WORLD ECONOMIC FORUM

In collaboration with

McKinsey & Company

White paper

Seizing the momentum to build resilience for a future of sustainable inclusive growth

The 'resilience agenda,' developed by the World Economic Forum with McKinsey & Company, is the first serious program to coordinate long-term solutions throughout our disrupted world.

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Foreword

Børge Brende
President,
World Economic Forum

Bob Sternfels
Global managing partner,
McKinsey & Company

Facing a world of continuous, overlapping disruptions, leaders are recognizing resilience as the imperative condition for securing a sustainable, inclusive future. At the World Economic Forum Annual Meeting in Davos in May 2022, government, business, and nonprofit leaders came together resolutely around this theme. Amid severe climate events, a still-smoldering pandemic and a tragic war in Europe, we launched the Resilience Consortium. The consortium is a catalyst for coordinating public- and private-sector efforts to build and strengthen resilience. Leading organizations have joined the consortium steering committee, which is supported by the World Economic Forum and McKinsey & Company.

In our earlier paper, *Resilience for sustainable, inclusive growth*, we defined the strategic resilience areas, including climate, food, supply chains, technology, organization, education, and healthcare. All are subject to continual change and disruption. We must manage them as never before if we are to grow and prosper sustainably.

The Resilience Consortium emphasizes that resilience building must be accomplished jointly and in a coordinated effort by the public and private sectors. The coordination must extend as well across the resilience areas. These have become deeply interconnected in ways that are not always apparent until crisis strikes. We must therefore explore the interconnections and the vulnerabilities they might hide to ensure that efforts in one resilience area are aligned with the goals in the others and accelerate progress towards them.

Finally, the long-term view must prevail. Leaders must avoid being overwhelmed by immediate issues. They need to protect resources devoted to long-term, sustainable growth goals. The Consortium and its members have worked together with numerous World Economic Forum initiatives. Based on the insights from this work, we are now able to present the first holistic resilience agenda. Our resilience agenda identifies necessary actions and proposes deeper collaboration across the strategic resilience areas. We also discuss how organizations can build resilience "muscle"—the enablers needed to endure crises and pivot into growth. In our previous paper, we estimated that the cost of failure to build resilience is between 1 and 5 percent of annual global gross domestic product (GDP). Leading research presented in this paper shows that in the coming decades, action or inaction on these resilience areas will affect GDP growth by plus or minus percentages that translate into trillions of dollars. When measured in terms of the quality of human life—or its very preservation—the values are much higher.

We thank all Resilience Consortium members and Forum initiative leaders for their work and their invaluable contributions to this second report. We hope it provides helpful guidance and insight to public- and private-sector leaders as we collectively think through the future directions of organized life on our planet.

This article is an edited version of "Seizing the momentum to build resilience for a future of sustainable inclusive growth," the white paper released by the World Economic Forum, with McKinsey & Company, on January 16, 2023, during the WEF Annual Meeting in Davos, Switzerland.

Introduction:

Resilience is the key challenge in a world of continuous disruption and rising uncertainty

In the past year, leaders of public- and private-sector organizations have been confronted with a lifetime's worth of disruption and crises. Global conflict, energy uncertainty, food shortages, accelerating inflation, and severe climate events rocked a world still unsettled by the COVID-19 pandemic. Consequently, leaders now recognize that our societies and institutions must function in an environment defined by continuous natural and man-made disruptions.

These disruptions cannot be treated in isolation, one after another, as they arise and reverberate through our fragile ecosystems and stressed networks. There aren't enough resources in the world to do that. Many government, institutional, and company leaders now agree that *resilience* is our key challenge: we must strengthen resilience beyond a survival capacity to enable long-term, sustainable, and inclusive growth. From this standpoint, resilience is understood as the ability to deal with adversity, withstand shocks, and continuously adapt and accelerate as disruptions and crises arise over time. The time has come to act on this understanding. The cost of inaction is too high.

Enter the "resilience agenda." This is a multilevel effort developed by the Resilience Consortium—government ministers, chief executives, and heads of international organizations—working together with World Economic Forum initiatives. The resilience agenda is designed to accelerate collective

action across key resilience themes. It is the first serious program to coordinate long-term solutions throughout the broad fabric of our disrupted world.

To help orient leadership thinking and enable real progress in alignment with these objectives, three key concepts must be recognized:

1. The resilience agenda is a complex, continuous effort that will extend through years and decades. Given the level of disruption and the interconnectedness of the issues, current times demand the integrated resilience agenda that this paper is advancing for the first time. The war in Ukraine has revealed links between supply chain vulnerabilities, energy security, and an affordable energy transition. Technology has to become a growth engine for business as well as providing new answers for better healthcare and a smoother energy transition. Intersectoral links can seemingly be adduced ad infinitum.

2. The long-term perspective is imperative. Given the current crisis, many governments and companies are naturally focused on finding solutions to immediate problems. However, of equal or even paramount importance is a long-term focus. Its importance is glaring in terms of climate risk but extends to the global supply chain, the geopolitical environment, technology, people and education, and healthcare. In addition to climate change, long-term risks include trends in demographics, data-driven technology, rising energy consumption, and behavioral health issues.

3. Progress will come only through international public–private collaboration. Individual governments and companies cannot by themselves resolve the world's problems or open an individual path to sustained growth. The private and public sectors have never needed each other more than they do right now to define the long-term parameters of economic growth. Given the disrupted world, success can come only from international cooperation and engagement in economic development and ensure sustainable and inclusive growth.

The resilience agenda addresses six themes, which become deeply interconnected areas of action (Exhibit 1).

Exhibit 1

The resilience agenda addresses six resilience themes.

Geopolitical
- Adapt business strategies to act flexibly in different geopolitical spheres
- Enhance foresight capabilities and scenario planning
- Collaborate with policy makers based on a deeper understanding of economic and geopolitical interdependencies

Climate, food, and energy
- Accelerate energy transition toward renewables on all fronts
- Work on transitional solutions like blue hydrogen and carbon capture and storage utilization
- Decarbonize by preserving and recuperating the natural environment
- Provide incentives for transition funding and decarbonization
- Prioritize food and basic needs in the transition for inclusive growth

Trade and supply chain
- Understand supply chain dependencies
- Reduce geopolitical, technological, and single-sourcing vulnerabilities
- Preserve beneficial supplier relationships and prosperous global interconnections
- Spot over-the-horizon risks with early sensing and scenario planning
- Provide fair trade opportunities for smaller, developing economies

People, education, and organizational
- Cultivate flexible operating models and adaptable leadership capable of embracing uncertainty
- Decentralize decision making supported by self-sufficient teams
- Focus on long-term talent development; upskill and reskill existing workforce
- Invest in education to reduce growing talent gap and social inequality

Healthcare
- Prioritize preventative and holistic health
- Increase capacity and productivity of the healthcare system
- Enhance resistance against future pandemics and health crises
- Ensure inclusion and equitable care

Digital and technological
- Develop digital and technological strategies toward long-term productivity enhancements
- Anticipate cyber risks and vulnerabilities attending technology change
- Develop ethical parameters to protect personal privacy and promote inclusivity

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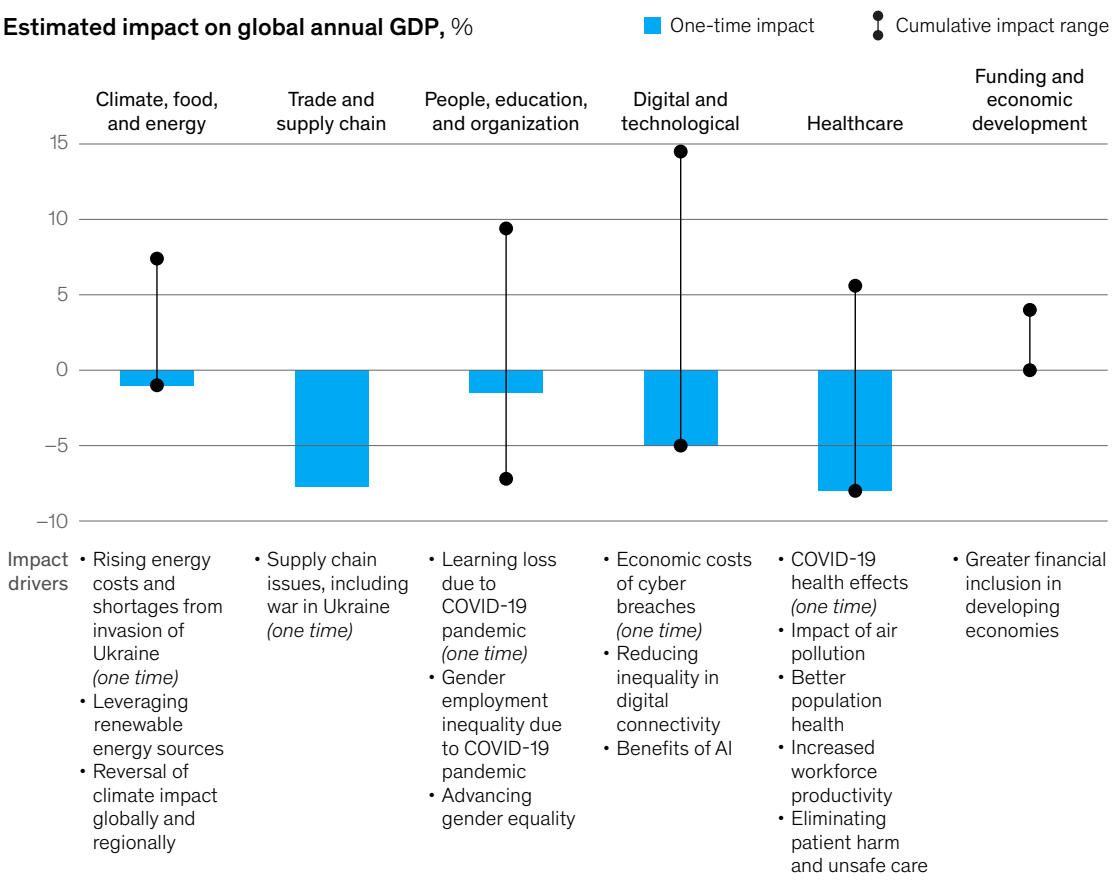
This paper lays out the key elements of the resilience agenda and actions that the public and private sectors must undertake to strengthen global resilience. They represent a starting point rather than a checklist of discrete topics and were developed using two holistic resilience frameworks, one for private-sector and one for public-sector actions. Leaders should use these frameworks to continuously challenge their strategies and organizations (represented in Exhibits 5 and 6).

The value at stake in the resilience agenda for long-term growth is enormous. Leading research shows that the resilience themes have short- and long-term impact on GDP ranging from –8 to +15 percent (Exhibit 2).

Exhibit 2

Action or inaction within the resilience themes can have impact on GDP ranging from –8 to +15 percent.



Source: McKinsey and World Economic Forum analysis

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The resilience agenda is the first serious program to coordinate long-term solutions throughout the broad fabric of our disrupted world.

To prevent damage and capture opportunities, resilience leaders are needed. Only leaders who understand its importance will be able to steer the resilience agenda. They will deliberately seek to secure long-term solutions while managing short-term issues; they will promote new public–private sector dialogues that can shape a new international environment. They will do these things because they understand that the cost of inaction is already incomparably greater than the cost of the actions outlined in the resilience agenda.

The resilience themes and the actions needed within them are broadly described below. The linkages from theme to theme and the vulnerabilities within the themes must be explored so that initiatives in one area can be aligned with the goals of the others and even accelerate progress toward them.

Geopolitical resilience

Institutions are facing increasing risk from an evolving, more fragmented geopolitical landscape. As global enterprises increasingly experience the impact of more volatile political dynamics, geopolitical risk has climbed to the top of the agenda for CEOs and policy makers. To better navigate geopolitical disruptions, leadership from the private and public sectors can focus on four dimensions.

Operate with flexibility across geopolitical spheres

Adapt strategies and develop flexibility to reconfigure business models in diverse geopolitical spheres. For example, shifting to greater in-region localization—by establishing a network of partnerships with local companies or enhancing greater localization in product design, development, and production—can provide a bulwark against competing trends and make future portfolio decisions easier to navigate. Such localization can extend to financing and talent as well.

Center on coherent values and a global ethos

Institutions active in sensitive regions need to know what they are for and what they are against. Region-specific compacts that fuse risk management and corporate strategy can help clarify an organization's goals in a region and the rationale and criteria for continued operations there. These decisions usually involve the board, with input from internal and external stakeholders.

Deepen understanding of economic and geopolitical dependencies

Resilient growth depends on public- and private-sector alignment of interests and standards against disequilibrium created by political and economic competition and continuing uncertainty. Governments should lead with a longer-term view on strategic and geopolitical alignment, defining clear parameters for global trade within which companies and industries can act. To support sectors of national strategic importance, policy makers can set incentives to encourage private-sector investment in R&D, manufacturing, and distribution. Policies and standards on sensitive business areas such as trade, intellectual property, R&D, data, and environmental, social, and governance (ESG) aims can shift industry dynamics and affect country-level competitiveness.

Use scenario planning for geopolitics

Organizations can do more to craft detailed analytical scenarios that clarify concrete future actions—the "so what" and "now what," especially for highly probable, high-impact threats. An agenda of actions for each threat is essential, based on a thorough understanding of material geopolitical developments. Public- and private-sector cooperation in such scenario planning is necessary, since their interests are highly interdependent.

Resilient growth depends on public- and private-sector alignment of interests and standards against disequilibrium created by political and economic competition and continuing uncertainty.

Climate, energy, and food resilience

At the UN Climate Change Conference in Glasgow (COP26) in 2021, establishing net-zero ambitions introduced new climate considerations for policy makers and businesses. In the following year, surging inflation and the war in Europe raised questions about how to achieve an energy transition that is secure, affordable, and clean.

Energy costs may remain elevated for several years, a trend that will affect the competitiveness of energy-intensive sectors and make life even more difficult for vulnerable populations. As a percentage of global economic output, energy investment since 2015 has been more or less static at 2.2 to 2.6 percent (the high point in 2019).[1] Coupled with insufficiently diversified supply chains as well as scarcity in labor and raw materials essential for the energy transition, static investment is putting the availability and security of energy at risk.

The tasks within this multidimensional area of resilience are numerous and of great consequence for the quality of human life, the health of the natural environment, and the vibrancy of the global economy.

Increase energy independence and sustainability

Electricity demand is expected to rise more than 250 percent by 2050 on a zero-emission basis.[2] To meet demand, organizations have to diversify

1 *World Energy Investment 2022*, International Energy Agency (IEA), 2022; *World Energy Investment 2016*, IEA, 2016.
2 *World Energy Outlook 2022*, IEA, 2022.

energy sources and accelerate the use of renewables and clean power. They must also invest in grid electrification. This will require the public and private sectors to improve grid efficiency and reliability, deploying digital technology to boost grid flexibility. The energy transition is also, by definition, a materials and minerals transition. This involves reliance on certain scarce minerals produced in only a few countries. Demand for some rare earth minerals is already greater than the known supply. Addressing such challenges requires R&D investment to find substitute minerals, accelerate materials recycling, and rethink supply chains.

Repurpose existing systems and invest in new technologies

New infrastructure will sit alongside legacy systems during the transition. Technology that reduces emissions from legacy systems will be a crucial part of net-zero achievement. Existing facilities for carbon capture, storage, and use can be brought up to date; direct air capture technologies have to be accelerated; and natural gas facilities can be adapted to decrease usage or to use a cleaner fuel mix. Now is the time to invest at scale in promising new technologies that can transform the energy system. By 2050, for example, blue hydrogen could account for 20 percent of emissions reduction.

Develop new sources of capital to invest in net-zero opportunities

Both public- and private-sector organizations should invest in a diversified portfolio of promising opportunities, approaching the green-energy transition as would a private-equity firm. A recent Swiss Re report found that the investment gap has been closing, but slowly. At the current pace of investment, net zero would be attainable only by 2069—almost 20 years behind target.[3] Capital deployment toward net zero will require investments in new minerals and materials, equipment and processes, technology, more adaptive supply chains, and green business opportunities. Leaders should invest now, as McKinsey research suggests that the untapped net-zero opportunity could be worth trillions by 2030 (Exhibit 3).

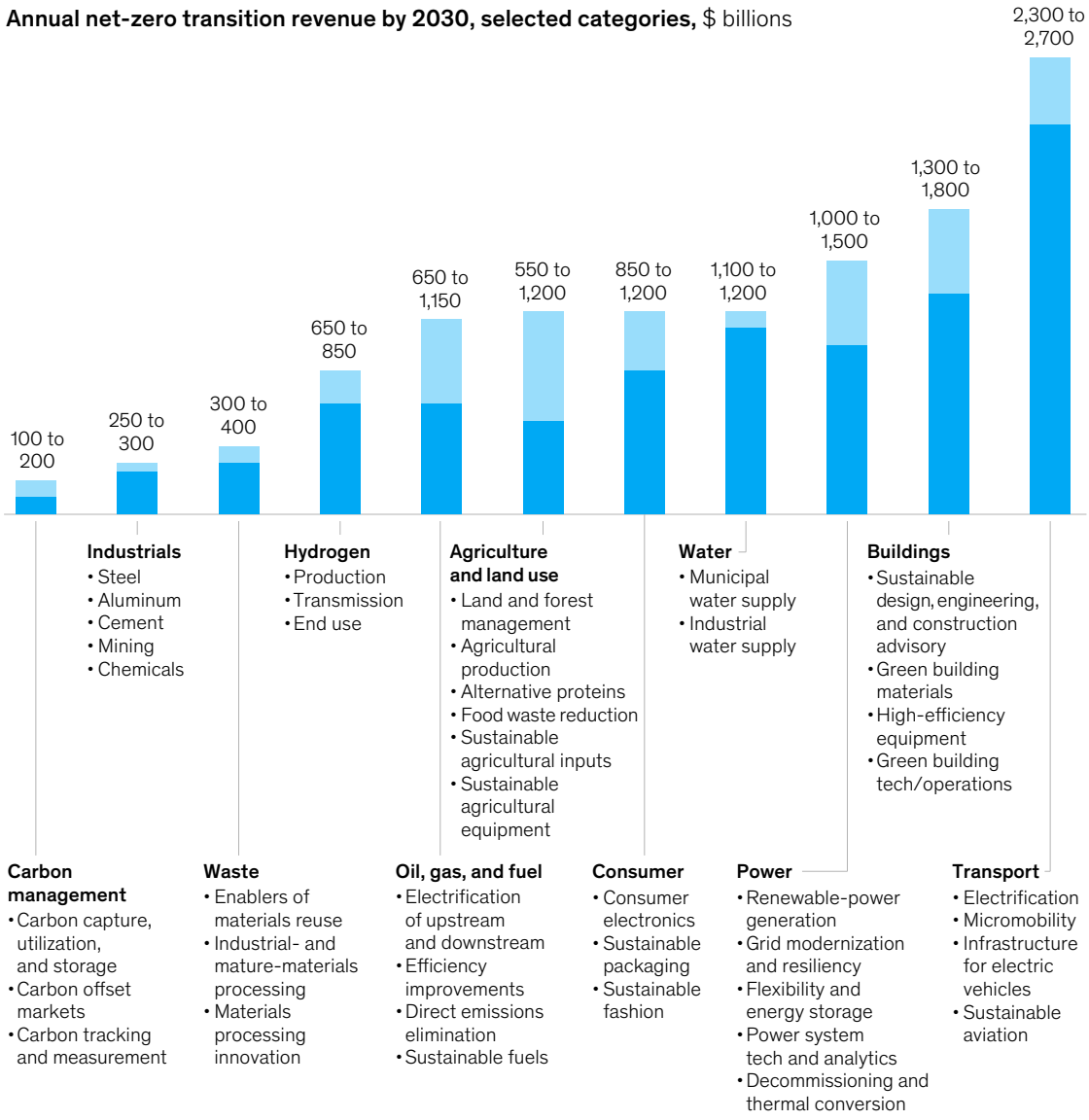
Both public- and private-sector organizations should invest in a diversified portfolio of promising opportunities.

[3] Hendre Garbers and Jerome Jean Haegeli, "Decarbonisation tracker: Progress to net zero through the lens of investment," Swiss Re Institute, October 7, 2022.

Exhibit 3

High-potential actions could be worth more than $12 trillion in yearly revenue by 2030 as net-zero transition advances.

Annual net-zero transition revenue by 2030, selected categories, $ billions



Note: Preliminary, not exhaustive.

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Decarbonize through nature

Achieving net-zero greenhouse-gas emissions goals requires massive carbon removal from emissions. Currently, the only cost-effective way to remove CO_2 at scale is through the natural environment. Promoting this process has numerous additional benefits, including flood control and food resilience.[4] Natural climate solutions could provide up to one-third of the emissions reduction required to achieve the 1.5° pathway.[5] Governments can use regulatory frameworks to prevent harm to the environment, while companies can begin evaluating environmental risk as part of their investment criteria. Natural assets need to be valued: for instance, pricing carbon or water fairly to influence use where voluntary carbon markets can play a key role. These need to be expanded rapidly but in ways that ensure high-quality criteria for carbon credits. Companies should consider nature-based solutions as part of their bottom-line strategies. Governments can tap into the long-term economic potential of these projects. The African Union's ambitious Great Green Wall project to combat land degradation, desertification, and drought provides a model. Besides capturing large amounts of carbon, the project aims to offer fertile land and food security to vulnerable populations.

Enable affordable energy and food and water security

Food, water, energy, and climate change are fundamentally interlinked challenges. Failure to solve the resilience equation will risk climate events of greater magnitude and consequent increased physical damage. In 2021–22, floods in Pakistan, tropical storms in East Asia, and droughts in the United States, Africa, Europe, and China, all constrained food availability and resulted in higher food prices. Food-system resilience, together with nutrition security, are necessary for populations to live healthily. Diverse stakeholders will therefore have to work together for a green-farming transition to make healthier food more plentiful. Energy availability and decarbonization are needed to contain climate change and enable all countries to produce food sustainably. Together, the public and private sectors must think through these interconnected issues and ensure that efforts are aligned to create food and water security along with energy availability.

[4] *Scaling investments in nature: The next critical frontier for private sector leadership*, World Economic Forum, 2022.
[5] *Nature and net zero*, World Economic Forum, 2021.

Trade and supply chain resilience

Leaders and their organizations must better understand supply chain dependencies and reduce geopolitical, technological, and single-sourcing vulnerabilities in their operations. At the same time, resilience efforts must not sacrifice long-held supply relationships and the global interconnections that enable prosperity. To spot over-the-horizon risks, companies and governments should intensify their use of "early sensing" and scenario planning. Unlike attempts at prediction, this approach seeks to assess a range of potential outcomes given active forces and trends, and then connects the outcomes to trigger-based escalation and action protocols.

Shifting demand is one familiar cause of supply disruptions. Geopolitical factors may drive a deglobalizing trend in trade, and supplier relationships could become increasingly politicized. Yet such pressures will also come up against the established realities of the interdependent world, creating regulatory challenges and increased costs. No region in the world is close to being self-sufficient; all import at least 25 percent of one or more important resources or manufactured goods.[6]

Leaders and their organizations will need to draw upon their recent experiences in navigating supply chain disruptions. To build resilient supply chains, they should emphasize themes in three areas:

The sourcing footprint

Moves to reconfigure sourcing footprints should be measured against the value of retaining existing

[6] "Global flows: The ties that bind in an interconnected world," McKinsey Global Institute, 2022.

sources of supply. Vertical integration, where appropriate, can also be considered. The potential benefits of adding new sourcing locations should be weighed against the challenges inherent in unwinding long-held supplier relationships. Given the organic growth of supply chains in the 21st century, with their many interconnected elements, this won't come easy. In disengaging from existing sources, organizations can incur losses due to intellectual property (IP) sharing and long-term investment benefits. While carefully considering more ambitious reconfiguration plans, organizations can nonetheless make a few no-regrets moves quickly.

— *Consider targeted vertical integration to build competitive advantage.* Conventional setups that retain production of stable, high-volume products in-house, while using comanufacturers for niche products and special projects, are no longer always the most appropriate options. Instead, investing in fast-moving, low-reliability categories critical to growth may be more important.

— *Increase buffers in the supply chain where needed.* In anticipation of potential supply disruptions, such as input shortages, companies can deploy multisourcing strategies and stock up on raw materials and other inventory. A strategic approach is needed to identify critical inputs and rare raw materials that should be multisourced and stockpiled.

Early sensing and scenario planning

In planning, prediction and forecasting are giving way to deeper, early sensing and scenario planning, with trigger-based escalation and action protocols. Agile, flexible responses are dependent on the visibility of over-the-horizon risks and trends. For end-to-end visibility efforts in the supply chain, including mapping of "tier n" suppliers (those beyond tier two), high-quality data are vital. In the current period of disruption, many more organizations are making these improvements, although tier-n maps remain an underused tool in supply chain management.[7] Greater end-to-end supply chain visibility is critical for defining and enforcing long-term sustainability goals.

Building capabilities in the supply chain organization

Organizations need to invest in building advanced capabilities for navigating disruptions within their supply chains. Techniques for doing this include practicing disruptive scenarios and rehearsing lessons from past mistakes and near misses. Demand sensing and dynamic forecasting require advanced machine learning techniques supported by rounded capability building. As companies prepare to use technology and data to meet variable customer demands, they should provide incentives for in-house talent to work on their supply chain digital teams. Greater clarity on collaboration and competition in the public and private sectors will help make investment choices more predictable and reduce unintended consequences. Competing priorities arise between the need to delink certain supply chain categories while maintaining links between others. A clear rules-based framework for collaboration and competition will help remove uncertainty and improve conditions for long-term investments and resilient growth. Ensuring the inclusion of less developed countries will also be critical in helping them succeed.

[7] "Taking the pulse of shifting supply chains," McKinsey, August 26, 2022.

People, education, and organizational resilience

Tomorrow's organizations need to become significantly more flexible to adjust to economic changes. This will require more decentralized decision making and a new leadership model, one that cultivates talent and self-sufficient teams with on-the-spot knowledge. At the same time, tomorrow's economy will need new skills. Societies and organizations must invest in education, especially early education, to reverse a growing talent gap and reduce social inequalities, while upskilling and reskilling the existing workforce.

Organizational dynamics are changing rapidly as crises and disruptions accelerate. Demographic trends and technological innovation, which date from before the COVID-19 pandemic, have become more pronounced. Labor shortages and skill gaps add to the uncertainty. Speed and agility are demanded, as disruptions require fast changes in strategic direction and allocation of resources, while organizations and their processes and structures are often too rigid to respond effectively.

Where to begin to change the equation? A good place to start is leadership. Public- and private-sector organizations lack needed leadership capabilities. Research shows that in the COVID-19 pandemic and its aftermath, significant numbers of employees in many sectors planned to leave their jobs due to issues with management and leadership. Many efforts at improving the quality of leadership fall short, however, mainly because they fail to embed leadership creation systematically through the organization.

Meanwhile, talent gaps are directly impinging on company growth and public welfare. Three-quarters of companies report talent scarcities and hiring

difficulties, with shortages reaching a 16-year high.[8] McKinsey research calculated that 375 million workers globally will need significant new skills by 2030.[9] At the same time, employees are quitting or planning to quit their jobs in greater numbers than ever before.

The talent supply–demand gap is even wider in low- and middle-income countries, where the pandemic depressed education. According to UNICEF, the share of ten-year-olds unable to understand a simple written text went from 57 to 70 percent during this time, and only 40 percent of youths are on track to attaining secondary-level reading and math skills.[10] This level of poverty in education can imply a $21 trillion loss in potential lifetime earnings. It also suggests that talent shortages are likely to become more acute.

To overcome these challenges, organizations must invest in organizational resilience, matching talent to strategy. This is a proven means to create value. Resilient organizations absorb shocks and turn them into opportunities, "bouncing forward" during crisis times. To build resilience in talent, leadership, and education, organizations need to act on a number of themes:

Promote more flexible and agile organizations

Agile organizations rely on decentralized decision making and self-sufficient, empowered teams. They can respond to disruptions quickly by testing, learning, and adjusting a "good enough" solution. Slower processes of planning and control can follow, but initial work can be done in rapid cycles of exploration, execution, and learning. The governing mindset should be one of discovery, with fewer layers between top leadership and the field of action. This approach depends on a resilient and entrepreneurial middle layer, empowered to make decisions locally, with on-the-spot knowledge.

A flexible talent structure is needed as well. This can be developed through skills mapping to identify talent needs and reallocate the right people as priorities change. Teams should be empowered to make strategic decisions when faced with new or incomplete information while being responsible for outcomes. An important move will be from command to collaboration: from siloed, inflexible, and opaque hierarchies to open, transparent, and collaborative networks with a mindset of partnership. Providing support systems that encourage a virtuous flow of debate and feedback will help teams learn from experience and better adapt to new challenges.

Cultivate adaptable leaders

Organizations need leaders who embrace the new level of uncertainty and complexity. Leadership development should begin with a clear definition of the resilient, adaptable leadership roles the organization needs. Valued qualities include willingness to move forward, making decisions under uncertainty, and a readiness to change direction quickly as circumstances change. For leaders, people skills are perhaps most important: adaptable leaders collaborate and build strong trust-based support networks.

The organization can support its leaders by placing guardrails that challenge biases, protect against overreaction in crises, and keep the focus on the path ahead. Organizations should aim to develop leaders who can go beyond one-dimensional reactions when faced with crises to inspire, support, and unlock potential in others. Leaders are needed who can embrace paradoxes and ambiguity while taking time to listen and coach team members. They should be able to identify opportunities where others see problems, with developed capabilities to manage short-term responses while staying focused on long-term resilience.

[8] "The talent shortage survey," ManpowerGroup, 2022.
[9] Sapana Agrawal, Aaron De Smet, Sébastien Lacroix, and Angelika Reich, "To emerge stronger from the COVID-19 crisis, companies should start reskilling their workforces now," McKinsey, May 7, 2020.
[10] "70 per cent of 10-year-olds in 'learning poverty', unable to read and understand a simple text," UNICEF, June 2022.

Support diversity and inclusion

Diversity and inclusion are now fundamental attributes of successful organizations. The most diverse organizations perform significantly better than the least diverse.[11] Inclusive and diverse workforces and leadership teams foster diverse ideas and encourage the ability to question, change, and think differently. These are priceless capabilities that help organizations adapt and emerge strengthened from crises. Among the workforce, an environment of psychological safety should be cultivated. This allows for creative diversity of thought and collaboration, as people will bring their authentic selves to work. Diverse talent representation is a start, but organizations must go further. Employees need equality of opportunity, achieved through fairness, transparency, and meritocracy.

Build talent management capabilities and continuous skill development

Organizations need to prepare today for tomorrow's skills. Taking a longer-term view of talent management, they should invest in hiring, developing, and retaining talent more effectively. Without abandoning traditional levers for attracting and retaining talent—compensation, titles, and advancement opportunities—organizations can also become more creative. A skills-based hiring approach is a vital way to tap previously overlooked talent pools, for example. Organizations should also invest in upskilling and reskilling their existing workforce, moves that enable flexibility around capacity requirements and capital in a volatile environment. New job profiles will require additional "meta skills," such as cognitive strategies to handle new and rapidly changing information. Successful capability-building programs are founded on a clear understanding of exactly which individuals need which skills to meet organizational goals.

Address the learning crisis

Economies need new skills. Foundational education needs to be broadened to close skill gaps and realize the full potential of the future workforce. As workforce needs evolve with technological changes, some countries and population segments are better situated than others. The education transformation must include precisely the less well-situated developing countries and low-income populations within developed countries to ensure equality and full participation in the global economy.

To ready the future workforce, countries need education systems that will serve the earliest stages of education. Governments participating in UNESCO's World Early Childhood Education and Care conference stressed that universal access to early childhood education was a critical foundation for future learning. The public and private sectors should each bring their unique perspectives to collaboration on education improvements and a skills agenda for the future. Societies and businesses can best succeed by adopting a culture of lifelong learning and supporting both children and adults in formal and informal educational opportunities. Public and private organizations that focus on building resilient leadership and talent can create a virtuous circle of improvement: an adaptable organizational environment will attract needed talent and be better placed for resilience to achieve sustainable growth.

[11] "Diversity wins: How inclusion matters," McKinsey, May 2020.

Healthcare resilience

A multifaceted approach is needed to tackle rising demand, healthcare-supply constraints, and emergency preparedness while ensuring equitable access to care. Leaders must prioritize preventative and holistic healthcare to promote longer high-quality life—an 18-year gap in average life expectancy separates populations in low- and high-income countries. Healthcare capacity and productivity must be increased to bridge the supply gap. The burden of healthcare costs should be reduced by sufficient investment in health education and digital technology.

The COVID-19 pandemic revealed a lack of readiness in the healthcare system and highlighted wider questions of healthcare resilience and long-term sustainability. To build a far more resilient and sustainable healthcare system, the public and private sectors will need to collaborate to overcome a number of challenges, from stress on the healthcare system to vaccine availability and delivery to productivity challenges. The stresses on healthcare systems are expected to increase in coming decades, and the gap between demand and insufficient supply is expected to widen. Demand is expected to increase for a number of reasons, including treatment innovations, increasing life expectancy, an aging population, rising incidence of mental and behavioral disorders, and climate change.

For example, the segment of the world's population over the age of 60 is expected to double, to 2.1 billion, by 2050. This trend will generate considerable added healthcare demand. A further factor is that mental health conditions and substance use disorders increased by 13 percent from 2008 to 2017, according to the World Health Organization (WHO), which also reports that treating those living with depression and anxiety costs $1 trillion annually.[12] These and other challenges are exacerbated by the global shortage of health workers. The WHO estimates a global shortfall of 15 million

[12] "Mental health: Fact sheet," World Health Organization, 2019.

health workers by 2030, mostly in low- and lower-middle-income countries.[13] Leaders dedicated to enhancing healthcare resilience will have to adopt a multifaceted approach, with massive public- and private-sector coordination, that will prioritize preventative and holistic care, expand capacity, improve shock preparedness, and ensure equitable access to care.

Prioritize preventative care and holistic health

Research indicates that by investing in preventative and chronic care, healthcare systems can reduce the global disease burden by 25 percent. Investment areas include improving environmental sustainability, encouraging healthier behaviors, making healthier food and clean water more available, and improving access to vaccines and preventative treatments generally. Technology such as AI, automation, and big data can help in preventing, diagnosing, and treating diseases. These initiatives can provide a positive return on investment: for each dollar invested in improving health, an economic return of two to four times is possible (Exhibit 4).[14]

The economic benefits from health improvements could add trillions of dollars to global GDP by 2040. Healthier populations allow for higher labor force participation and a better overall quality of life. Greater overall availability of preventative healthcare can also help reduce the incidence of mental health disorders. Government and employer-sponsored mental health programs, along with payer coverage of mental health, can increase awareness, reduce stigma, and open access to treatment. Prioritizing preventative and holistic health will increase healthcare system resilience while adding years of higher-quality life for all.

Increase healthcare system capacity and productivity

Societies need to increase the capacity and productivity of the healthcare system and expand the workforce. These improvements will come at a cost, but digitalization and other innovations can reduce the cost burden by up to 15 percent. The causes of workforce shortages differ by country and locality. Weak education pipelines, long recruitment timelines, and compensation gaps between the

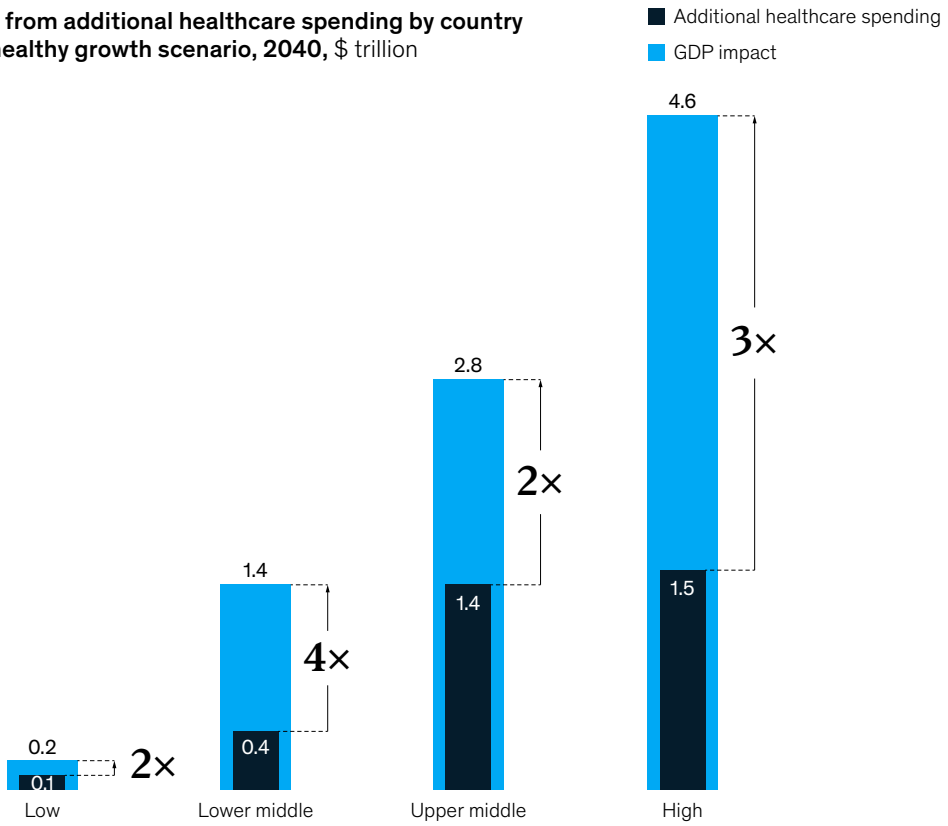
Societies need to increase the capacity and productivity of the healthcare system and expand the workforce.

[13] "Health workforce," World Health Organization, accessed January 28, 2023.
[14] "Prioritizing health: A prescription for prosperity," McKinsey Global Institute, 2020.

Exhibit 4

Healthcare investments improve the quality of life while boosting GDP growth.

Impact on GDP from additional healthcare spending by country income level,[1] healthy growth scenario, 2040, $ trillion



[1]Based on World Bank classification of gross national income per capita: low income = <$1,085; lower-middle income = $1,086–$4,255; upper-middle income = $4,256–$13,205; high income = >$13,205.
Source: Disease Control Priorities 3 (DCP-3), University of Washington, Department of Global Health, 2018; ILOSTAT; Institute for Health Metrics and Evaluation; National Transfer Accounts Project; Tufts Cost-Effectiveness Analysis Registry; "Updated Appendix 3 of the WHO Global NCD action plan 2013–2020," World Health Organization

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public and private sectors are all contributing factors. Another issue is the heavy impact of the COVID-19 pandemic on women workers. In many societies, the burden of childcare (and elder care) disproportionately falls on women. During the pandemic, many women were forced to exit the workforce, including the healthcare workforce.[15]

Given the challenges, five types of actions are needed to expand the public health and healthcare workforces: 1) supporting and retaining the current workforce by equally emphasizing mission and people, 2) meeting evolving capability needs by strategically hiring and training, 3) flexibly extending the workforce with proactive hiring measures,

[15] Amira Ghouaibi and Mbali Motsoeneng, "How to protect healthcare workers—and improve pandemic preparedness," World Economic Forum, June 2, 2021.

4) accelerating healthcare talent development, and 5) training more women to be doctors, nurses, and other healthcare workers, providing equal pay for equal work.

Resistance against future global health crises

Investment is needed now to enhance global resistance against future pandemics. To prepare for the coming threat, health experts and policy makers stress five focus areas for investment. First, build "always on" systems that are ready as soon as an outbreak starts. Second, improve disease surveillance; robust surveillance mechanisms help stop chains of transmission sooner. Third, invest in flexible capacity to prepare healthcare systems to handle surges in demand while still delivering essential services. Fourth, change the epidemic-response agenda from waiting for outbreaks to active prevention. Fifth, build healthcare supply chain capacity across the global south for vaccine and pharmaceutical manufacturing. Research estimates that substantially reducing the impact of future pandemics will require investments of $85 billion to $130 billion over the next two years and approximately $20 billion to $50 billion annually after that. The expenditure equates to an average of about $5 per person per year for the world's population.[16]

Equitable care

Adequate healthcare must be extended to vulnerable populations who are without it. The average life expectancy in the world's high-income countries is 18 years longer than in low-income countries. Within high-income countries, furthermore, the differential can be even greater between richer and poorer population segments. Three sets of actions will be particularly important in addressing health inequities. First, address social determinants of health such as food, housing, transportation, and workplace wellness. These factors can influence up to 70 percent of health outcomes.[17] Second, invest to ensure that innovation in health and healthcare is equitably distributed. Third, work to better engage underserved communities and helping them establish trust-based relationships with healthcare providers; this is vitally important. Reducing health inequity across social groups strengthens healthcare systems and contributes significantly to economic growth.

[16] Matt Craven, Adam Sabow, Lieven Van der Veken, and Matt Wilson, "Not the last pandemic: Investing now to reimagine public-health systems," McKinsey, May 21, 2021.
[17] *Time to act: Investing in addressing social determinants to improve health*, World Economic Forum, 2021.

Digital and technological resilience

Digitalization and technology will be key drivers of long-term productivity gains. They will add agility and speed to organizations. As with all innovation, these efforts will be highly iterative and fast changing. It is nonetheless important that leaders develop a long-term perspective on the growth impact of the changes, identify seed opportunities, and develop a portfolio approach to growth. Technology will be a key driver of change in all resilience areas—especially in the energy transition, education, healthcare, and supply chains. Disruption and risk resulting from technological transitions need to be managed. Action areas here will include cybersecurity, where threats continue to proliferate, and societal advocacy. Societal objectives include ethical parameters protecting personal privacy as well as the promotion of inclusivity and the eradication of the digital divide. The International Labour Organization estimates that achieving universal broadband coverage means connecting three billion people who have never used the internet. This action alone could create 24 million new jobs worldwide, including millions of jobs for young people.

The productivity growth that digitalization and technology have enabled over the past few decades is set to continue as a new wave of technologies—from AI to big data to automation—creates the possibility of driving continued leaps in productivity. This wave of productivity growth also offers potential paths for economies to grow without proportionate increases in carbon consumption. However, not all institutions are set up to take advantage of these innovations and navigate them in a way that enables competitive advantage.

Investment in AI, big data, and automation

Given the complexity of today's technology landscape, public-sector organizations and private companies can find it challenging to make decisions concerning technology ownership. For each organization, some technologies should be owned while others would better be outsourced or developed in open-source environments. Ensuring access to the right talent and nurturing innovation successfully across remote work and in-person preferences can be challenging for many organizations. AI replaces advanced skills, so the impact of these innovations on society can be challenging or even undesirable. Strategies to train workers in higher-level skills and provide alternative careers are needed to prevent sections of the workforce from becoming disadvantaged and suffering a loss in living standards. Governments can benefit from a more nuanced approach to technology investment—the idea is to maintain flexibility without disproportionally draining capital, increasing dependencies, or exposing the organization to excessive risk.

New risks and dependencies

The rapid adoption of new technology can add new risks and dependencies. Cybersecurity breaches can come with technology innovation and adoption. In a 2022 survey, 57 percent of executives reported at least one data breach in the previous three years; 42 percent reported financial losses.[18] Organizations, both public and private, can mitigate cybersecurity risks with effective strategies. Governments and private-sector cyber leaders can learn from one another to create the security organization of the future. To manage tech risks effectively, including the dependencies they create, governments should collaborate with the private sector on strategic planning. Technology will be one of the biggest economic development factors and can be affected significantly by geopolitical trends. Policy makers should provide guidance to the private sector on acceptable dependencies versus those that should be reduced. Optimal guidance should be undertaken as a public–private collaboration using scenario-based planning. As parameters are set, policy makers can support innovation through policies and funding.

Societal impact, ethics, and inclusivity

Companies and policy makers need ethical frameworks for technology adoption, which take into account societal impact and inclusivity. New technology frequently raises questions with social implications, such as access or privacy rights. Companies can move beyond merely complying with regulations by developing their own ethical frameworks to address evolving issues, such as data privacy and the application of AI. Policy makers should establish clear ethical rules for societal impact. Regulation in relation to data privacy, the ethical use of AI, and digital inclusion should protect society while helping guide governments and private-sector organizations. Another problem is that technology improvements in business and society primarily benefit wealthier population segments. Policies that aim to equip all of society with the tools and capabilities needed to share in economic gains can make a difference. They must ensure that education systems for children, youth, and adults are well funded and adapted to the needs of the future. The workforce of the future will need new skills, and special care and attention should be devoted to historically underserved segments to ensure that they are adequately represented in all reskilling programs. Economic development activities generally should be led from a perspective of equity.

[18] Jim Boehm, Liz Grennan, Alex Singla, and Kate Smaje, "Why digital trust truly matters," McKinsey, September 12, 2022.

Four resilience enablers

Organizations taking action within the resilience themes must support their initiatives with four resilience enablers.

New resilience leadership and organizational capabilities

Organizations must strengthen their crisis management capabilities while also developing the mindsets and capabilities needed for foresight, preparation, response, and reorientation.

Look beyond the short term and address the long term

Short-term, day-to-day interventions and management are always necessary for addressing immediate issues, some of which, such as pandemics and supply disruptions, can be of considerable severity and duration. However, responses to arising issues will not sufficiently address longer-term uncertainties and disruptions. Challenges such as extended geopolitical tensions and shifts in customer demand, labor availability, and skill gaps require organizations and leaders to tackle long-term challenges even as they mitigate short-term impact.

Move past continuous-crisis mode to alleviate organizational exhaustion

It is not uncommon for leaders and their teams to become exhausted by extensive periods of "firefighting" and crisis management—a phenomenon exacerbated in recent years by an unprecedented wave of disruptions. Developing efficient approaches to mitigating and adapting to uncertainty and disruption (over and above the traditional task force structure) will help address this problem. This entails more than freeing management capacity to deal with crises. Leaders must also make room for discussions about potential future states as they develop strategic plans to prepare for events over the horizon.

Develop a new resilience leadership mindset

This involves defining strategies to weather uncertainties and embracing the challenges of the

evolving environment. Leaders need to communicate an inspiring and ambitious future vision of life beyond the crisis. Where action is needed, top management should act decisively and swiftly, reallocating resources as needed. Constant renewal, idea generation at a fast pace, agility, adaptability, resilience, and innovation are the principal determinants of success. Where uncertainty remains high, optionality and the timing of decisions will be important.

Embed resilience thinking within the organization
This includes many functional areas, such as supply chain management and sourcing, data and technology, R&D, production, and sales. Capabilities that increase flexibility to work in the face of rising levels of uncertainty are especially desirable. For example, supply chain management can move beyond global sourcing focused only on cost optimization; R&D and technology can explore a broader portfolio of potential future technologies; sales can consider regionalization of market access. In addition, organizations must strive to replace isolating, siloed structures with more horizontal, cross-functional design to better align procurement, production, and sales against geopolitical challenges.

A holistic resilience framework to extend foresight capabilities and analytical support
Leaders need more high-quality information to anticipate potential disruptions, interpret evolving uncertainties, and make better decisions to navigate disruptive events. This requires a wide frame of reference, extending beyond immediate supply and distribution markets to consider geopolitical, technology, and societal factors. Supply chain impact, business opportunities, climate change, the energy transition, social standards, and customer demand are all of particular importance. Organizations should undertake robust scenario testing of the elements of the business model, making impact assessments within shorter time frames than the typical budgeting cycle.

Effective resilience leadership balances short-term imperatives alongside long-term needs across all relevant policy areas.

Leaders will likely wish to consider a greater variety of scenarios beyond the traditional upside-downside perspective. A holistic resilience framework can assess resilience capabilities as well as improvement areas (Exhibit 5).

Similarly, policy makers and public-sector leaders can strengthen and embed resilience leadership and capabilities within government and public institutions. The public-sector resilience framework maps capabilities and improvement areas (Exhibit 6).

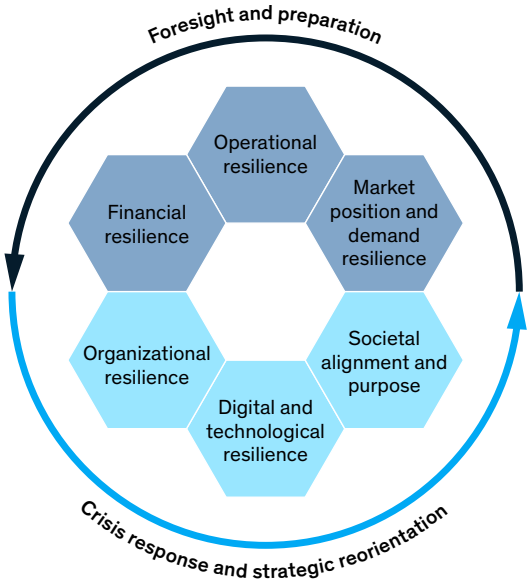
Set a long-term, holistic resilience agenda

The public agenda can frequently be dominated by competing short-term political concerns within tight public-expenditure constraints. Effective resilience leadership balances short-term imperatives alongside long-term needs across all relevant policy areas, including geopolitics, the environment, socio-demographic issues, technology disruptions to critical infrastructure, trade and supply chain dependencies, industrial policies, healthcare, education and labor, and national security. Importantly,

Exhibit 5

In the private sector, a holistic resilience framework can assess resilience capabilities and improvement areas.

Private-sector resilience framework



Resilience capabilities

- **Foresight:** information gathering and dashboard; scenario planning; stress testing
- **Preparation:** risk reduction; resilience agenda setting based on scenario planning
- **Disruption and crisis response:** crisis response task force; long-term change programs; communications capabilities; scalability of response
- **Strategic reorientation:** self-examination capability; implement lessons; adapt and embed strategy dynamically

Resilience action areas

Financial resilience	Operational resilience	Market position and demand resilience	Societal alignment and purpose	Digital and technological resilience	Organizational resilience
Access to capital; debt-to-liquidity ratio; projected revenue	Ratio of offshore to onshore in supply chain; time supply chain can function on domestic resources; ratio of domestic to international workforce	Alignment with consumer price sensitivity and preferences; time to market; R&D expenditure to capability yield; business model adaptability	Stakeholder representation in governance; ESG[1] accreditation; employer inclusivity accreditation; workplace safety accreditation; living wage; brand perception	Cybersecurity; system coverage rate; fitness for purpose; malware scanning and security conformance; frequency and severity of outages; time to resolution	Agility of business units; access to talent; workforce turnover; clarity of roles and responsibilities

[1]Environmental, social, and governance.

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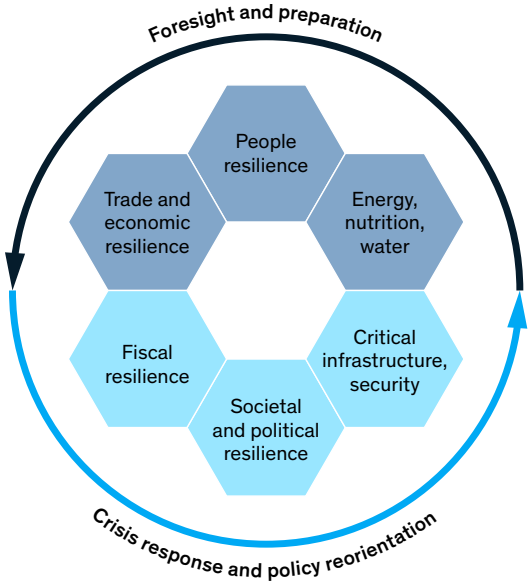
Exhibit 6

The public-sector framework helps leaders embed resilience leadership and capabilities in government and public institutions.

Public-sector resilience framework



Resilience capabilities

Foresight: information gathering and dashboard; scenario planning; stress testing

Preparation: cross-ministry implementation teams by resilience topic; policy agenda setting based on scenario planning

Disruption and crisis response: crisis response task force; long-term change programs; communications capabilities; scalability of response

Policy reorientation: integrated view across all levels; implement lessons; adapt and embed strategy dynamically

Resilience action areas

Trade and economic resilience
Economic stability; GDP growth; inflation; inequality; ease of doing business; innovation and R&D yield

People resilience
Access to education; graduation rate (primary and secondary); access to skilled labor; access to healthcare; healthcare quality index; healthcare affordability

Energy, nutrition, and water
Domestic energy production share; diversified energy sources; share of renewables; internal production of staple foods; water security

Transport and infrastructure
Rail, road, and airport connectivity; mitigation for temperature and sea level change

Climate and environment
Carbon footprint; availability of resources; performance on climate and nature commitments

Fiscal resilience
Debt-to-GDP ratio; access to capital

Societal and political resilience
Inclusiveness; quality of social support system; social, gender, and racial-ethnic inequality levels

Geopolitical resilience
Human rights; rule of law; internal security; external defense

Public trust
Governmental transparency; judiciary independence; anticorruption measures

Political stability
Availability of essential services; quality of policy formulation

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Driving a resilience agenda will require collaboration across ministerial departments as well as international alignment.

resilience leadership needs to be apparent at all levels: regional and local government, private corporations and state-owned businesses, and nongovernmental organizations (NGOs) and community organizations. Given interdependencies across countries, resilience agendas need to be internationally aligned, at least at the intergovernmental level.

Define resilience as a distinct policy area with a central stakeholder

Driving a resilience agenda will require collaboration across ministerial departments as well as international alignment. Currently, the resilience agenda is usually set in individual policy areas, with cross-collaboration often confined to emergencies (such as the COVID-19 pandemic), energy crises, and natural disasters. Local, state, regional, and national governments would be well advised to engage in active dialogue with the private sector. This requires a central stakeholder with access to government leadership at the highest level (president, prime minister, or chancellor). This central stakeholder will benefit from an integrated view of all levels: at the center of government, across individual agencies, and at regional, city, and local levels. At the center of government, the stakeholder can develop a whole-of-government, whole-of-society perspective to avoid contradictory policy choices at varying levels of the system.

Establish systematic foresight intelligence and scenario analysis

Enhance the preparedness muscle, including through systematic foresight intelligence, scenario analyses, and review of resilience capabilities. Governments and public-sector organizations have several ways to train their preparedness muscle for potential crises. Harnessing data and analytics, they can develop robust economic data systems to explore events on a systemic basis, using scenario planning and risk-benefit analysis to help identify how best to support local economies, firms, and vulnerable communities. They can implement risk registers and vulnerability assessments, as the United Kingdom and Singapore have done, to assess potential disruptions while creating preparedness plans within all agencies. To avoid simply being reactive, better anticipate the implications of disruptive events, and proactively mitigate crises, governments can work across policy areas, translating information into scenarios for stress testing. Governments should also systematically review their crisis management capabilities against such scenarios and seek to define longer-term resilience plans.

Resilience funding

Building resilient companies and societies that ensure sustainable and inclusive growth will require large capital investment from both the public

and private sectors. Actions within each of the six resilience themes demand significant resources: achieving the global transition to carbon neutrality by 2050, for example, will require annual expenditures equivalent to 7.5 percent of world GDP on physical assets for energy and land-use systems.[19] The need to prepare for and address uncertainties, including disruptive, low-probability, high-impact events, will add even more to resilience funding requirements. Resilience investment, however, leads to positive outcomes. Adaptation measures are usually less costly than recovery measures and lead to a faster recovery from an unforeseen event. The Global Commission on Adaptations estimates that spending $800 million on early-warning systems in developing countries could reduce climate-related disaster losses by $3 billion to $16 billion per year.

Despite the benefits and the pressing need for resilience funding, resilience efforts currently remain underfunded. On the one hand, current levels of indebtedness in developed countries raise questions about funding sustainability, with government debts over GDP peaking above 100 percent and private indebtedness with little room to maneuver

Exhibit 7

High indebtedness or low access to finance will make it difficult for many countries to fund resilience.

Indebtedness levels Low High

Financial and fiscal dynamic	Country	Public debt[1]	Private debt[2]	Finance access[3]	GDP per capita, $	Population, millions
High access to finance; high private and public indebtedness	France				43,659	68
	US				70,249	332
	Japan				39,313	126
High access to finance; low public and high private indebtedness	China				12,556	1,412
	Switzerland				91,992	9
	Norway				89,154	5
High access to finance; low–medium public and private indebtedness	Israel				52,171	9
	UAE				44,316	9
	Poland				18,000	38
Medium access to finance; medium–high public and private indebtedness	India				2,257	1,408
	Thailand				7,066	72
	Brazil				7,507	214
Low access to finance; low public and private indebtedness	Nigeria				2,066	213
	Congo				577	96
	Türkiye				9,661	85
Low access to finance; high public indebtedness	Argentina				10,636	46
	Egypt				3,699	109
	Ghana				2,363	33

[1]Total stock of debt liabilities issued by the general government as % of GDP (except Argentina and Ghana, where central government was used); low: 0 to 50%, middle low: 50 to 75%, middle high: 75 to 100%, high: >100%.
[2]Total stock of loans and debt securities issued by households and nonfinancial corporations as % of GDP; low: 0 to 50%, middle low: 50 to 125%, middle high: 125 to 200%, high: >200%.
[3]S&P credit ratings; low: D to B, middle low: BB- to BBB+, middle high: A- to A+, high: AA- to AAA.
Source: International Monetary Fund; World Bank; McKinsey and World Economic Forum analysis

McKinsey & Company

[19] "The net-zero transition: What it would cost, what it could bring," McKinsey, January 2022.

above 200 percent levels (Exhibit 7). On the other hand, developing countries face the greatest asymmetry between resilience-funding need and supply. Currently, capital is not flowing at the speed required. For example, according to the United Nations, combined adaptation and mitigation finance flows in 2020 fell at least $17 billion short of the $100 billion pledged to developing countries.[20]

To capture those benefits and meet the global need for substantial resilience, inclusive and innovative funding solutions are needed. The following actions can help:

A long-term cost-benefit view of resilience

Developing scenarios and quantitative stress testing of disruptions (versus deterministic situations) to create credible finance priorities and plans will facilitate an understanding of growth option values, as well as downside mitigation measures such as vaccination campaigns and climate-adaptation investments. Cost-benefit analysis offers the transparency and information needed to raise funds. This empirical approach needs to be taken at the country, sector, company, and individual levels to maximize its potential as a resilience lever. Besides scenarios and stress testing, the public and private sectors should work on developing early-warning systems to monitor and predict future events that enable them to react quickly and effectively to new disruptions.

Increasing financial and fiscal capacity for resilience

New mechanisms are needed that ensure sufficient capital flows toward resilience projects. First, frameworks to encourage private-capital flows have to be created. Public institutions do not have the stand-alone capacity to fund the large capital allocation needed to achieve resilience and will therefore have to play a key role in enabling private capital to flow at the required scale and time. Three main gaps are preventing private investments from happening: lack of country-level data, lack of clarity on where investments are needed, and low perceived returns on investment. The gaps are even higher for developing countries. Public institutions can play a role by addressing these barriers through legal frameworks and subsidies to reduce risk and facilitate new funding, which in turn results in GDP expansion. This will help attract capital for all those projects that will yield a positive return. Additional public intervention will be required to attract private capital for underfunded areas where business models are less proven. A clear example is climate adaptation finance, where only 1.6 percent of funding comes from private investment. Governments can consider ensuring sufficient fiscal capacity to take on the risks private insurance is unable to cover without government intervention. With growing risks, governments will have to increase income to not incur fiscal imbalances when intervening.

Second, new capital markets and insurance structures are required both to ensure financing supply and to develop mitigation actions of last resort.[21] Similar to green and social bonds, new structures such as “broader resilience bonds” and “catastrophe bonds” can be explored as a source of funding and risk mitigation. Additionally, the ability to value carbon liquidity is an important enabler of net-zero and asset-decarbonization financing. Carbon markets could play a role as a financing mechanism: besides encouraging companies to lower CO_2 emissions, carbon markets can reduce the cost of implementing nationally determined contribution (NDC) goals by more than half. Although the situation is unsettled now, carbon trading hubs are beginning to be developed (for example, Saudi Arabia launched a carbon offsets trading platform, and the Malaysian government announced its intention to set up a voluntary carbon market in 2023).

Economies and populations with fewer financial resources will need more support

Capital flows to developing economies can be ensured by developing and fulfilling international commitments to support the most vulnerable in line with pledges, for example, in energy adaptation and education access. Notably, the cost of ensuring

[20] *Adaptation gap report 2022: Too little, too slow: Climate adaptation failure puts world at risk*, United Nations Environment Programme, 2022.
[21] Swiss Re has shown the critical role insurance will play in maintaining resilience as the global economy undergoes fundamental changes; see “Maintaining resilience as a new world order takes shape,” Swiss Re Research Institute, September 9, 2022.

Developing a resilience muscle may require a hefty investment up front, but investing the appropriate amount, and doing so now rather than later, will result in high payoff.

inclusive and equitable quality education will require annual spending of more than $500 billion; since the COVID-19 pandemic further restricted education access, the funding gap could increase for a time by $200 billion yearly.

To maximize the impact of transferred capital in developing countries, funds should be directed to the core of the economy. Emphasis should be placed on small and growing businesses, which can generate up to 70 percent of GDP, as well as on more vulnerable population segments. This will require accelerating financial inclusion. Globally, 1.4 billion adults still do not use a financial institution. Developing a resilience muscle may require a hefty investment up front, but investing the appropriate amount, and doing so now rather than later, will result in high payoffs that more than recoup the cost of investment. The benefits of resilience funding have always outweighed the costs, but as disruptive global events become increasingly frequent, the value of resilience funding will only increase as time passes.

Sustainable economic development

Economic development contributes centrally to national resilience and a country's ability to prevent or withstand and quickly recover from major disruptions. Poor economic structures undermine resilience. When faced with demand shocks, supply shortages, inflationary spikes, or social crises, a country with weaker economic structures can suffer up to twice the annual loss in output, on average, compared with a country with strong economic institutions. Superior economic development increases resilience through sustained growth and sound fiscal policy. Such a model provides financial resources to promote equitable achievement and empower lower-income households with higher-income opportunities while adhering to climate goals and developing natural resources sustainably. Leaders and governments seeking to enable sustainable and inclusive economic development will have to address several substantive challenges:

Rising disparities and inequitable growth create global systemic vulnerabilities

Global growth has tripled over the past two decades, but this growth has not been equitable. The richest 1 percent of the global population captured 38 percent of global wealth accumulated over the past two decades.[22] Seven out of ten people live in countries where income inequality is growing. Rising income inequality is reflected by the gap between the average incomes of the top 10 percent of individuals and the bottom 50 percent—a gap that has expanded many times over in recent decades. In the United States, the median wealth of White families expanded by more than 50 percent from 1992 to 2016, reaching a level ten times that of Black and Hispanic families, whose wealth remained essentially unchanged during this period. Recent research

[22] *World Inequality Report 2022*, World Inequality Lab, 2021.

suggests that this gross disparity will cost the US economy at least a trillion dollars in lost consumption and investment in the next decade.[23] The impact of rising inequality within countries manifests in five areas: worse health outcomes; impaired social cohesion; lower human-capital development, literacy, and innovation; restricted economic progress; and higher sustainability barriers.[24]

A global affordability crisis

The costs of basic necessities are rising and absorbing a growing share of falling household purchasing power. Housing is the largest spending category, accounting for 24 percent of household consumption. In a sample of 22 member countries of the OECD, housing costs rose by an average of 21 percent from 2002 to 2018. Education costs went up even faster, by 5 percent, while healthcare costs increased by 10 percent. In combination, these rising costs have eroded household income by up to 29 percent, putting more families and communities in a vulnerable status. An analysis by the United Nations Development Programme of 159 developing economies estimates that price spikes in key commodities are having devastating effects on the poorest households: 71 million people in these countries have fallen into poverty in just three months as a direct consequence of surges in global food and energy prices.[25]

Developing economies are vulnerable to disruptions and have greater difficulty recovering from them

The main obstacles to increased resilience and recovery capacity are overconcentration in specific industries or value chains, rigidities in labor markets, weak social safety nets, and a high proportion of youth unemployment—conditions that impede the entry and development of small and medium-size enterprises (SMEs) and the quality of government services and institutions. To address these challenges, economic development leaders should coordinate action in five areas:

1. *Reduce housing, healthcare, and energy costs through scalable interventions.* Economic development leaders should strike a balance between direct subsidies to bridge the gaps to the most vulnerable in the immediate term and interventions that reduce costs in the long run. Initiatives across four dimensions can lower the cost of affordable housing by 20 to 50 percent[26]: finding available land and adapting land-use regulations, reducing construction costs through value engineering and industrial approaches, increasing operations and maintenance efficiency, and decreasing financing costs for buyers and developers. Healthcare affordability initiatives should focus on using technology such as automation and AI to reduce administrative expenses and promoting preventative care that lowers long-term costs. Energy affordability initiatives should prioritize investments that lower the costs of renewable energy sources and electrification.

2. *Build a resilient youth workforce.* Young people are three times more likely to be unemployed than older adults, with the global count of unemployed youth reaching 73 million in 2022. The issue of youth unemployment is particularly pressing for developing economies, where 90 percent of the world's young people reside. Economic-development leaders should focus on policies, programs, and investments that increase access to early education, target market-relevant skills development, and enhance the socio-occupational orientation of youth. McKinsey research suggests that increasing enrollment in early childhood education and reskilling and upskilling existing

[23] Noel Nick, Duwain Pinder, Shelley Stewart, and Jason Wright, "The economic impact of closing the racial wealth gap," McKinsey Institute for Black Economic Mobility, 2019.
[24] Kate Pickett, "5 reasons why we need to reduce global inequality," World Economic Forum, September 22, 2015.
[25] "Global cost-of-living crisis catalyzed by war in Ukraine sending tens of millions into poverty, warns UN Development Programme," UNDP, July 7, 2022.
[26] "A blueprint for addressing the global affordable housing challenge," McKinsey Global Institute, 2014.

workers in the Middle East, North Africa, and Pakistan region, which is home to more than 200 million youth, could boost annual economic output by nearly $200 billion by 2040.[27]

3. *Enhance productivity in an inclusive future of work.* Productivity enhancements can be achieved through balanced investments in technology and an inclusive future of work. Investments in technology, such as automation, AI, and universal broadband, can fuel dramatic productivity improvements. The International Labour Organization estimates that achieving universal broadband coverage by 2030 would connect three billion people who have no internet access and could create 24.0 million new jobs, including 6.4 million jobs for young people. Furthermore, the International Telecommunication Union's economic model projects that a 10 percent increase in broadband penetration could lead to an increase in GDP per capita ranging from 1.6 to 2.0 percent in low- and middle-income countries. To ensure inclusive growth, technology innovations need to be balanced with labor measures, such as reskilling and upskilling workers affected by these disruptions. Wide-scale global investment in reskilling and upskilling workers to transition into emerging jobs could add $5 trillion to global GDP by 2030.

4. *Support small businesses.* SMEs represent about 90 percent of businesses and more than 50 percent of employment worldwide, making them a foundational asset for resilient economies. Economic-development leaders should focus on three key initiatives to support small businesses: access to financing, capability building, and scale-up programs. For example, in Morocco, a public–private partnership for building functional capabilities generated economic returns equal to about 1.5 percent of national GDP.

5. *Improve the investment environment.* A favorable investment environment is crucial for attracting productive private investments—a critical driver for growth and poverty reduction. According to the World Bank, governments can create a favorable investment climate by improving government effectiveness, including regulatory quality, and reducing corruption. An analysis of 80 countries showed a significant improvement in economic growth from

With the right partnerships and risk-sharing models, public–private collaborations can bridge the gaps for budget constraints, expertise, and innovation.

[27] "Opportunity Youth: Imagining a bright future for the next generation," McKinsey, August 2021.

increasing government effectiveness; one unit increase in the Government Effectiveness Indicator led to an increase in the real GDP growth rate of 0.68 percentage points.

Public–private collaboration

Building resilient economies would be one of the most capital-intensive endeavors the world has seen. The global infrastructure spending gap alone is projected to be $5.5 trillion annually between 2017 and 2035. With the right partnerships and risk-sharing models, public–private collaborations can bridge the gaps for budget constraints, expertise, and innovation while becoming good investment opportunities that maximize resilience outcomes for society. The unprecedented public and private actions during the COVID-19 pandemic have provided evidence of innovative partnerships across areas where building resilience is crucial.

Public–private collaboration does present challenges that global leaders need to consider. Thus far, global public–private projects addressing large-scale resilience issues have been rare. The Oxford–AstraZeneca COVID-19 vaccine effort was a good example of the kind of partnership the resilience agenda seeks to encourage in all resilience areas.[28] Public–private collaboration is usually focused on nonsocial sectors and heavy infrastructure. The need is growing, however, to increase resilience in social dimensions as well, including education, skills development, and healthcare. Globally, public–private projects in the social sector formed only 5 percent of projects financed in the past 15 years. A further point is that large public- and private-sector collaborations involving governments and large organizations receive most of the funding and attention. Smaller-scale projects addressing underserved populations are also collectively important. These projects ($10,000 to $50 million in size) typically last two years and today form 40 percent of the reported global public–private project deals.

There are four key challenges in maximizing the value of public–private projects across their life cycle: lack of a consistent portfolio of projects aligned with national development plans, inefficient prioritization of projects, ineffective project pipeline management, and misallocation of risk between public and private entities. Public–private projects that do not overcome these challenges face cost overruns, delays, and increased complexity—and can fail.[29]

To address these challenges, global leaders must take coordinated action to drive public–private collaborations that increase long-term resilience:

1. *Create a global resilience agenda powered by a pipeline of scalable public–private projects*. To build resilience, leaders will have to come together to fund a pipeline of projects that collectively address shared resilience vulnerabilities and needs. The most pressing resilience challenges—such as energy security, food availability, and air quality—must be addressed on a global scale.

2. *Develop innovative collaboration models.* These need to be established to scale up public–private resilience partnerships across a broad variety of sectors and stakeholders. The needed innovation should be based on proactive approaches, in which government and private-sector leaders collaborate in partnerships that anticipate longer-term needs. Development and dissemination of standards could help national procurement authorities maintain competition while protecting the IP of the solicitors. Collaboration models that cut across several sectors and asset classes are also needed, pulling public- and private-sector expertise across the entire resilience value chain. Instead of building a simple waste-treatment plant, for example, government agencies and private-sector companies could collaborate to provide integrated waste-to-energy solutions. Integrated value propositions can

[28] "Public-private alliance drives historic vaccination programme," World Economic Forum, March 10, 2021.
[29] Frank Beckers and Uwe Stegemann, "A smarter way to think about public–private partnerships," McKinsey, September 10, 2021.

enable better outcomes and increased scalability by enhancing project replicability and sustainability. More potential and opportunities to scale public–private projects can be derived by involving local and municipal organizations. Actions could include ensuring sponsorship from local government; building capacity and providing dedicated local support; engaging local investors, sponsors, and technical partners; ensuring local coordination; and exploring nontraditional sectors and new asset classes, such as municipal infrastructure agencies.

3. *Create innovative measurements to capture value.* To unlock the potential of public–private collaboration on resilience themes, leaders will need to create innovative measurements that can truly capture value. For example, international financial institutions active in the public–private collaboration space could develop natural capital- and wealth-accounting principles, helping governments integrate them into value-for-money assessments while preventing poor practices such as greenwashing.
4. *Ensure excellence in public–private project implementation.* This requires an enhanced focus on five actions: careful early selection of projects; structuring risk allocation based on successful global precedents of public–private projects; effective government-stakeholder engagement; maximized value extraction from the engagement; and simplified payment mechanisms and timely payments. The effectiveness and efficiency of any project is most often determined by finding the optimal level of private-sector participation, risk transfer, and incentive alignment. Policy makers should align with the private sector on how to consider and price risks across the entire life cycle of a project and how to align incentives, with a particular focus on potential commercial and financial effects. This would make private-sector expertise in commercial and financial risk management available to the public partner while providing the right level of incentives to ensure a successful outcome, generate efficiency gains, and capture value.

Conclusion: A call to action

The World Economic Forum, with McKinsey & Company, has presented in this paper the first integrated view of the resilience agenda. It is hoped that light has been shed on the crucial resilience areas where transformative efforts must focus, as well as on the enablers that will facilitate this. Indeed, this agenda points to a global public–private sector undertaking on a scale not seen in a long time. The recent confluence of crises and disruptions, however, demands nothing less. The world must act now on this agenda, building on the collective momentum of recent ongoing work by many organizations to repair and improve societies and economies.

It is crucial to acknowledge the Resilience Consortium, which brings together leaders from the public and private sectors committed to building resilience globally and across regions, economies, and industries. New members are encouraged to join this effort. Now is indeed the time for action. The decisions and financial commitments made today will determine the future course of the planet, economies, and societies. With the resilience agenda, policy makers and business leaders together can seize opportunities and act to realize sustainable, inclusive, and long-term global growth.

About the authors

McKinsey & Company

Rima Assi
Senior partner, Dubai

Richard Bucci
Senior editor, New York

David Frances
Partner, Mexico City

María del Mar Martínez
Senior partner, Madrid

Mihir Mysore
Partner, Houston

Alfonso Natale
Partner, Milan

Daniel Pacthod
Senior partner, New York

Thomas Poppensieker
Senior partner, Munich

Sven Smit
Senior partner, Amsterdam

Michael Thun
Senior expert, Munich

Andreea Zugravu
Partner, Dubai

World Economic Forum

Andre Belelieu
Head, Insurance, Asset Management and Institutional Investors

Andrej Kirn
Head, International Organizations and Humanitarian Agenda

Miriam Schive
Deputy head, International Organizations and Humanitarian Agenda

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