

*Viewpoint*

# BUILDING NATIONAL RESILIENCE

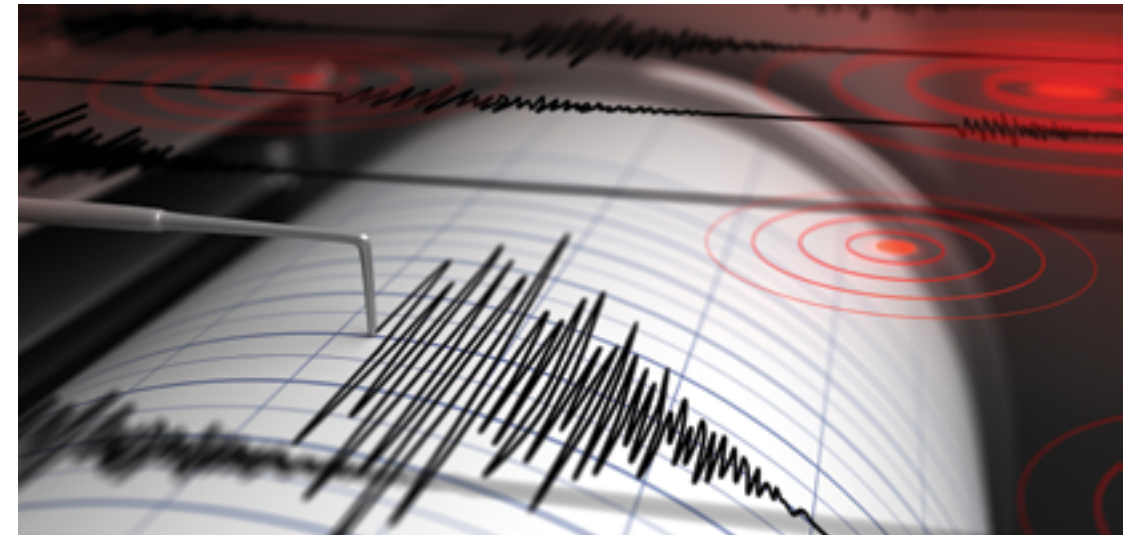
SURVIVE CRISIS, SEIZE OPPORTUNITY,  
PREPARE FOR CHANGE

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# RESILIENCE IN CONTEXT



The statistics make for grim reading: at least one disaster occurs every single day, impacting lives or economic growth, often with grave consequences. Indeed, regardless of today's technological, economic and scientific advancements, nations the world-over find themselves vulnerable to all manner of threat—be they inflicted by Mother Nature, cyber criminals or rogue traders. As a result, countries large and small are frequently rendered unable to manage the increasingly complex level of risk that accompanies life in our equally complex age. Against this backdrop, national resilience has become a strategic imperative on the agendas of national governments around the globe—not least, those of the GCC.

Like all other nations the world-over, the countries of the Arabian Gulf have to consider just how well-prepared they are to withstand the threats that now exist. With no room for complacency, each country—city even—needs to analyze the distinct threats it faces, as well as those it shares regionally and globally.

To this end, there are lessons to be learned from Japan—a country that came to understand the importance of resilience the hard way. When the country was rocked by the Tohoku earthquake in March 2011, the cascade of events that followed overwhelmed its ability to respond.

The earthquake sparked a 15-meter tsunami, which flooded the Fukushima Daiichi Nuclear Plant, disabling the emergency generators that were crucial to power

the cooling of the reactors. The result was three nuclear meltdowns, release of radioactive material and the tragic loss of 20,000 lives along with vital infrastructure. Such was its impact, the International Nuclear and Radiological Event Scale ranked the disaster a 7, the highest possible ranking. The only other nuclear disaster to receive the same status was Chernobyl in 1986.

Japan's government failed to anticipate the magnitude of the earthquake and therefore did not institute the measures that would have saved lives. One of the three reactors that melted down was nearly 40 years old and should have been decommissioned, and the concrete seawalls in the Japanese city of Sendai were only three meters tall.

In the face of such tragedy, it begs the question why the events of 2011 were allowed to unfold. Surely highly-developed Japan was well-prepared to manage natural disasters. The palpable sense of incredulity at the devastation was perhaps summed up best by The Fukushima Nuclear Accident Independent Investigation Commission: "How could such an accident occur in Japan, a nation that takes such great pride in its global reputation for excellence in engineering and technology?" What's more, if this kind of institutionalized risk complacency could happen in a technologically advanced nation like Japan, then the risks of such an event are magnified for nations that are less well-resourced.

<sup>1</sup> 'Annual Disaster Statistical Review 2014', Université Catholique de Louvain – Brussels, Belgium

<sup>2</sup> 'Fukushima, Chernobyl and the Nuclear Event Scale', Nuclear Energy Institute, Summer 2011, [www.nei.org](http://www.nei.org)



# NATIONAL RESILIENCE UNPACKED

3 Walker, B. & Salt, D., Resilience Thinking: Sustaining Ecosystems and People in a Changing World, Island Press, 2006

4 'Reviews of Risk Management Policies: Boosting Resilience through Innovative Risk Governance', OECD, 2014

To trace the roots of this catastrophic chain of events, we must first understand the concept of national resilience. That is, a nation's ability to survive ongoing calamities, seize existing market opportunities, and prepare against any catastrophic events or periods of change. Indeed, to understand events like Fukushima, we must accept that a country's resilience is founded not just on its ability to deal with chronic stresses or acute shock, as in that case, but also on its ability to prevent and manage risks in a changing world. As Brian Walker and David Salt, authors of the book Resilience Thinking: Sustaining Ecosystems and People in a Changing World, state: "By understanding how and why the system as a whole is changing, nations are better placed to build a capacity to work with change, as opposed to being victim of it."

Nations that master the art of resilience rapidly adapt and respond to internal and external events and, crucially, continue

operations when hit by disasters or calamities. Yet, while possible to manage, the size and varied nature of the existing threat landscape should not be underestimated.

The threats to nations are diverse (Figure 1); natural disasters, economic crises, acts of terrorism and other such disruptions present serious risks to national growth and stability. Though the impact can be unquantifiable in some cases, OECD data indicates the negative consequences from a major event can be equal to 20 percent of a country's GDP. In fact, the damages from such disruptive events have been estimated at US\$1.5 trillion over the last 10 years in countries within the Organisation for Economic Co-operation and Development (OECD) bloc, as well as the so-called BRIC countries: Brazil, Russia, India and China. If more motivation were needed for governments to make national resilience an integral part of their strategic agendas, this is it.

## ECONOMIC

- ASSET BUBBLE IN A MAJOR ECONOMY
- DEFLATION IN A MAJOR ECONOMY
- FAILURE OF A MAJOR FINANCIAL MECHANISM OR INSTITUTION
- FAILURE/SHORTFALL OF CRITICAL INFRASTRUCTURE
- FLASCAL CRISIS IN KEY ECONOMICS
- HIGH STRUCTURAL UNEMPLOYMENT OR UNDEREMPLOYMENT
- ILLICIT TRADE (EG: ILLICIT FINANCIAL FLOW, TAX EVASION, HUMAN TRAFFICKING, ORGANIZED CRIME, ETC...)
- SEVERE ENERGY PRICE SHOCK (INCREASE OR DECREASE)
- UNMANAGEABLE INFLATION

## ENVIRONMENTAL

- EXTREME WEATHER EVENTS (E.G. FLOODS, STORMS, ETC...)
- MAJOR BIODIVERSITY LOSS AND COLLAPSE (LAND OR OCEAN)
- MAJOR NATURAL CATASTROPHES (E.G. EARTHQUAKE, TSUNAMI, VOLCANIC ERUPTION, GEOMAGNETIC STORMS)
- MAN-MADE ENVIRONMENTAL CATASTROPHES (E.G. OIL SPILL, RADIOACTIVE CONTAMINATION)

## TECHNOLOGICAL

- BREAKDOWN OF CRITICAL INFORMATION INFRASTRUCTURE AND NETWORKS
- LARGE-SCALE CYBERATTACKS
- MASSIVE INCIDENT OF DATA FRAUD/THEFT

## GEOPOLITICAL

- FAILURE OF NATIONAL GOVERNANCE (E.G. FAILURE OF RULE OF LAW, CORRUPTION, POLITICAL DEADLOCK, ETC ...)
- INTERSTATE CONFLICT WITH REGIONAL CONSEQUENCES
- LARGE-SCALE TERRORIST ATTACKS
- STATE COLLAPSE OR CRISIS (E.G. CIVIL CONFLICT, MILITARY COUP, FAILED STATES, ETC ...)
- WEAPONS OF MASS DESTRUCTION

## SOCIETAL

- FAILURE OF URBAN PLANNING
- FOOD CRISIS
- LARGE-SCALE INVOLUNTARY MIGRATION
- PROFOUND SOCIAL INSTABILITY
- RAPID AND MASSIVE SPREAD OF INFECTIOUS DISEASES
- WATER CRISIS

Figure 1:  
Global Risk Report 2016 – World Economic Forum



# THE REAL WORLD IMPACT OF RESILIENCE



## HEALTH: INFECTIOUS DISEASE

The 2014 Ebola outbreak provided the starkest contrast of how building resilience can affect catastrophic events. Sierra Leone experienced the highest rate of infection in Africa with 8,706 reported cases, along with the second highest death rate, whereas Nigeria successfully contained the outbreak, suffering just 20 cases and eight deaths.

How is it that these two West African states had such markedly different outcomes? The answer lies in resilience. Nigeria shored-up its resilience through prompt response and the institution of an effective intervention plan along with adequate funding, coordination, training and communication. The government immediately released 11.5 million US dollars to support the response and 18,500 face-to-face visits helped to promptly identify and isolate cases. Eight hundred volunteers were trained and a communication plan helped to spread the word among the populace to help contain the outbreak. As of October 13th 2014, the World Health Organization declared Nigeria Ebola-free.

By contrast, Sierra Leone completely failed to implement appropriate prevention measures, which left yawning gaps in infection prevention and control. A failure to define standard operating procedures for managing suspected or confirmed Ebola patients left poorly trained healthcare professionals and citizens vulnerable to infection. A crippling lack of resources meant that Sierra Leone was also critically short of treatment facilities and medical supplies, especially in rural areas.

This interplay between government, emergency services and medical personnel was crucial in determining the success, or otherwise, of the West African response to the Ebola outbreak. The interconnectedness of the world offers us many advantages, but it also poses risks. Used well, interconnectedness can bring events like an epidemic under control quickly. Used inadequately, it can increase the damage done by an event, costing huge sums of money and human life.

## DOMESTIC SECURITY: TERRORISM

Let's consider the effects of interconnectedness—or lack thereof—in an altogether different context, and on a different continent. From the gun attacks on the Charlie Hebdo offices in Paris, to the coordinated gun and bomb attacks in November 2015 and the attack in Nice on Bastille Day last year, France has undeniably suffered the consequences of failing to seize the opportunities such connected networks present.

Despite its comparative wealth and resources, France has not built effective inter-state coordination, intelligence operations and governance processes that may have prevented or mitigated this series of terrorist attacks, which killed a total of 234 people in 2015 and 2016. Poor communication between European intelligence and security agencies, for instance, allowed the surviving terrorist from the November attack to flee France by car to his home country of Belgium, hours after

the attacks. This, together with lack of proper governance processes (six different French intelligence agencies reporting to different ministries such as Interior, Defense and Economy) and failings in surveillance when convicted radicalized criminals were released from prison, rendered France unable to anticipate or respond swiftly and properly to these attacks.





## UTILITIES: BLACKOUT

Turning from violent extremism to energy, in 2003, the northern U.S. and Ontario experienced the biggest blackout in history that left 50 million people without power for up to 48 hours. The failure was triggered by nine seconds of instability in energy flows, caused by a series of cascading events. A single utility's failure to properly trim trees was deemed the root cause that started a string of preventable communication failures, software misuse, and power line shut-downs costing to the U.S. economy more than US\$6 billion .

With electricity blackouts, terrorism and disease pandemics all in the mix, it is clear that the global risks to nations are myriad. What's more, they arise across five main categories: economic, environmental, technological, geopolitical and societal. Countering them requires no small measure of investment, but the good news for government is that investment in shoring up resilience tends to be well-placed. The British Department for International Development estimates that for every dollar allocated to building or enhancing resilience, the yielding multiplier ranges from \$2.3 to \$13.2.

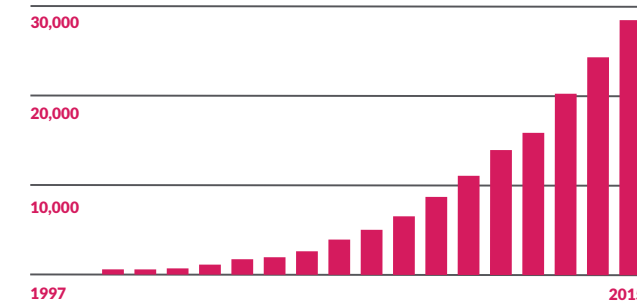


Figure 2:  
Use of the term "resilience" in published items

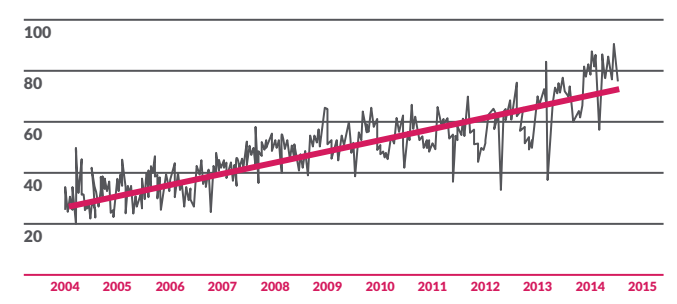


Figure 3:  
Global Risk Report 2016 – World Economic Forum

# BRINGING GREATER RESILIENCE TO THE GCC

5 'The Economic Impacts of the August 2003 Blackout', Electricity Consumers Resource Council, February 9, 2004

6 'The Economics of Early Response and Resilience Series', UK Department for International Development, 2013 (Crown copyright)

7 'The international development buzzword of 2012', Devex, December 20, 2012, [www.devex.com](http://www.devex.com)

8 'Resilience Scan: April-June 2015', Overseas Development Institute, October 2015, [www.odi.org](http://www.odi.org)

9 'The Y axis demonstrates relative interest in the term 'resilience' on Google compared to the maximum interest over the period 2004-2015, this has been rescaled to 100

10 '100 Resilient Cities', [www.resilientcities.org](http://www.resilientcities.org)

History has demonstrated that all nations confront significant events that, if not managed well, result in significant losses which can be extremely challenging to overcome. As the case of Nigeria illustrates, some nations have successfully demonstrated resilience, whilst others—like Japan and France—have failed, in markedly different scenarios, to effectively manage events.

The resilience experiences of North America, Africa, Europe and Asia reverberate across continents, reaching the shores of the Arabian Gulf. In fact, the risks faced by GCC countries are particularly diverse. Natural catastrophes such as flooding, sand storms and pandemics pose serious threat, as do human-related accidents such as food or water contamination, oil and chemical spills, and radiation leaks. Then there is the threat of terrorism along with a growing number of cyberattacks, exemplified perfectly by the Gauss virus attack on Lebanese banks, and the Shamoon attack on Saudi government agencies, not once, but three times.

The demonstrable impact that such events can have on a nation has catapulted the topic of resilience to the forefront of debates over the past five years, both globally and in the GCC region at conferences such as the National Security & Resilience in the UAE. In fact, 2012 saw the word "resilience" voted as the international development buzzword globally . The word is now also cited and searched much more than ever before (Figures 2 & 3).

This upsurge in interest is mirrored by increased investment in national resilience. Studies from the Overseas Development Institute indicate that, in 2015, conversations about resilience were concentrated on climate change, geopolitical conflicts, economic issues, water and food security and urban infrastructures. These conversations soon progressed from the realms of the theoretical, to operational methods of building resilience and governance requirements.

As a consequence of the conversations shifting towards practical topics, more than 50 Chief Resilience Officers were appointed around the world, and major cities such as New York, San Francisco, New Orleans, Mexico City, Rotterdam and Rio de Janeiro began implementing their own resilience strategies .

Given the stark examples of the negative impact that chronic stress, or acute shock can have on the health of a nation, the need is greater than ever for GCC countries to consider how well-prepared they are to resist and overcome today's diverse and complex array of threats.

# FRAMING THE PROBLEM

*Currently, the best way to tailor resilience strategy is to adopt and implement a comprehensive framework. In fact, the popularity of resilience, borne out of necessity, has given rise to a great number of frameworks or guidelines that focus on specific resilience features or on resilience as a system. Among the most popular is the City Resilience Framework developed by US-based independent professional services firm, Arup, in collaboration with the Rockefeller Foundation.*

The framework provides a tool for assessing and measuring resilience at the city scale. It assesses indicators across four categories: health & wellbeing; economy & society; infrastructure & ecosystems; and leadership & strategy, as well as 12 goals that specify the elements that cities should strive to embrace in order to become more resilient. This framework is comprehensive and technically robust, although the focus remains at an urban/city level, and the approach is focused more on monitoring and evaluation of performance, not necessarily on building capacity.

In addition to the Resilience Framework, Arup has also developed the City Resilience Index. The index draws upon both qualitative and

quantitative data and comprises 52 resilience indicators that are assessed through 156 questions. Responses to the questions posed are then aggregated and presented according to the 12 goals of the Framework. To date the Index has been tested in Shimla, India; Concepcion, Chile; Arusha, Tanzania; Hong Kong, China; and Liverpool, UK.

In addition to Arup, the World Bank and the OECD have also published resilience guidelines that are widely recognized. Some of the frameworks offer resilience performance monitoring and evaluation, while others give more attention to the implementation process of resilience plans and programs. To be comprehensive, the path towards national resilience should certainly include both.

11 'Arup City Resilience Index, [www.arup.com](http://www.arup.com)





# BUILDING A COMPREHENSIVE FRAMEWORK IN THE GCC

In order that truly holistic, fit-for-purpose frameworks are developed in the GCC, there are three areas that need special attention (Figure 4).

**FIRST,** it is essential to determine vital sectors—those considered so critical that their incapacitation or destruction would have a debilitating effect on national security. Here, it is important to recognize that “security” is not merely military or law enforcement related, but rather multi-faceted to include dimensions such as the security of water, food, the environment and information.

**LAST,** but by no means least, the success of a comprehensive resilience framework lies in building functional capabilities. Since increased resilience cannot be accomplished by enhanced governance capabilities alone, long-term shifts in functional capabilities are also needed. Continuity of government and operations, risk-management approaches, infrastructure protection systems, counter-terrorism practices and intelligence methods need to be integrated across sectors. This requires identifying and coordinating resources and expertise well in advance as well as planning how to face chronic stresses and prevent, respond, or recover from acute shocks.

**SECOND,** it is crucial to establish national governance capacity. Strong governance across all sectors is a key element of resilience and begins with a clear strategy towards a more resilient future. The strategy emerges from extensive research and analysis of the resilience actions already underway throughout a nation, and sets out a long-term vision, goals, principles, and actions. Meanwhile, thorough planning of roles, responsibilities and legislation instills efficiency and flexibility into the governance capabilities by avoiding duplication.

Of course, resilience cannot be compressed into a single law; rather, legislation and institutional arrangements will infuse the resilience vision and principles into all relevant laws and routine functions of the government. By coordinating policies and operations, as well as instituting public communication functions along with reporting and monitoring systems, a nation can adapt dynamically to shifting conditions and learn and grow from past experiences.

*With these issues all factored into the equation, a highly effective national resilience framework enables risk analysis to be conducted on an ongoing basis and embeds resilience into the very fabric of the nation by cutting across sectors and aligning operational activities with strategic priorities.*

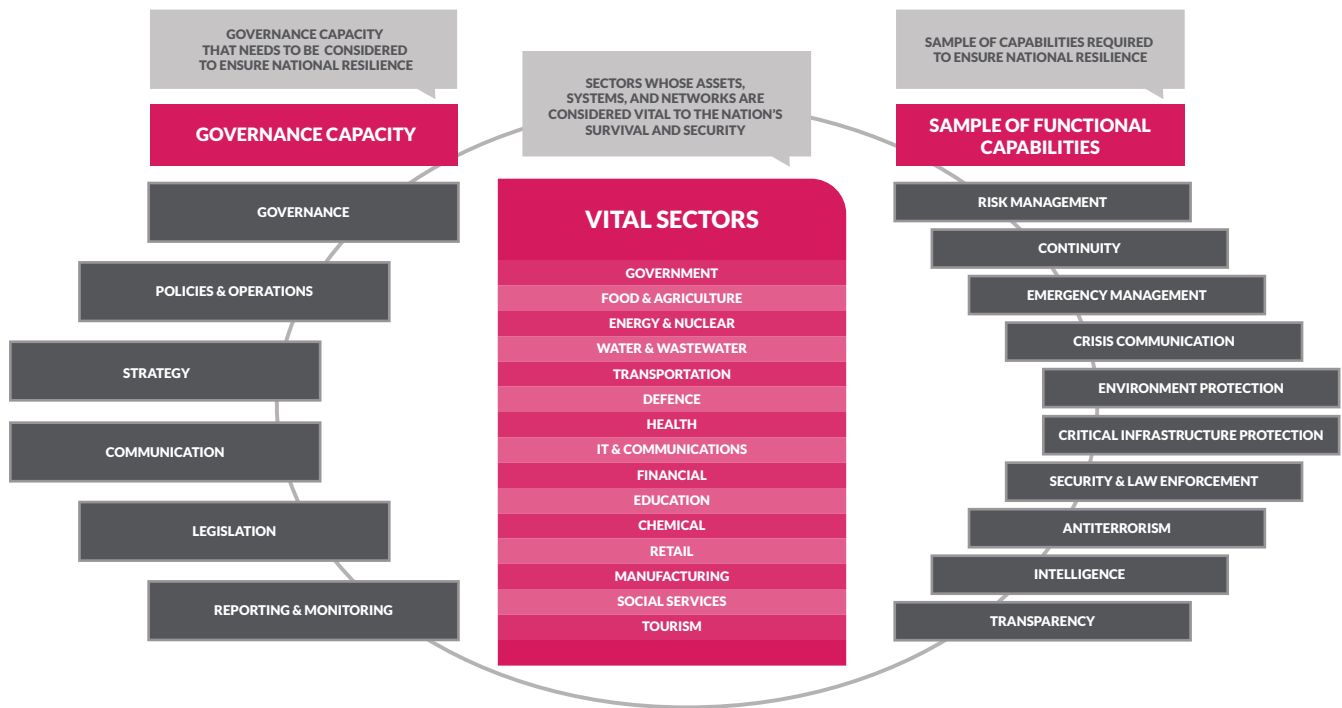


Figure 4:  
National Resilience Framework  
Source: Booz Allen Hamilton



# NATIONAL RESILIENCE ROADMAP

Once designed, implementing the resilience framework is a long-term process, however, setting visible, short-term milestones allows progress to be measured. A resilience roadmap provides governments with practical steps to begin the resilience journey, and, just as importantly, the encouragement to continue it.

To succeed in their aims, GCC governments should develop bespoke resilience roadmaps and develop a resilience vision and strategy that is aligned with their national strategy and which includes the participation of central government, local authorities, and private-sector stakeholders (Figure 5).

Amongst the key components of a resilience roadmap is the assessment of risk interdependencies and existing resilience capabilities; specifically, which risks the nation is willing to tolerate. This is the first step towards identifying and mitigating risks that are not tolerable under any circumstances.

Furthermore, it is also important to define a robust resilience governance structure and an effective coordination,

collaboration, and accountability process, together with a detailed plan with priorities and milestones for implementation.

Next, a government must develop a consistent and coordinated communication program around the government's vision for resilience.

Once that is in place, the government needs to establish: resilience policies such as national risk assessment and management, critical infrastructure protection, and emergency management; and processes & guidelines for planning, reporting, and monitoring among authorities, agencies, and sectors.

Finally, a government must build resilience capabilities across sectors to ensure the smooth functioning of a resilient infrastructure. Cross-sectoral coordination of efforts will be key to ensuring risks are effectively addressed. Continual reassessment of the established resilience capabilities (e.g., through simulated testing and real-life exercises) will also be essential for identifying areas of improvement that inform resilience strategy updates.

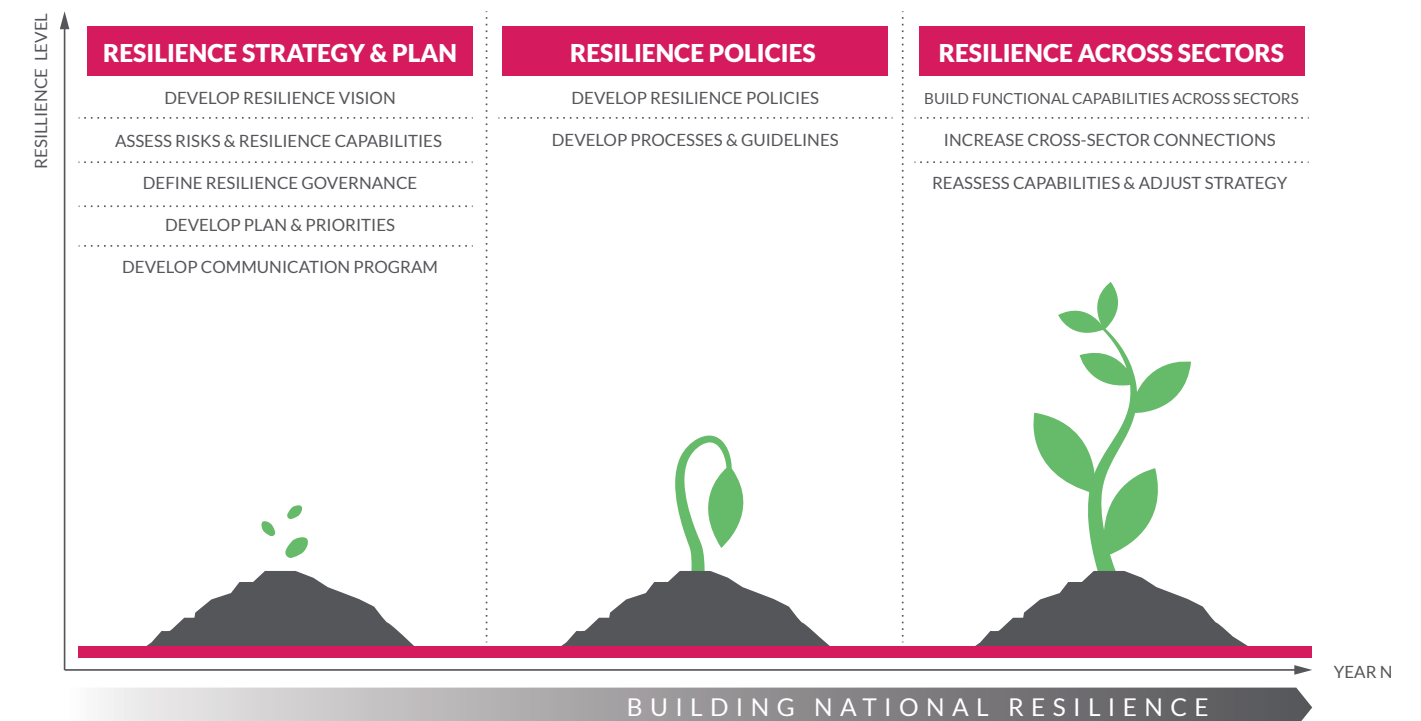


Figure 5:  
National Resilience Roadmap  
Source: Booz Allen Hamilton





## IN CONCLUSION

*From economic meltdown to natural disaster, and cyberattack to terrorist act, with catastrophes occurring on a daily basis, the harsh reality is that no country can afford to take a lax approach to national resilience. When disaster strikes, where resilience is lacking, no nation—rich or poor—can be immune to the devastating impact that all too often ensues. In today's world, where the counterbalance to unprecedented advancement is unprecedented threat and near unfathomable complexity, it is time, now more than ever, for GCC governments and their global counterparts to make national resilience a strategic imperative. Only then, the region can pursue to the exciting task of advancing their nations into the future, safe in the knowledge that they are ready—as much as anyone can be—for any eventuality.*





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Rosa Donno is a Senior Associate with Booz Allen Hamilton. She specializes in resilience, risk management, continuity, emergency management and the implementation of programs to strengthen critical security infrastructure.

Dr. Donno has delivered tangible results by building resilience at the national, local, and enterprise levels. She has led full-scale field exercise programs to test the resilience of critical infrastructure and has established continuity of government programs. Furthermore, she has played a lead role in defining the food and water security strategies for two GCC nations.

Dr. Donno possesses more than 16 years of experience with multinational consulting firms and has applied her extensive risk expertise across 11 countries in MENA and Europe.

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## About Booz Allen

Booz Allen Hamilton has been at the forefront of strategy and technology for more than 100 years. Today, the firm provides management and technology consulting and engineering services to leading Fortune 500 corporations, governments, and not-for-profits across the globe. In the Middle East and North Africa (MENA) region, Booz Allen builds on six decades of experience partnering with public and private sector clients to solve their most difficult challenges through a combination of business strategy, digital innovation, data analytics, cybersecurity and resilience, operations, supply chain, organization and culture, engineering and life-cycle project management expertise.

With regional MENA offices in Abu Dhabi, Beirut, Cairo, Doha, Dubai and Riyadh, and international headquarters in McLean, Virginia, the firm employs more than 22,600 people globally, and had revenue of \$5.41 billion for the 12 months ended March 31, 2016. To learn more, visit [mena.boozallen.com](http://mena.boozallen.com). (NYSE: BAH)

