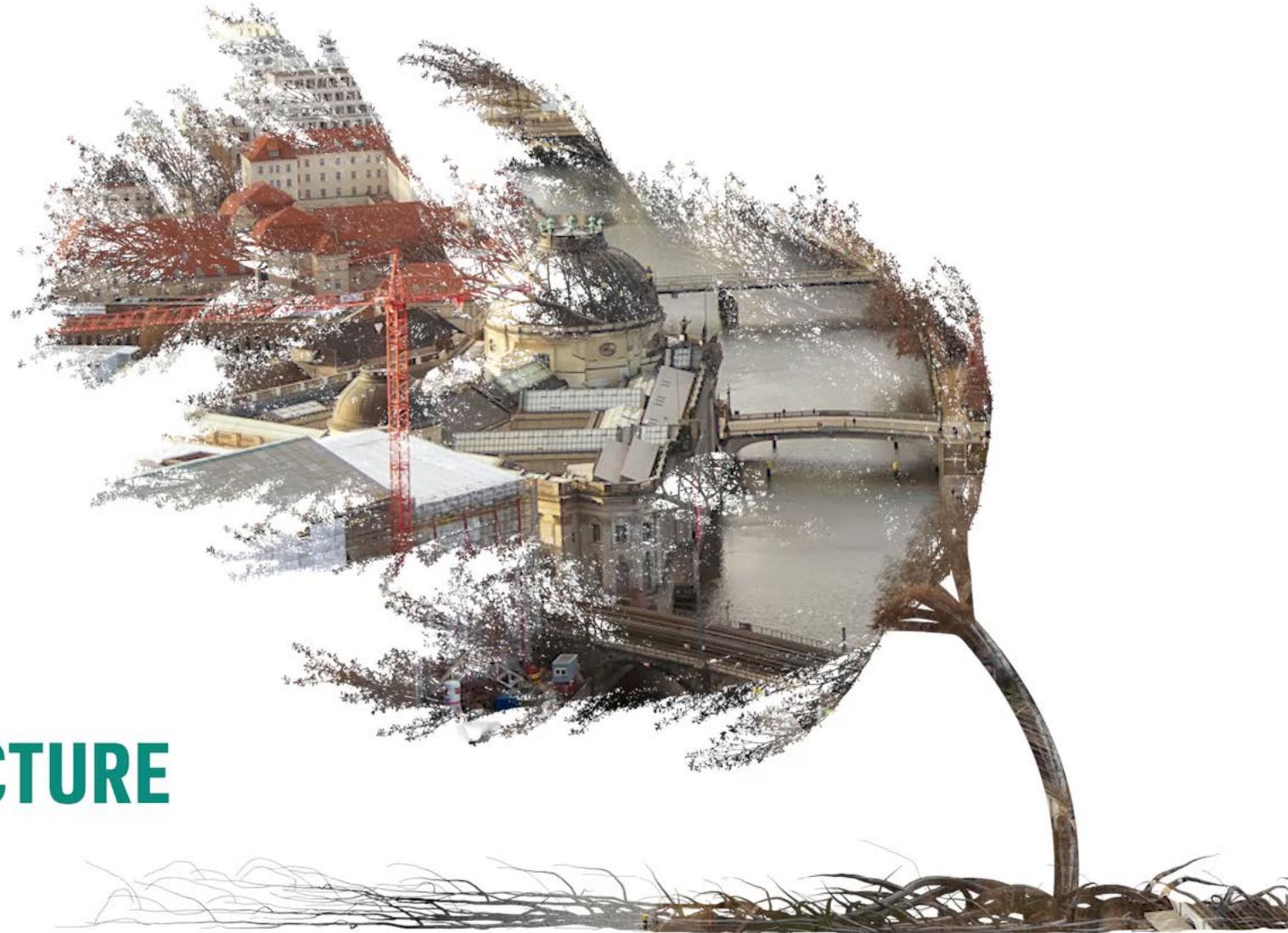


THE RESILIENCE SHIFT

**SECURING OUR FUTURE
THROUGH
RESILIENT INFRASTRUCTURE**



 THE RESILIENCE SHIFT

SECURING OUR FUTURE THROUGH RESILIENT INFRASTRUCTURE

4TU - 30 June 2020

Juliet Mian | Deputy Executive Director

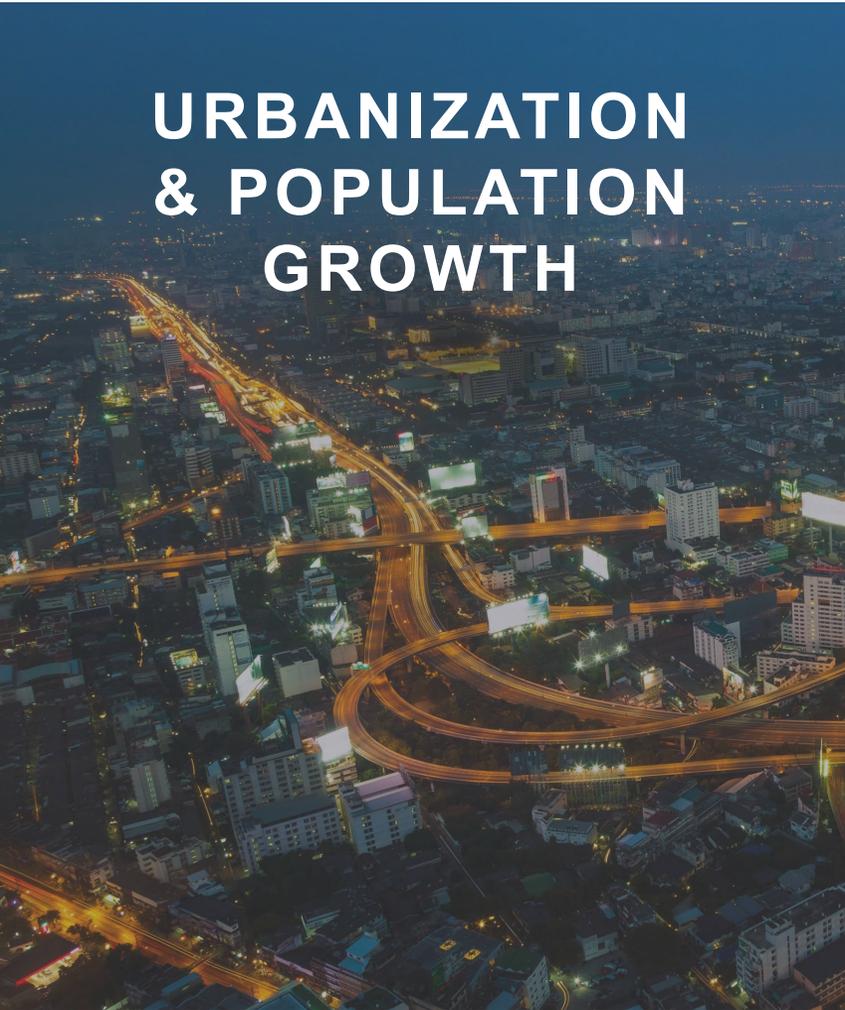
resilienceshift.org | info@resilienceshift.org

Introducing the Resilience Shift

Reflecting on the Covid-19 crisis and its implications for resilience

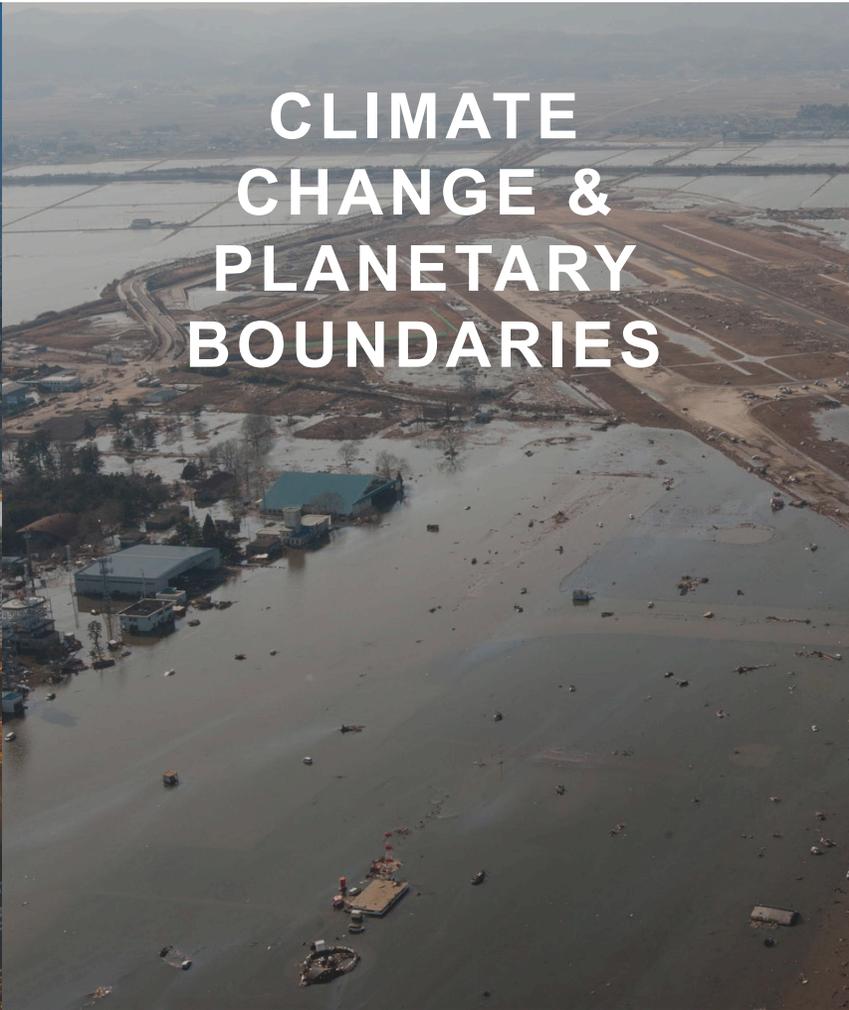
Learning from crisis: the importance of resilient leadership

Global challenges



**URBANIZATION
& POPULATION
GROWTH**

Photo by Ruslan Bardash on Unsplash



**CLIMATE
CHANGE &
PLANETARY
BOUNDARIES**

Photo by U.S. Air Force



**DIGITAL
TRANSFORMATION
&
GLOBALIZATION**

Photo by Jens Johnsson on Unsplash

Increasing urgency



\$94tn

The global infrastructure gap means there is a need to secure an estimated US\$94 trillion of global infrastructure funding by 2040.¹



175ZB

The global datasphere is predicted to reach 175 zettabytes by 2025 (One zettabyte is a trillion gigabytes).⁵



45%

An equivalent to 45% of the sea freight capacity between Europe and Asia and the transpacific region was cancelled within a few weeks of the Covid-19 crisis.⁶

68%

By 2050 68% of the world's population will live in cities. That represents 1.5 billion people moving into cities every week over the coming 30 years.⁴



4:1

For every US\$1 invested in infrastructure adaptation, a four-fold return is estimated.⁸

470m

Some 470 million people in 45 cities are expected to face extremely high water stress by 2030, up from 255 million today.³



\$650bn

Climate-related disasters have cost the world US\$650 billion over the last three years.²

17SDGs

Infrastructure has a significant role to play in meeting all 17 of the UN's Sustainable Development Goals.⁷

Action to date



450

Connected with more than 450 organisations who have become part of our community.

40

Dispersed more than 40 grants totalling over £2million in nine countries.



92

The Resilience Shift has published 92 videos to date on its YouTube channel and the Cape Town Day Zero learning resources library.



3500

Engaged directly with more than 3500 individuals through over 90 events and workshops in 16 countries.

50

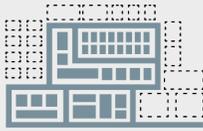
Created and shared more than 50 freely available publications, knowledge products and digital



Social Media



resilienceshift.org

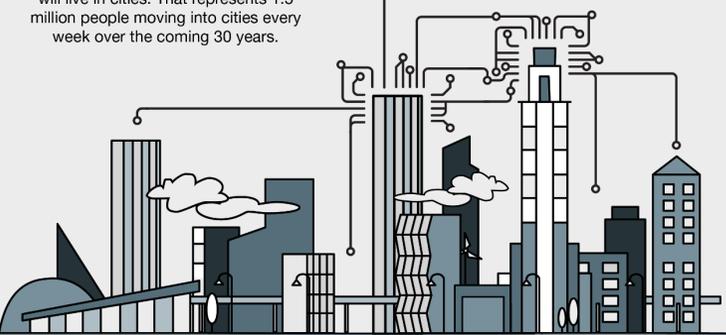


URBANISATION

By 2050 68% of the world's population will live in cities. That represents 1.5 million people moving into cities every week over the coming 30 years.

DIGITAL TRANSFORMATION

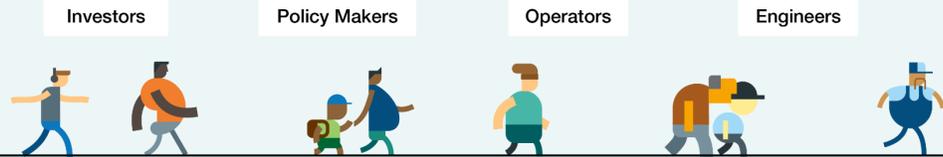
175ZB The global datasphere is predicted to reach 175 zettabytes by 2025 (One zettabyte is a trillion gigabytes).



THE RESILIENCE SHIFT

SECURING OUR FUTURE THROUGH RESILIENT INFRASTRUCTURE

INSPIRING AND EMPOWERING PEOPLE



WHOLE SYSTEMS THINKING

Looking beyond the boundaries of any system and considering interconnectivity and interdependencies.

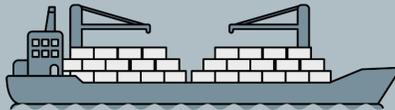


WORLD IS FULL OF DISRUPTIVE FORCES



CLIMATE CHANGE

Some 470 million people in 45 cities are expected to face extremely high water stress by 2030, up from 255 million today.



GLOBALISATION

An equivalent to 45% of the sea freight capacity between Europe and Asia and the transpacific region was cancelled within a few weeks of the Covid-19 crisis.

AND WE ARE CREATING A MOVEMENT TO BRIDGE THE INFRASTRUCTURE GAP

TO CREATE A SAFE, RESILIENT AND SUSTAINABLE FUTURE FOR ALL



INCREASING SYSTEMS COMPLEXITY

Existing infrastructure systems are increasingly complex and interdependent, spreading across national borders and continents, and more and more reliant on sophisticated digital technology.

OUTPUTS

Thought leadership publications

Coalitions and partnerships

Guidance, standards and tools

OUTPUTS

Case studies and value stories

Events

Education and capacity building

MOTIVATING PEOPLE

EMPOWERING PRACTICE

INSPIRING ACTION



OVERCOMING FRAGMENTED GOVERNANCE

Encouraging collaboration across different stakeholders in a system and moving away from siloed decision making.



MANAGING DEEP UNCERTAIN

Not only mitigating known risks, but being able to respond to, and recover from, those risks we cannot predict or avoid in our uncertain and complex world.



FOCUSING ON OUTCOME-LED APPROACHES

Thinking about what the system does, not what it is will create the shift in practice that is needed for better infrastructure decisions.



ADOPTING TECHNOLOGY WHICH ENHANCES RESILIENCE

When using digital technology in infrastructure systems, it is essential to consider its broadest possible impacts to ensure that new vulnerabilities are not created and resilience compromised.

HOW WE WORK

WORKING ACROSS THE WHOLE VALUE CHAIN

SHARING LEARNING

TRANSFERRING KNOWLEDGE BETWEEN SECTORS

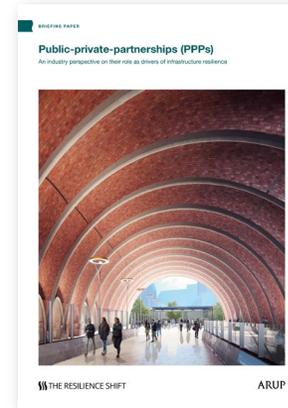
INFLUENCING POLICY

DEMONSTRATING THE VALUE OF RESILIENCE

SHAPING PRACTICE

Influencing policy

Understanding how different mixes of legislation and policy instruments can incentivise and enhance the resilience of critical infrastructure, and shape resilience-led policy-making.



PUBLIC PRIVATE PARTNERSHIPS (PPPs)



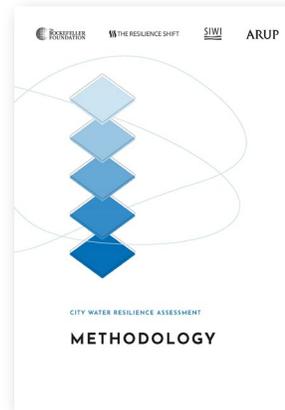
LEGISLATION



PUBLIC POLICY

Shaping practice

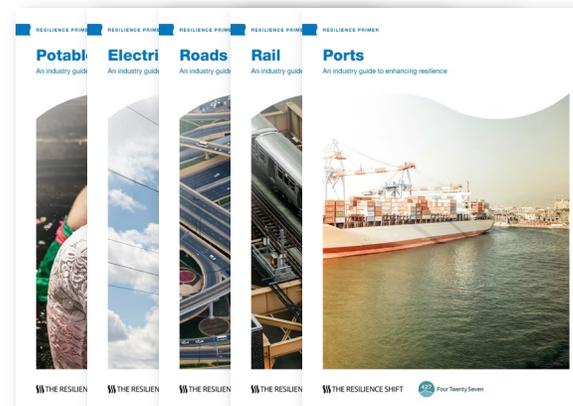
Building a global community equipped with the knowledge and tools needed to drive practice towards better, more resilient critical infrastructure and a safer world.



CITY WATER RESILIENCE APPROACH



RESILIENCE TOOLS



RESILIENCE PRIMERS

Sharing learning

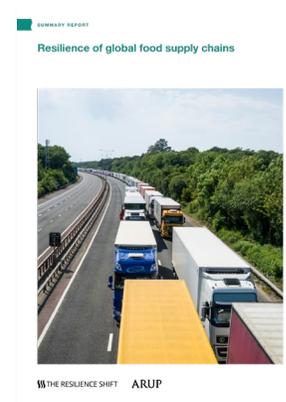
Advancing best practice across the infrastructure value chain requires collaborative working and fostering knowledge transfer.



BLACK SKY SCENARIOS

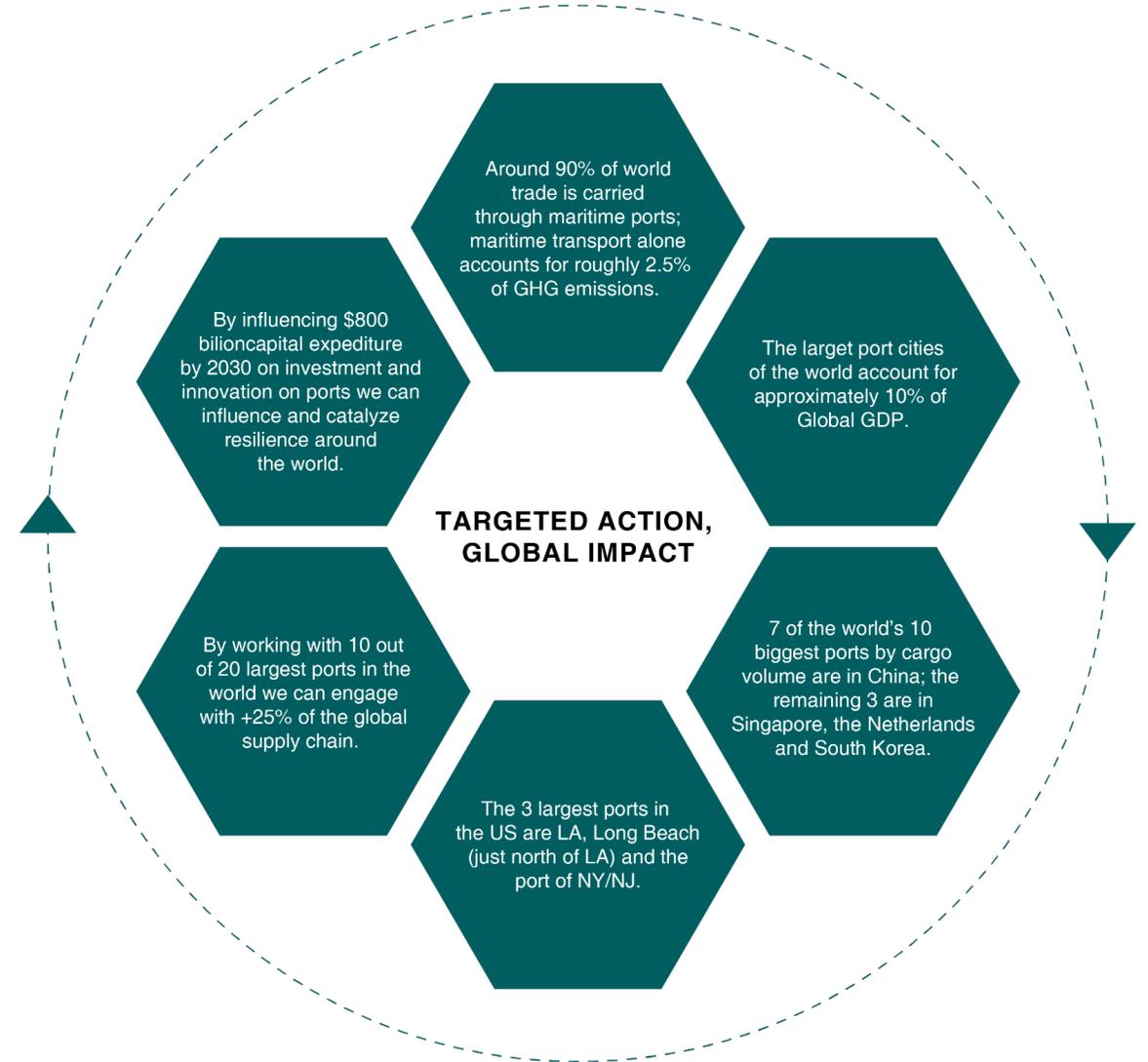


CHRISTCHURCH'S RECONSTRUCTION



GLOBAL FOOD SUPPLY CHAINS

Resilience4Ports





Thinking about whole systems



Overcoming fragmented governance



Managing deep uncertainty



Engaging the whole value chain



Demonstrating the benefits of resilience

10 insights for resilience

These insights, drawn from our work, capture what matters most in creating a shift towards more resilient infrastructure.



Focussing on outcome-led approaches



Adopting technology to enhance resilience



Transferring knowledge widely



Becoming safer, resilient and more sustainable



Developing guidance and standards

Resilience Shift outputs

The best place to look is the Resilience Shift website: <https://resilienceshift.org>

You will find different types of outputs, including tools, publications and blogs.



@resilienceshift



The Resilience Shift

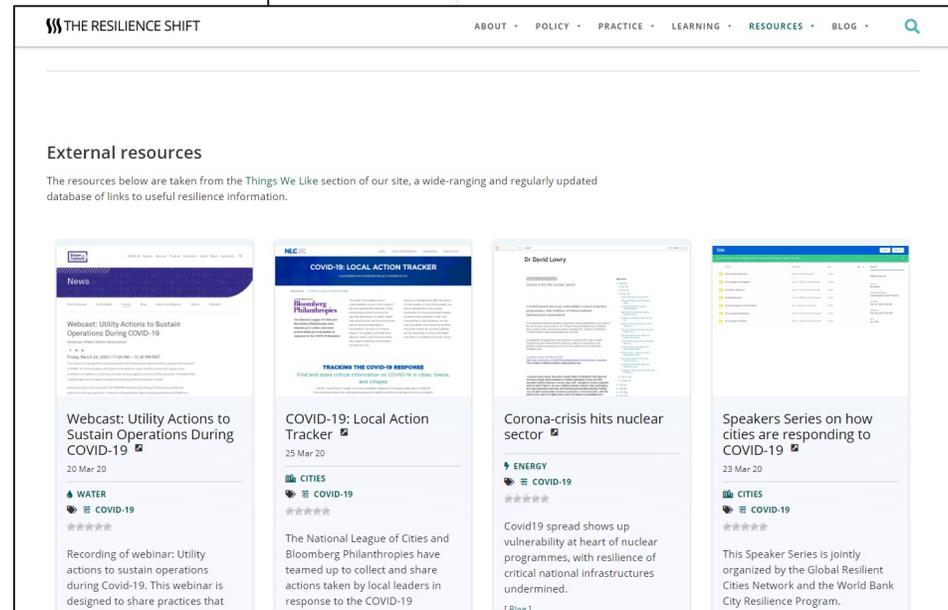
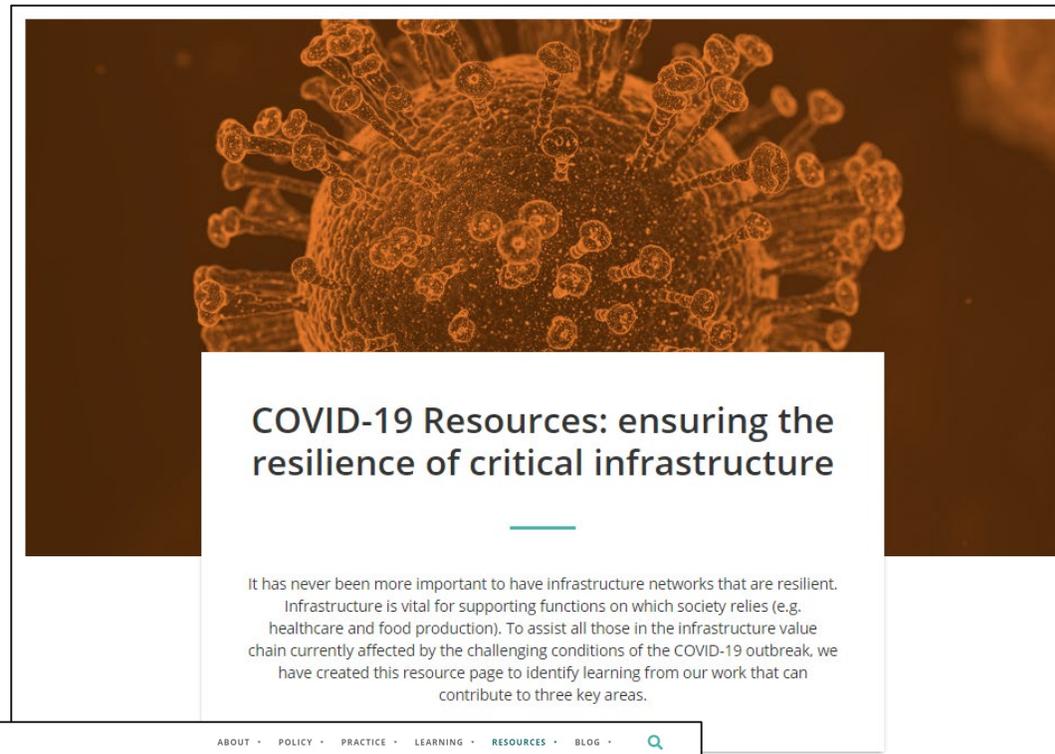
The screenshot shows the homepage of the Resilience Shift website. At the top, there is a dark red banner with the text "Find out about our work Watch our 1-minute explainer" and a "DISMISS" button. Below the banner is a navigation menu with links for "ABOUT", "POLICY", "PRACTICE", "LEARNING", "RESOURCES", and "BLOG". The main content area features a large image of Earth from space with the text "Resilient infrastructure for a safer world" and a button that says "ABOUT RESILIENCE SHIFT". Below this are two smaller featured articles: "Stories to inspire resilience at Transitions Film Festival" (dated 20 FEB - 06 MAR 2020) and "Cross-sector understanding, transferring learning and sharing good practice" (dated 11 February, 2020). On the right side, there is a sidebar with a "Watch our explainer video" button, an "Upcoming Events" section listing the "Transitions Film Festival - 'Visions for a Better World'" (20 February-6 March), and a "Recent Tweets" section showing tweets from RICS and Lina Liakou.

Covid-19 Resource Bank

When we find something we like or find useful, we share it on our website.

The Resilience Shift is collating a repository of information to support recovery from Covid-19.

<https://www.resilienceshift.org/covid-19-resources/>

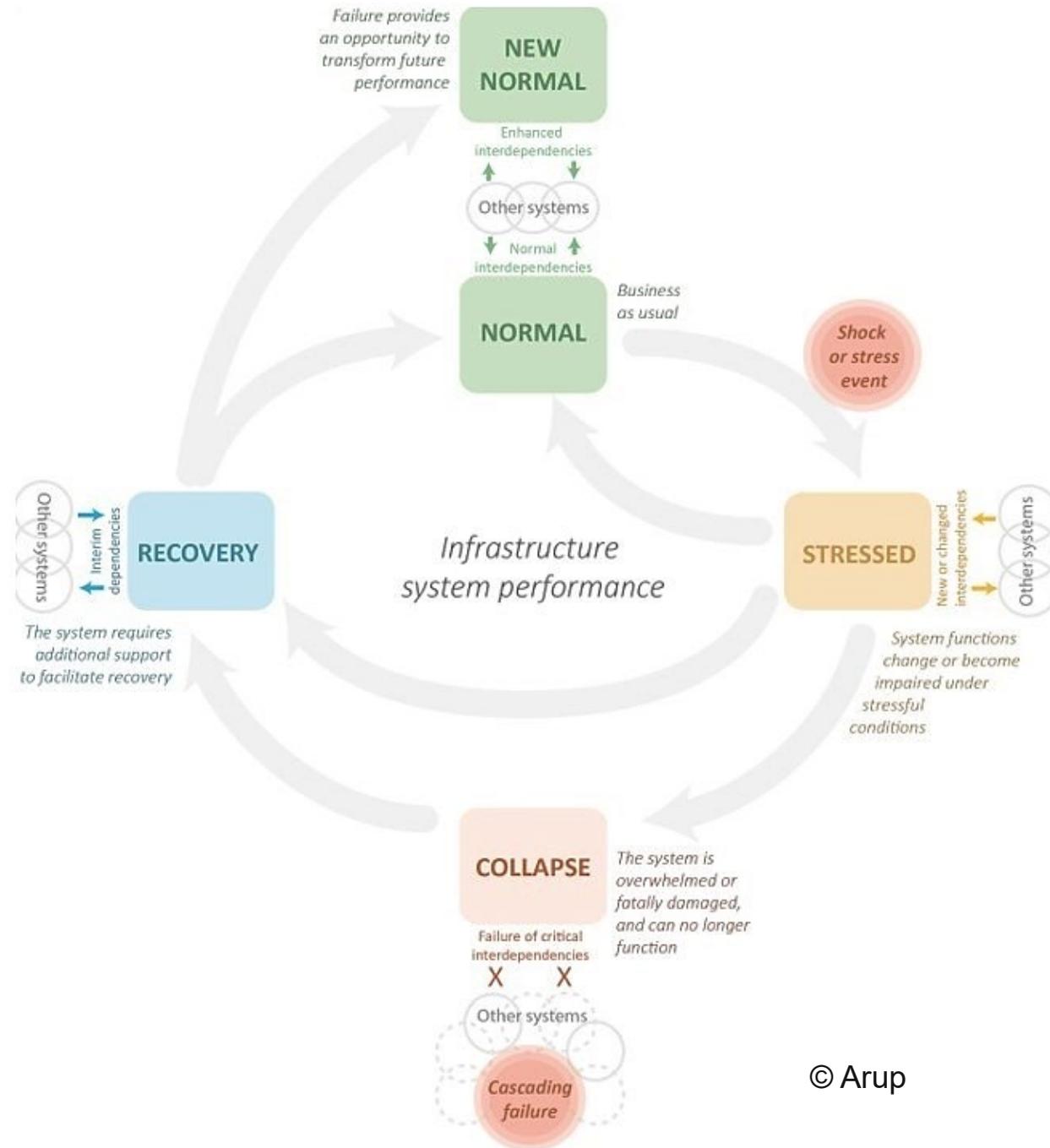


Reflecting on the Covid-19 crisis and its implications for resilience

Covid-19 and resilience

On 11 March 2020, COVID-19 was declared as a global pandemic. Every part of the critical infrastructure value chain is impacted.

In many ways, the crisis has reinforced what we already knew, but there are new and significant changes and deep uncertainties to deal with.

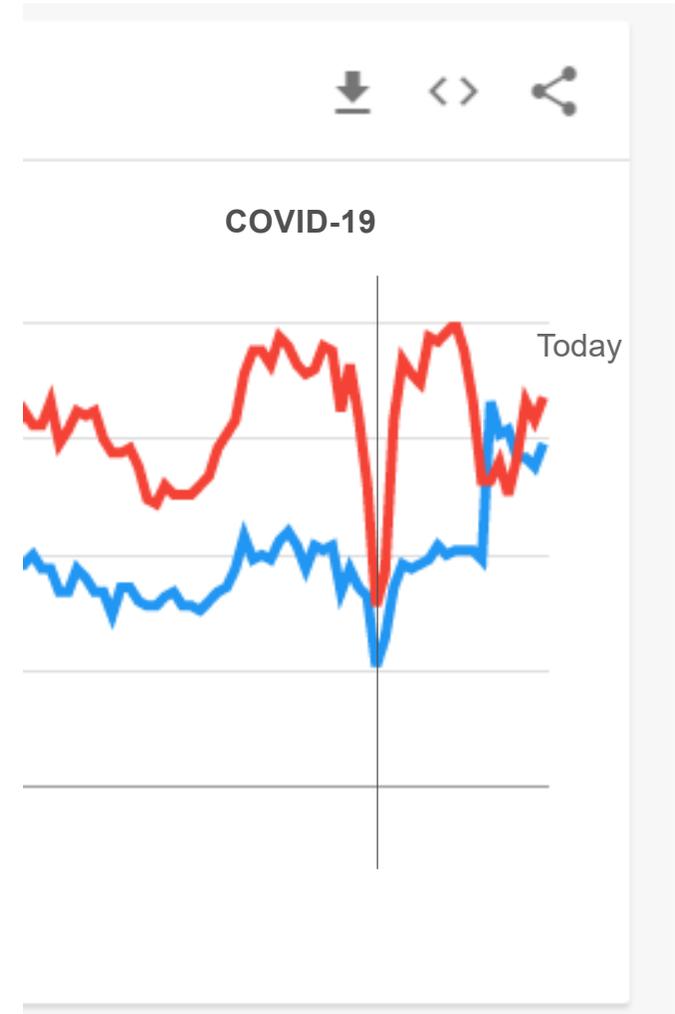
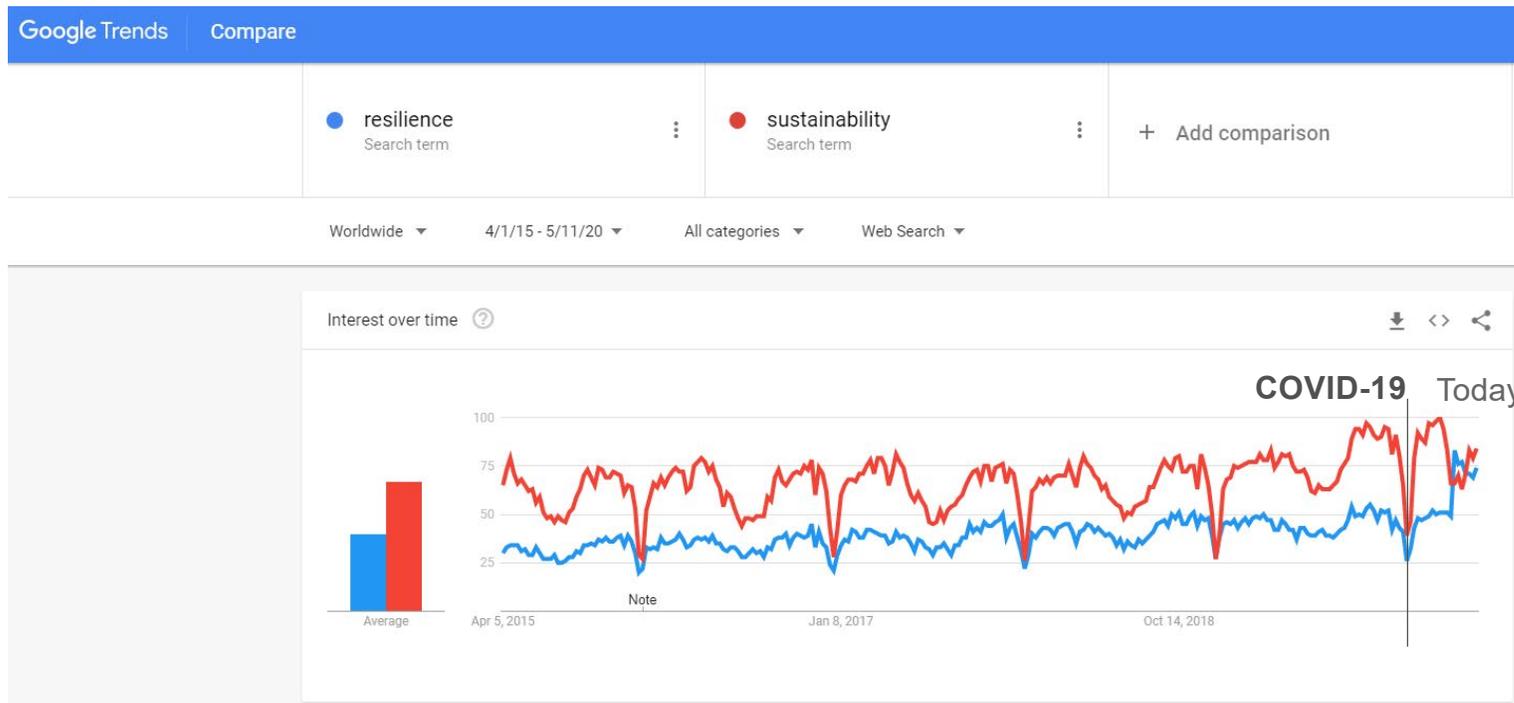


Covid-19 and infrastructure networks

The future of transportation does not look like we thought it did!



Increased interest in 'resilience' in recent months



* Based on number of google searches

The Resilience Shift

Delivering-net-zero.pdf x These organizations are helping x +

v/05/cities-urbanization-urban-living-coronavirus-covid19-pandemic-design/

WORLD ECONOMIC FORUM

Agenda Platforms Reports Events About

Global Agenda COVID-19 Cities and Urbanization Infrastructure

Cities are especially vulnerable to COVID-19. These organizations are leading the urban response.



Things that make cities dynamic are what make them vulnerable to COVID-19. Here's how cities can fight the pandemic.

05 May 2020

Joseph Lombardi

the things that make cities dynamic also make them more vulnerable to the coronavirus.

theguardian.com/environment/2020/may/17/after-the-covid-19-crisis-will-we-get-a-greener-world

The Observer Green economy

After the Covid-19 crisis, will we get a greener world?

Pollution and emissions are down, but we will squander these gains if governments fail to push ahead with decisive change

- Coronavirus - latest updates
- See all our coronavirus coverage

Gala Vince

Sun 17 May 2020 10:00 BST



395

theguardian.com/environment/2020/may/07/world-cannot-return-to-business-as-usual-after-covid-19-say-mayors

World cannot return to 'business as usual' after Covid-19, say mayors

City leaders publish 'statement of principles' putting climate action at centre of recovery plans

- Coronavirus - latest updates
- See all our coronavirus coverage

Matthew Taylor

Thu 7 May 2020 18:00 BST

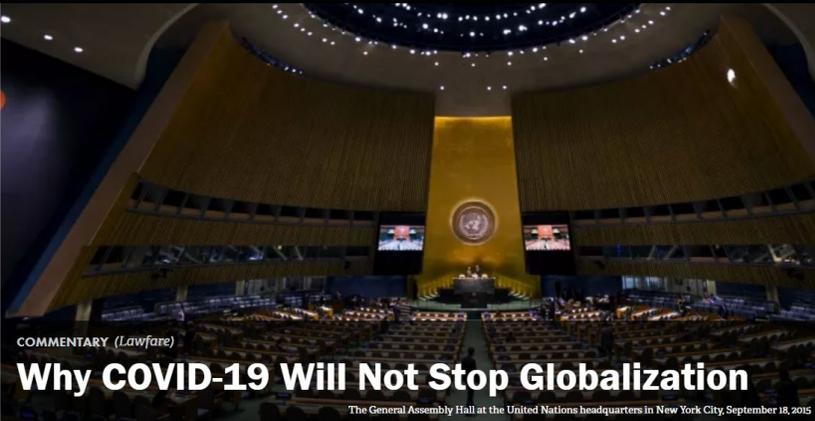


1323

rand.org/blog/2020/04/why-covid-19-will-not-stop-globalization.html

OBJECTIVE ANALYSIS. RESEARCH LATEST INSIGHTS POLICY EXPERTS CAPABILITIES GRADUATE SCHOOL

EFFECTIVE SOLUTIONS.



COMMENTARY (Lawfare)

Why COVID-19 Will Not Stop Globalization

The General Assembly Hall at the United Nations headquarters in New York City, September 18, 2015. PH

by Raphael S. Cohen

April 13, 2020

wri.org/blog/2020/03/covid-19-could-affect-cities-years-here-are-4-ways-theyre-coping-now

WORLD RESOURCES INSTITUTE

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What We Do Where We Work Publications Maps & Data Blog News Events About

Climate Energy **Food** Forests Water Cities Ocean BUSINESS ECONOMICS FINANCE GOVERNANCE

Enter a b

Blog → COVID-19 Could Affect Cities for Years. Here Are 4 Ways They're Coping Now.

COVID-19 Could Affect Cities for Years. Here Are 4 Ways They're Coping Now.

by Schuyler Null and Hillary Smith - March 20, 2020

Print | Twitter | Facebook | LinkedIn | Email | More

The COVID-19 pandemic is laying bare two unavoidable facts about our new reality: we are more interconnected than ever, and cities are at the front lines of this crisis and



The new normal impact of COV: x

mckinsey.com/industries/automotive-and-assembly/our-insights/the-impact-of-covid-19-on-future-mobility-solutions#

McKinsey & Company

Automotive & Assembly

Our Insights How We Help Clients Our People Contact Us



The impact of COVID-19 on future mobility solutions

May 4, 2020 (6 min)

ft.com/content/9e832c8a-8961-11ea-a109-483c62d17528

navirus: free to read

Can we tackle both climate change and Covid-19 recovery? | Free to read

Two experts debate whether shift to low carbon can push forward amid economic stress

Christiana Figueres and Benjamin Zycher MAY 7 2020 235

Be the first to know about every new Coronavirus story

Get instant email alerts

This article is a part of a series in which the FT asks leading commentators and policymakers what to expect from a post-Covid-19 future

Yes — Choices made now will shape the global economy for decades to come

The most consequential question facing us right now is not whether we

bbc.co.uk/news/business-52104978

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Business Your Money Market Data Companies Economy

Will coronavirus reverse globalisation?

By Jonty Bloom Business reporter

2 April 2020

Coronavirus pandemic

Share

Learning from crisis: the importance of resilient leadership

Why resilient leadership matters

- Covid-19 has reinforced the **importance of people** in the continued functioning of our infrastructure systems.
- There is **no physical impact**, but an urgent need for decision-making in the context of uncertainty.



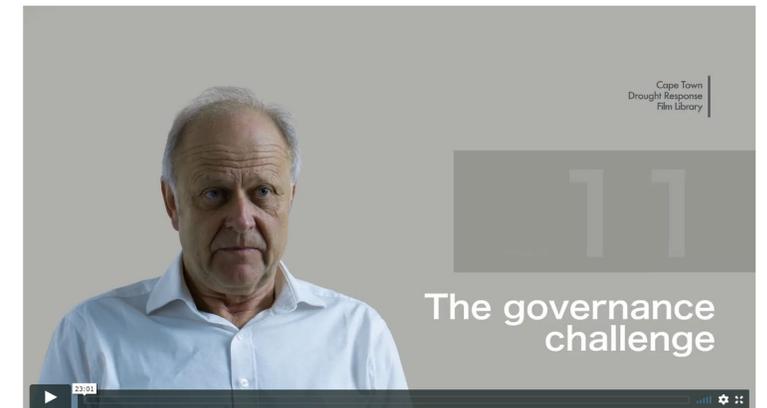
Learning from crisis

The stories that emerge can be a very powerful way of communicating what matters



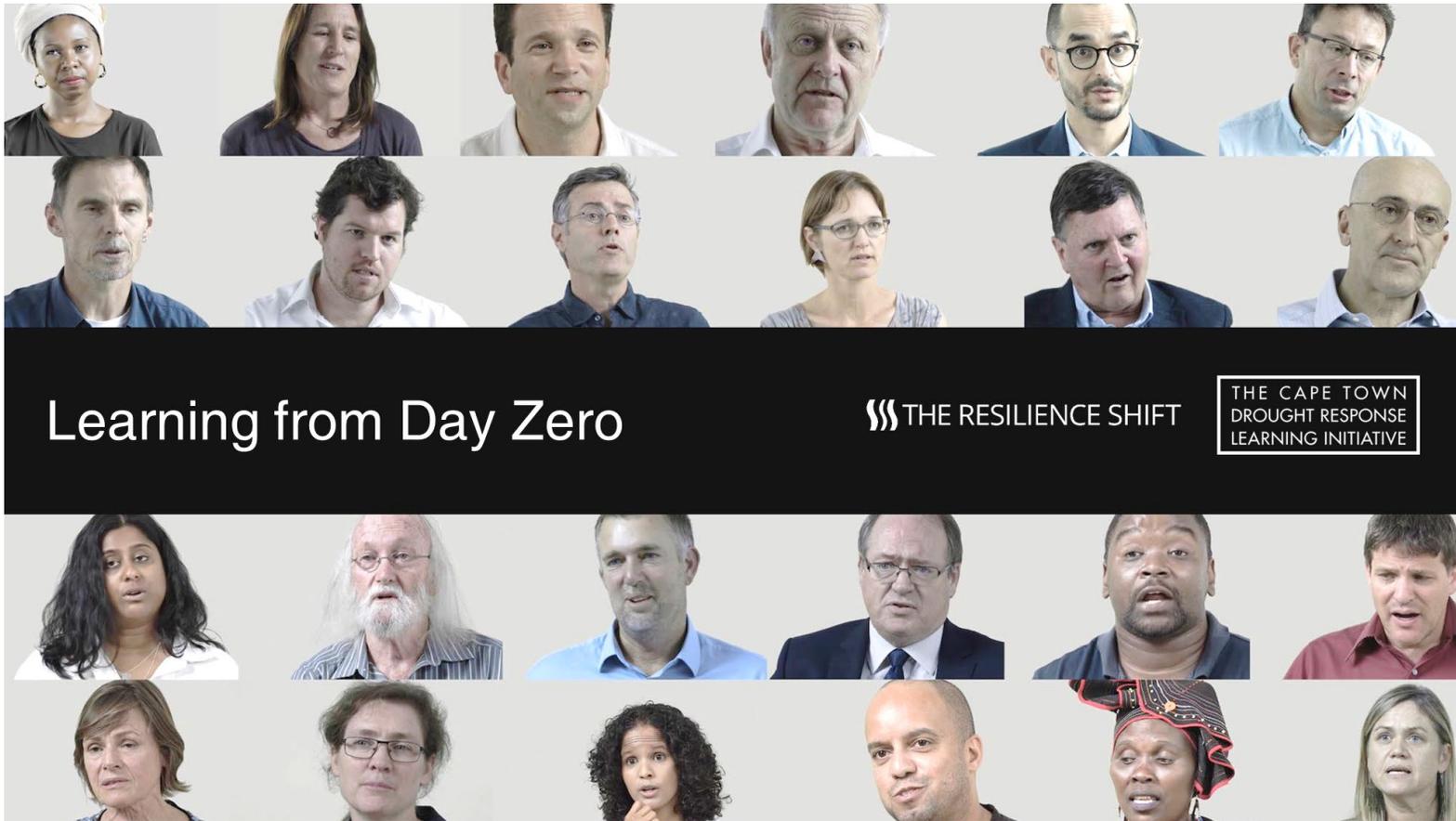
In collaboration with

**THE CAPE TOWN
DROUGHT RESPONSE
LEARNING INITIATIVE**



Learning from Crisis – Day Zero

- 90-minute, filmed interviews with 40 decision-makers involved in the response to the 2017-18 drought in Cape Town.
- Interviews were carried out late 2018/early 2019.
- Lessons summarised in film-based learning products of different lengths and categorised under different themes



Learning from crisis-resilient leadership

- Interviews with **5 Chief Resilience Officers** and **7 leaders** in large global organisations who are navigating organisational response to Covid-19.
- **Weekly, 30-minute interviews** to capture “real-time” reflections and insights, between April and July 2020.
- Enable indirect conversations between participants.
- Weekly peer-group and public-facing outputs.
- Summary/closeout outputs at specific points in the process.



Dr. Adriana Campelo
Director of Resilience, City of Salvador
SALVADOR, BRAZIL



Peter Chamley
Chair, Australasia Region, Arup
MELBOURNE, AUSTRALIA



Hany Fam
Founder, Optima
NEW YORK CITY, USA



Mahesh Harhare
Chief Resilience Officer, City of Pune
PUNE, INDIA



Barbara Humpton
CEO, Siemens USA
WASHINGTON, D.C.



Craig Kesson
Executive Director, Chief Data Officer and Chief Resilience Officer, City of Cape Town
CAPE TOWN, SA



Alexandria McBride
Chief Resilience Officer, City of Oakland
OAKLAND, CA



Tom Lewis
President, Federal Programs and Logistics, USA, WSP
MORRISTOWN, NJ



Piero Pelizzaro
Chief Resilience Officer, City of Milan
MILAN, ITALY



Elaine Roberts
Chief Marketing Officer, Lloyd's Register Group
LONDON, UK



Ann Rosenberg
SVP & Global Head of SAP Next-Gen, SAP
COPENHAGEN, DENMARK / NEW YORK, NY



Anonymous
Official at a Global Development Finance Institution

In collaboration with



Resilient Leadership

Round 5: 11 - 15 May 2020

THE RESILIENCE SHIFT
LEARNING from CRISIS
MAY 11 - 15

THIS HAS SHINING LINE
HOW CAN WE
I THINK IT'S TIME FOR OPTIMISTS to RALLY
VISION 2030
SOLIDARITY
2020
BUILD BACK BETTER

"It made me think, are we actually learning? I'm rethink and let go of what they have believed for..."

In Round 5 our conversations with participants turn pre-existing condition of our critical systems (teams case is particularly strong, but its light shines neutral troubling weakness.

To start with the weakness, a few examples. One city deprivation or wealth inequality in cities is certainly makes it so much more obvious, and: "if you don't do problems, it becomes a vulnerability for your city's overall resilience."

Round 6: 18 - 22 May 2020

THE RESILIENCE SHIFT
LEARNING from CRISIS
MAY 18 - 22

RISK MANAGEMENT IS WHAT YOU DO BEFORE NOT AFTER A CRISIS HAPPENS
WE OFTEN live in denial
YOU CANNOT LEAVE ANYONE Behind WITH THIS VIRUS
CITIES ARE FACING A HARD REALITY
DECLINING REVENUE & INCREASING RESPONSE COSTS
HEALTHCARE ESSENTIAL SERVICES OPERATIONS
Balancing systems
DISASTER RESPONSE CORPORATE OPERATIONS
COVID-19 & natural DISASTERS
RISK-O-METER

"When you're immersed in lockdown, everywhere you look, the world is experiencing the same thing. There is a sense of solidarity. But then a portion of the world moves on from that to a different version and its stories are different. Do you still have this feeling of global solidarity and connection?"

In our sixth round of conversations some of our participants pondered the value of making room for others to lead. We are in a long crisis. Leaders' ability to respond decisively and swiftly in the early phases has been shown everywhere to be critical to establishing public and stakeholder trust. Now, as we settle in to a more complex, multi-faceted phase, it can be helpful for all concerned if a wider spectrum of team members steps up to help hold the reins. Having experienced that strong urge to lean forward and lead from the front, this week our participants talked of the importance of taking a step back.

Examples came from both corporations and cities. One corporate leader shared how recognising when to let others lead and ensuring they felt empowered to do so has been an important part of their mission over the past months.

Weekly blogs

- EPISODE 5
- EPISODE 4
- EPISODE 3
- EPISODE 2
- EPISODE 1

The Resilience Shift
#5 - Insights from Round 5 (22 May 2020)

SOUNDCLOUD
Share

RESILIENT LEADERSHIP
LEARNING FROM CRISIS

27:17

Cookie policy

Weekly Podcast

<https://www.resilienceshift.org/resilient-leadership/>

Week-by-week insights

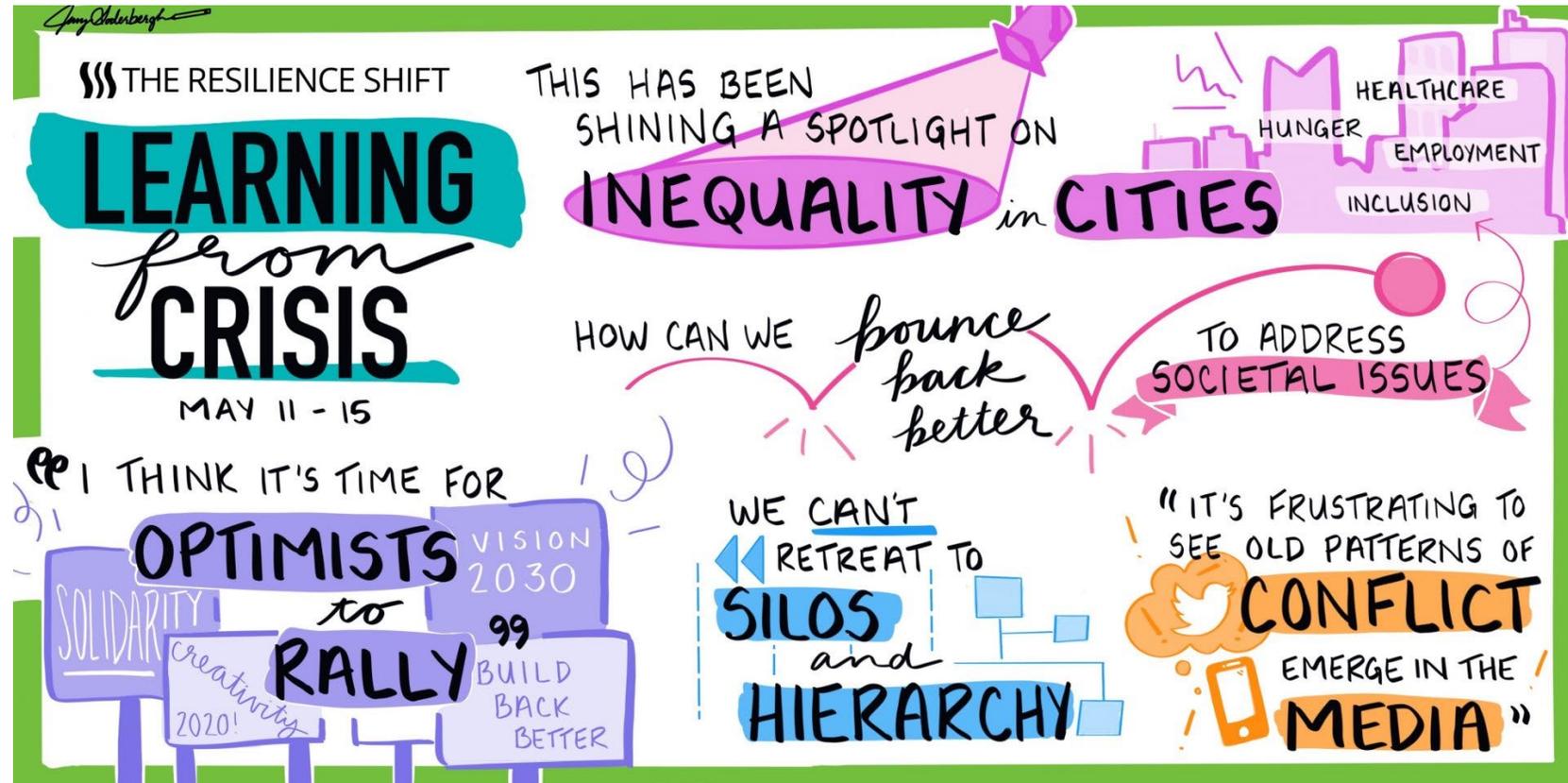
Underlying conditions...

The Covid spotlight is illuminating some striking pre-existing strengths, but also weaknesses.

“Everything un-gels at a time like this”

“It’s not a personal thing. It’s well-meaning people in a fractured system.”

Good leadership in a crisis actually begins before the crisis itself.



As the wave starts to break...

Pay attention to weak, early signals

Reset your strategic priorities and free yourself from the constraints of the existing organogram

Adopt a 'start-up' mentality

Take care of critical supply chains in advance



Turbulence of the breaking wave...

Remember that crises won't form an orderly queue for our attention

The re-opening dilemma

When there's no safe option, get as ready as you can and then plunge ahead

Lift your head and collaborate, collaborate.



Leadership and the personal perspective...

Create a narrative and a sense of being in this together

Be open, honest, and communicate frequently

The surprising upside of leading in a crisis

As the crisis matures, be ready to let go of some leadership and empower others to step up



Recovering better...

Dilemmas around a green recovery

Decentralize to increase resilience to shocks

When putting in infrastructure, make it dual use

What will be the implications for cities and businesses of the emerging 'Con-Covid' landscape?

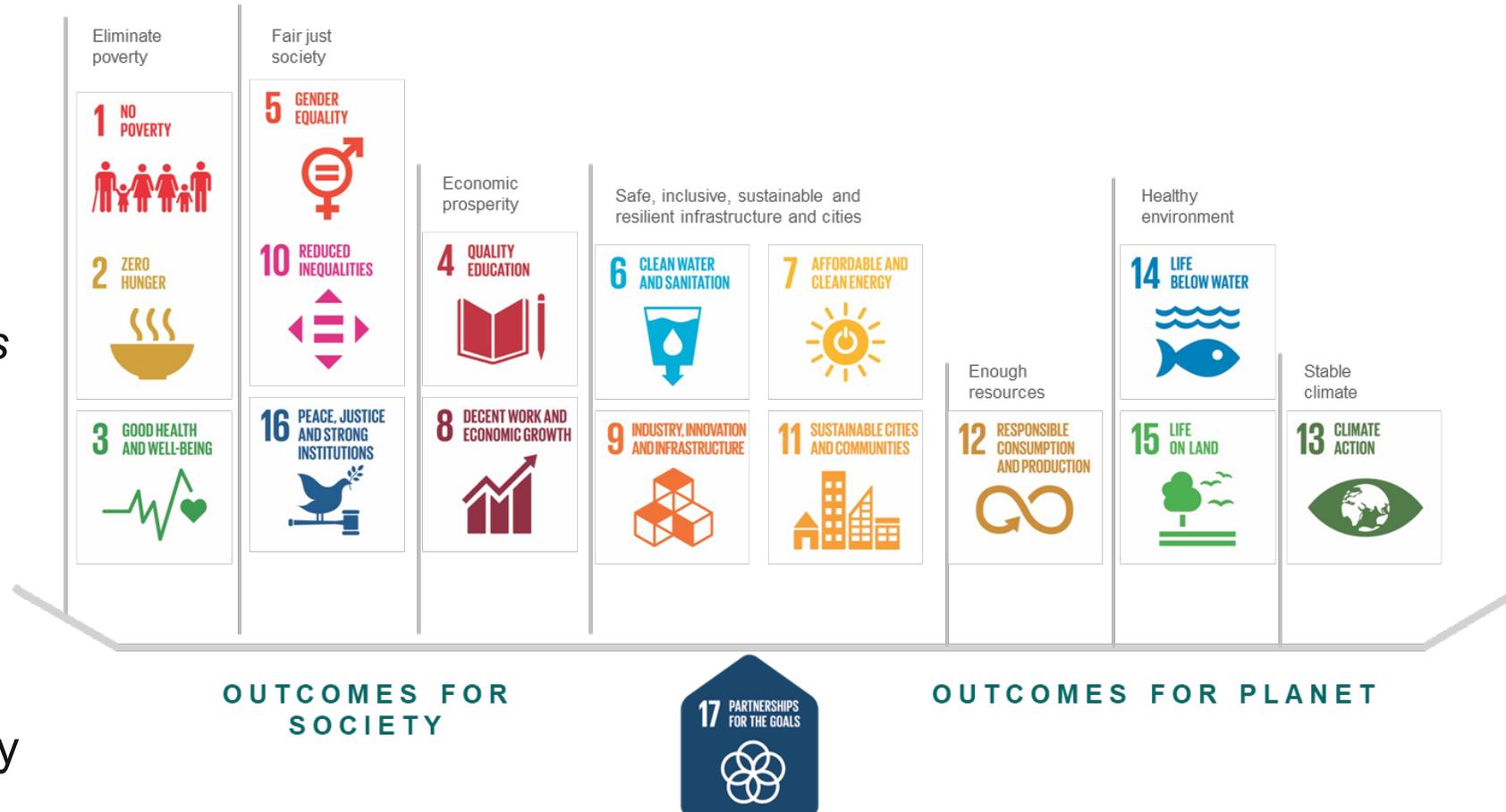
Inequality: seize the opportunity to move the dial



What next?

“When you’re immersed in lockdown, everywhere you look, the world is experiencing the same thing. There is a sense of solidarity. But then a portion of the world moves on from that to a different version and its stories are different. Do you still have this feeling of global solidarity and connection?”

UN SDGs as common aims for improved recovery, with infrastructure underpinning many of these.



Thank you

 @resilienceshift

 The Resilience Shift

resilienceshift.org
info@resilienceshift.org

ARUP

 Lloyd's Register
Foundation