdf>

Topic: New Technology

Strategic Foresight Key Influencing Theme: New Technology

The ability to leverage technological innovations opens up revolutionary possibilities for emergency management. As the private sector leaps ahead and further raises public expectations, FEMA will carefully analyze innovations that could increase efficiency and improve the user experience for our partners and disaster survivors. Leveraging new technologies promises new opportunities to simplify FEMA's processes and make our programs more accessible and friendly to the populations that we serve.

Source: FEMA 2018-2022 Strategic Plan, p. 10, <https://www.fema.gov/media-library/assets/documents/160940>

- How will continued rapid technological innovation change how people in your community live, work, and play? Will people telework more? Will they change their commuting patterns or means of transportation?
- How can you take advantage of the National Weather Service's improvements in forecast modeling to better communicate impending threats through your alerts and forecasting systems? Consider how to better message alerts and warnings based on Dr. Dennis Mileti's PrepTalk, *Modernizing Public Warning Messaging* at <https://www.fema.gov/preptalks>.
- How will the increasing Internet of things (IoT) affect early warning systems, real-time data analytics, remote monitoring, and locating survivors faster?
- In its report, *The making of a riskier future* (p. xv-xvi), the GFDRR reminds us, "risk assessments typically fail to account for changing climate, population, urbanization, and environmental conditions. They thus reduce the opportunity to highlight long-term cost-effective options for risk reductions. Policy measures rely on data and risk modeling: enhancements in data collection and risk assessment are therefore a crucial part of the policy-strengthening process." Do we have access to modeling tools to help forecast future risk? Do we have adequate staff versed in GIS and modelling technology?

People move towards navigation channels; people move towards [the] center of economic activity ... It's not just how you build the road ... It's where you put the road. If you put the road in a floodplain ... that is where the population is going to be in 10 years [and] you're going to have a flooded population 10 years from now.

Francis Ghesquiere

Topic: Diversity and Inclusion

Strategic Foresight Key Influencing Theme: Diversity and Inclusion

The U.S. population is growing older and more diverse in terms of culture, language, and perspective. This places pressure on authorities to incorporate specialized needs, expectations, and methods of communications into their plans to maintain equitable access to services. The changing demographics of the Nation also affect the makeup of FEMA's workforce. As an agency, diversity and inclusion is a key component in our ability to serve all people. We must continue to employ and retain diverse staff and coordinate with the whole community of emergency managers to ensure that the needs of the entire population we serve are considered.

Source: FEMA 2018-2022 Strategic Plan, p. 10, <https://www.fema.gov/media-library/assets/documents/160940>

- Trends show that the U.S. population will become significantly older (over 65) over the next 15 years, and the U.S. Census Bureau projects that older adults will outnumber children in population size. Does your community see that type of demographic shift? How do your emergency plans (e.g., evacuation, sheltering, and communicating protective actions) need to change to support this demographic shift?
- What other demographic trends might you see in your community population? Do you expect changes in racial or ethnic populations, migration into or out of our community? See the U.S. Census Bureau's We are a Changing Nation: A Series on Population Trends, available at <https://www.census.gov/library/stories/2017/08/changing-nation-demographic-trends.html>. How do our community plans need to evolve in order to reflect these future trends? Are we appropriately involving stakeholders that represent different population segments in our planning efforts?

Topic: Emerging Threats

Strategic Foresight Key Influencing Theme: Emerging Threats

The spectrum of viable threats is expanding, with cybersecurity joining nation-state threats and terrorism as a widespread public concern. The National Security Strategy requires that the Nation improve its ability to assess the threats and hazards that pose the greatest risks to Americans. As an agency, FEMA will lead the Nation to build a culture of preparedness that includes improving risk management, strengthening capabilities, dynamic learning, and information sharing.

Source: FEMA 2018-2022 Strategic Plan, p. 11, <https://www.fema.gov/media-library/assets/documents/160940>

- With increased connectivity and dependence on power comes increased security risks, how are you accounting for increased cybersecurity threats?
- How well do your plans consider threats of terrorism or other acts of violence in your community, such as active shooter?
- Are there any future conditions to start planning for now, including changes in flooding or wildfire patterns or new hazards, such as drought? Are there potential infrastructure failures, such as bridges or dams that should be included in plans? To see how Cape Town, South Africa

is dealing with severe water shortage, visit

<http://www.capetown.gov.za/Family%20and%20home/residential-utility-services/residential-water-and-sanitation-services/make-water-saving-a-way-of-life>.

- Have you encouraged workplaces, schools, faith-based organizations, and other groups to hold drills to practice for these emerging threats?
- Does your plan include response to non-natural hazards, including chemical, biological, radiological, and nuclear threats?
- Have you conducted tabletop exercises to assess the ability to respond to these threats? Have you included community stakeholders to participate in these exercises? The Homeland Security Exercise and Evaluation Program provides guidelines for developing effective exercises; go to <https://www.fema.gov/hseep>.

Recommended Next Steps

- Map the hazards, exposure, and vulnerability for your community now and projected over the next few decades. Determine a process for periodic review and updating and who has the expertise to support this effort.
- Organize groups with the correct representation for both technical and sociological discussions and create a process to review your community plans with each group. Based on your how your community populations will shift, conduct an outreach campaign to ensure appropriate participation of all population segments.
- Review your access and capabilities in mapping and modeling technologies.
- Review the three goals in FEMA's Strategic Plan and the underlying objectives and consider incorporating similar goals in your jurisdiction's strategic plan.
- Develop a process for ongoing coordination across the whole community, to include continued forecasting, plan review, land use planning, and financial investments.

Additional Resources

- The making of a riskier future: How our decisions are shaping future disaster risk. <https://www.gfdrr.org/sites/default/files/publication/Riskier%20Future.pdf>
- FEMA 2018-2022 Strategic Plan. <https://www.fema.gov/strategic-plan>
- FEMA's Strategic Foresight initiative – a high level introduction on trends impacting emergency management. <https://www.fema.gov/media-library/assets/videos/133159>
- FEMA Hazus is a nationally applicable standardized methodology that contains models for estimating physical, economic and social impacts from earthquakes, floods, and hurricanes. <https://www.fema.gov/hazus-mh-user-technical-manuals>
- NOAA Coastal Resilience Mapping Portal – an online tool to help users visualize future flood risks from sea level rise and storm surge. <https://coast.noaa.gov/digitalcoast/tools/coastalresilience.html>



- Department of Homeland Security Strategic Principles for Securing the Internet of Things. https://www.dhs.gov/sites/default/files/publications/Strategic_Principles_for_Securing_the_Internet_of_Things-2016-1115-FINAL_v2-dg11.pdf
- Homeland Security Exercise and Evaluation Program. <https://www.fema.gov/hseep>
- UN Office for Disaster Risk Reduction (UNISDR) PreventionWeb, a collaborative knowledge sharing platform on disaster risk reduction, United States of America pages. <https://www.preventionweb.net/english/countries/americas/usa/>
- Dr. Philip Berke's PrepTalk: *Land Use Planning for Community Resilience*. <https://www.fema.gov/preptalks>
- Dr. Dennis Mileti's PrepTalk: *Modernizing Public Warning Messaging*. <https://www.fema.gov/preptalks>.
- U.S Census Bureau: We are a Changing Nation: A Series on Population Trends. <https://www.census.gov/library/stories/2017/08/changing-nation-demographic-trends.html>.

