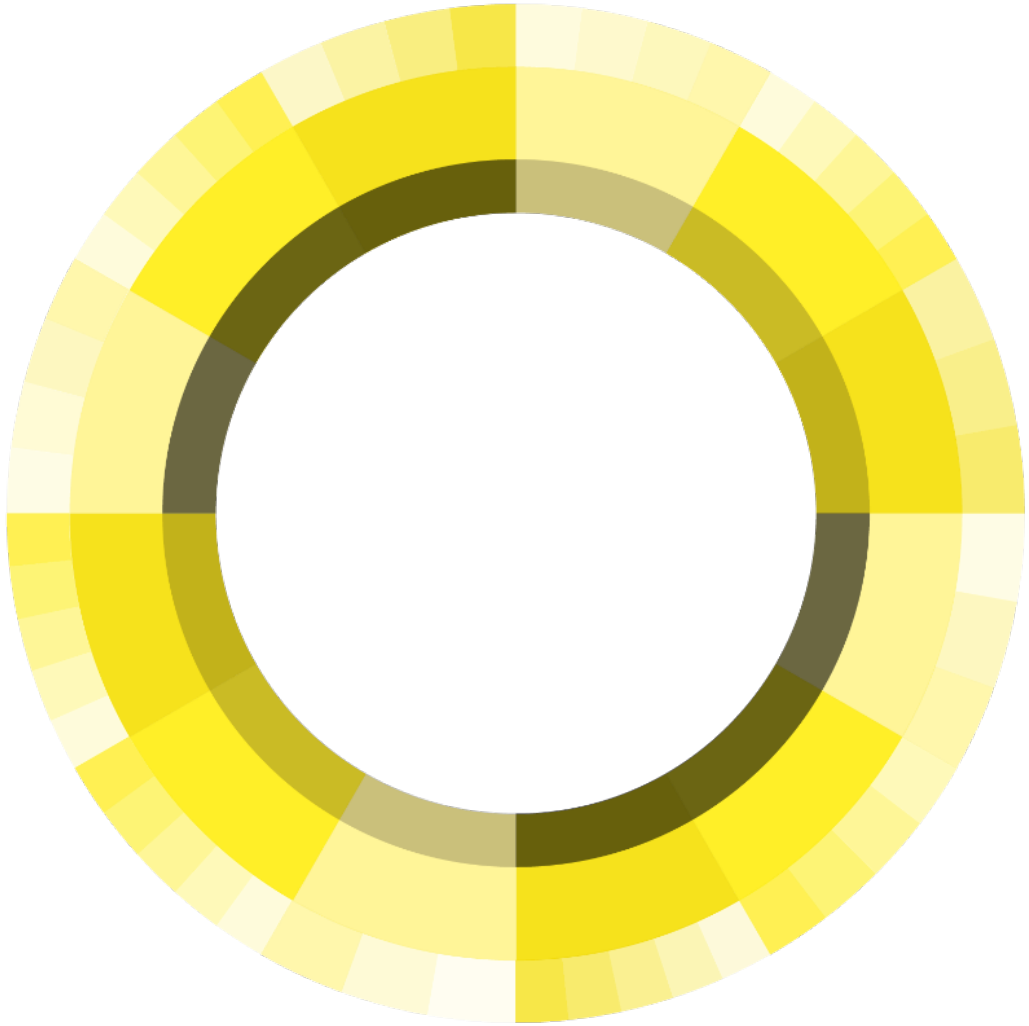
CITY RESILIENCE INDEX SESSION



22 February 2018
ADB / USG
LRC 1

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AGENDA

1. Introduction: concept, research and framework
2. Applications
3. Case Study- Surat
4. Impact and Outcome
5. Questions and discussion

INTRODUCTION: CONCEPT, RESEARCH AND FRAMEWORK

COMPLIMENTARY URBAN AGENDAS

Mitigation

Acting to **avoid or reduce the severity of something negative** like pollution from the emission of greenhouse gases

Adaptation

Modifying current practices or assets to limit the impact of climate hazards associated with climate change

Disaster Risk Reduction

Aims to reduce the damage caused by natural hazards like earthquakes, floods, droughts and cyclones, through an ethic of prevention.

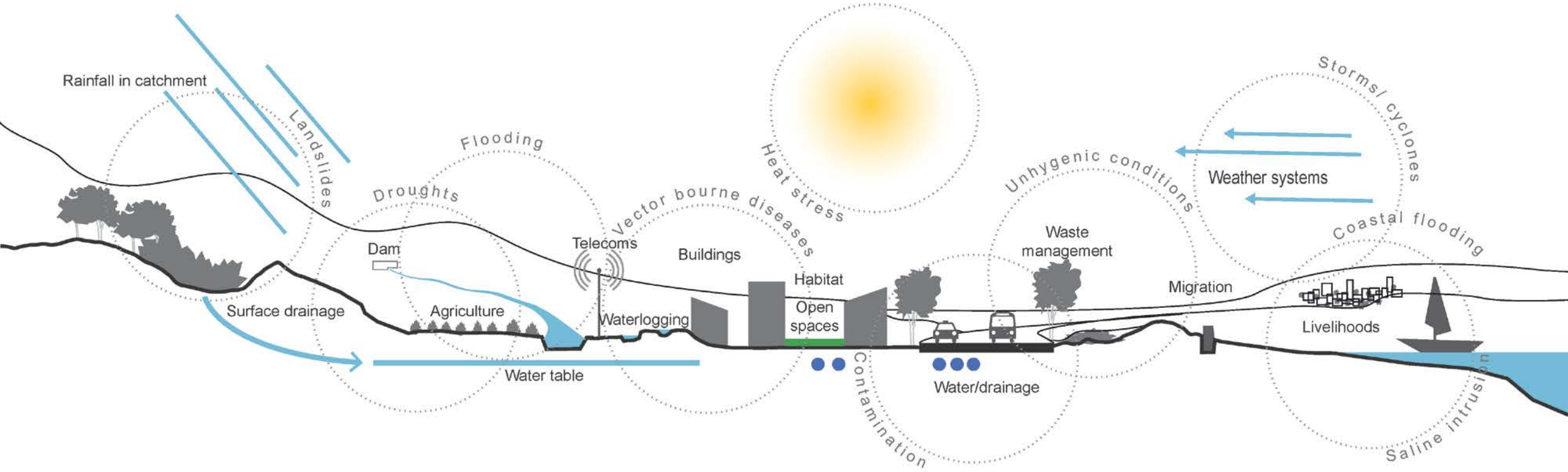
Sustainable development

Development that **meets the needs of the present, without compromising the ability of future** generations to meet their own needs.

City Resilience

Is the **capacity of cities to function**, so that the people living and working in cities – particularly the poor and vulnerable – survive and thrive in the face of shocks and stresses.

Cities rely on a complex web of institutions, infrastructure and information



CITY RESILIENCE INDEX

Cities rely on a complex web of institutions, infrastructure and information

….to function when faced with disruptive circumstances

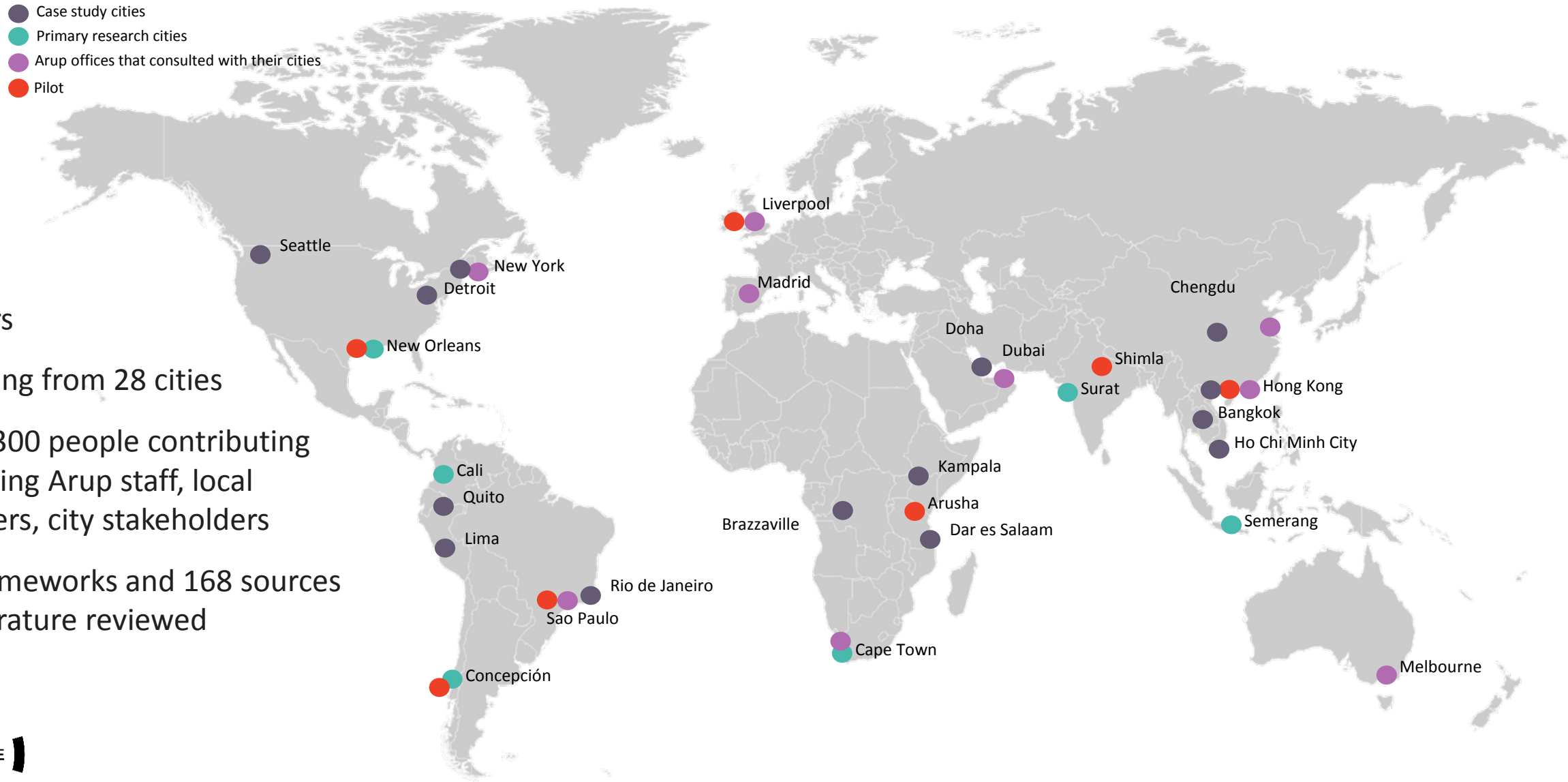
CITY RESILIENCE INDEX

Making city resilience

- Tangible
- Practical
- Globally applicable

CITY RESILIENCE INDEX

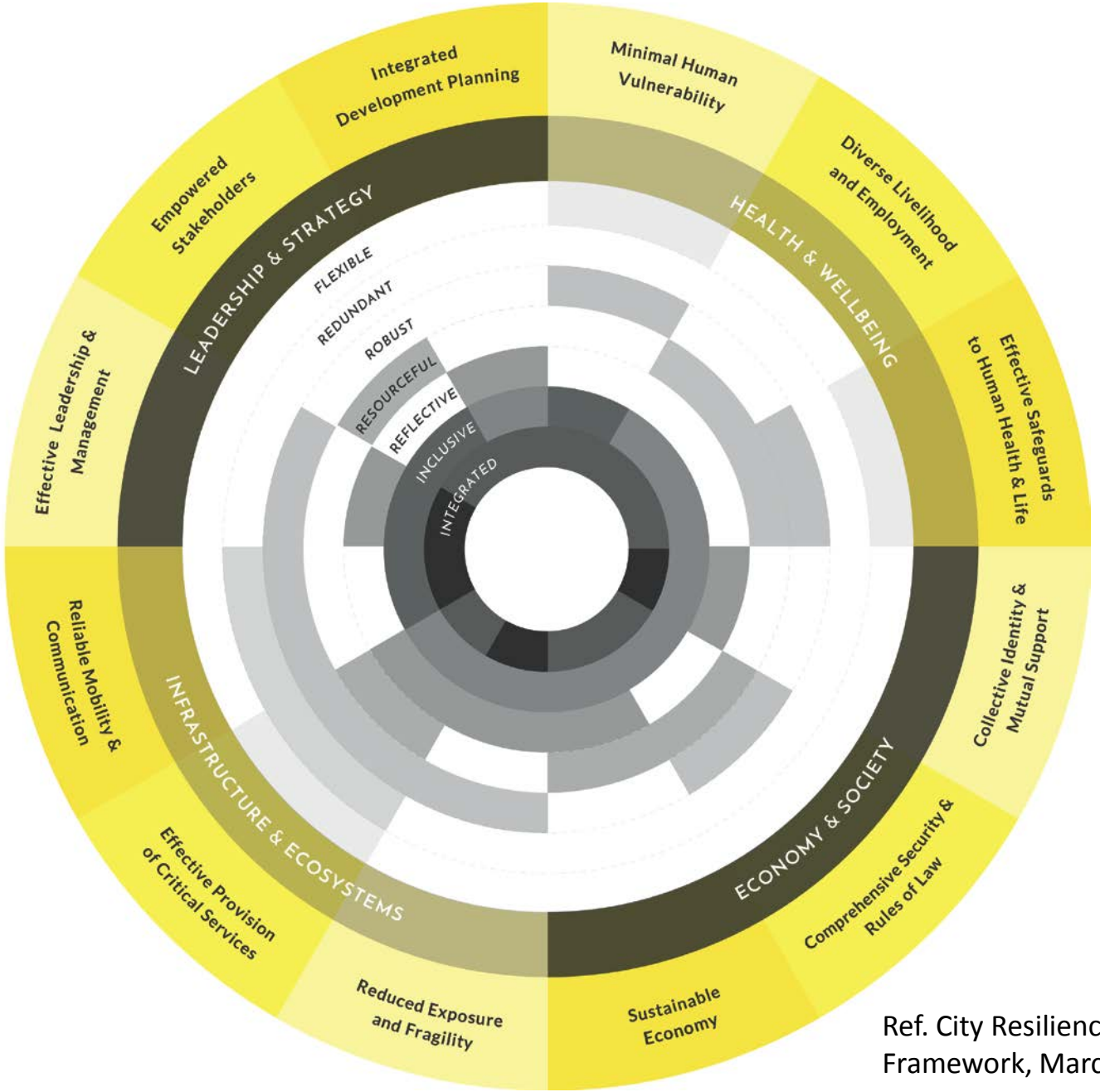
RESEARCH



- 3 years
- Learning from 28 cities
- Over 300 people contributing including Arup staff, local partners, city stakeholders
- 45 frameworks and 168 sources of literature reviewed

CITY RESILIENCE INDEX

CONCEPTUAL FRAMEWORK



Ref. City Resilience Framework, March 2014

HEALTH & WELL-BEING

1. Minimal human vulnerability

2. Diverse livelihoods & employment

3. Effective safeguards to human life and health

© Arup 2015

ECONOMY & SOCIETY

4. Collective identity & mutual support

5. Comprehensive security and rule of law

6. Sustainable economy

© Arup 2015

INFRASTRUCTURE & ENVIRONMENT

7. Reduced physical exposure

8. Continuity of critical services

9. Reliable communications & transport

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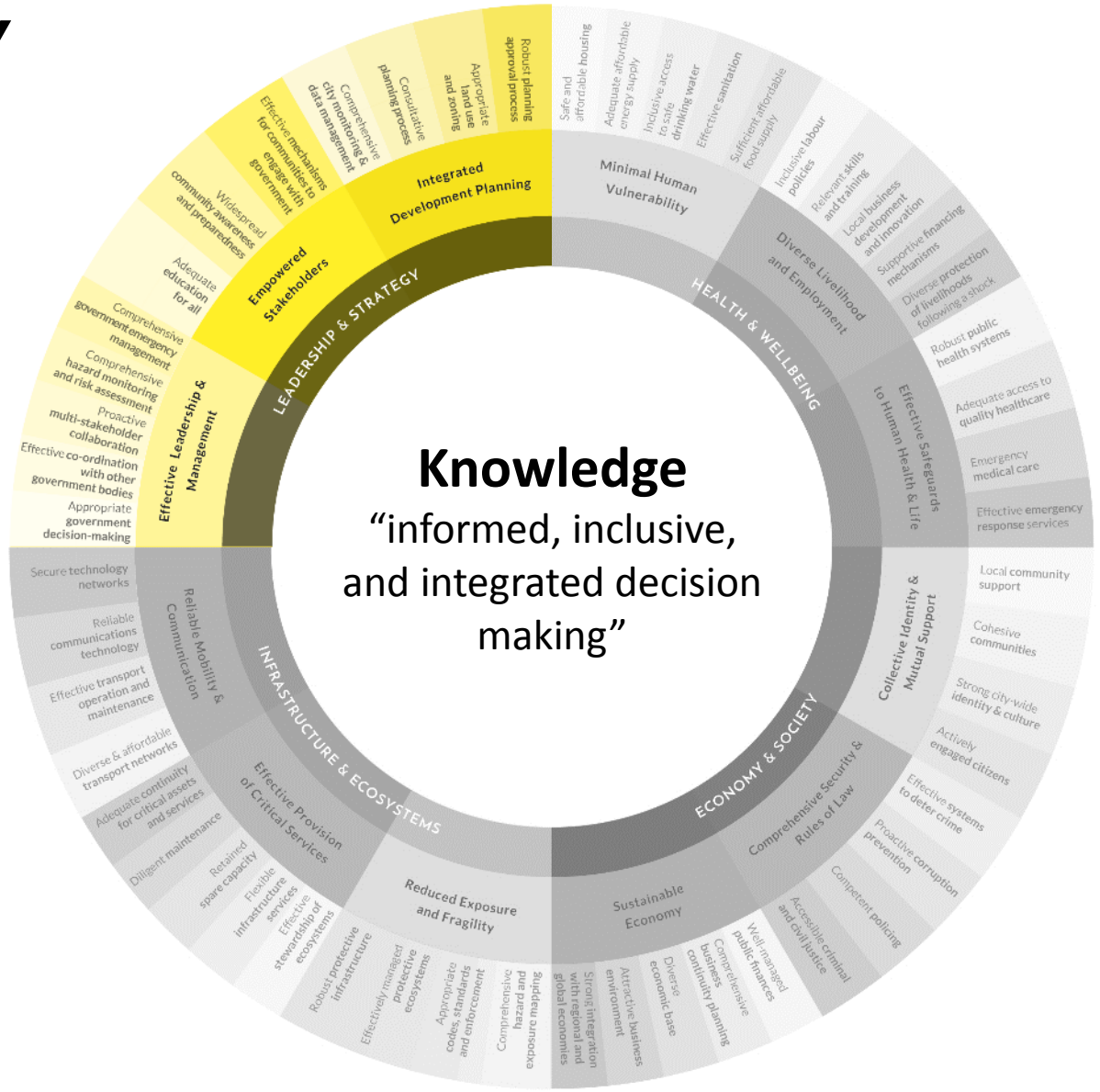
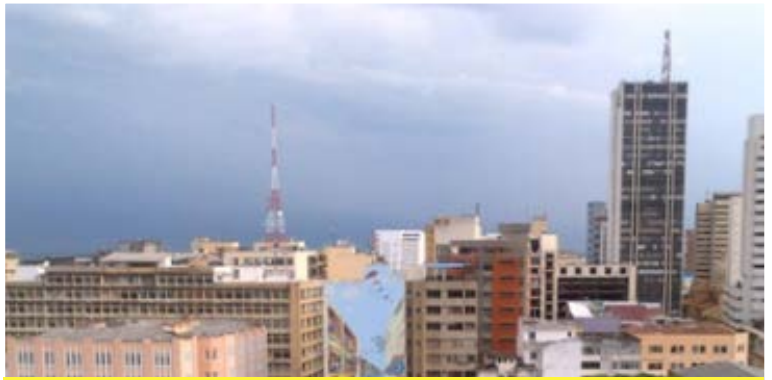
LEADERSHIP & STRATEGY



10. Effective leadership & management

11. Empowered stakeholders



12. Integrated development planning

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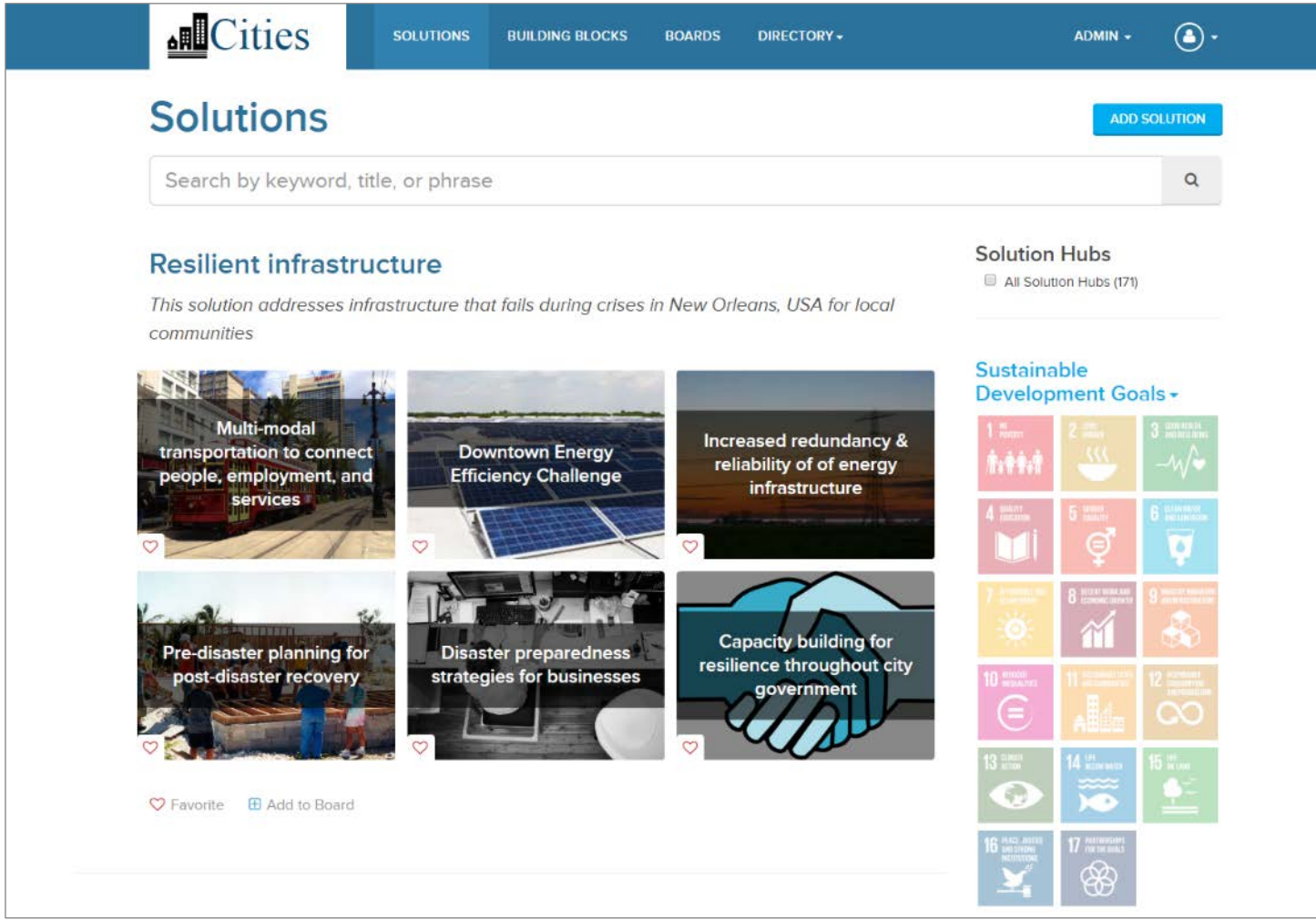
APPLICATION

RESILIENCE SOLUTIONS HUB

- A platform that hosts a database of crowd-sourced resilience solutions
- Solutions are obtained straight from the people who worked on them - contributed by resilience professionals and city users involved in planning or implementing solution
- User interface encourages serendipitous discovery of solutions and other resilience networks
- Resilience Exchange has adopted CRI as the preferred terminology for city resilience solutions



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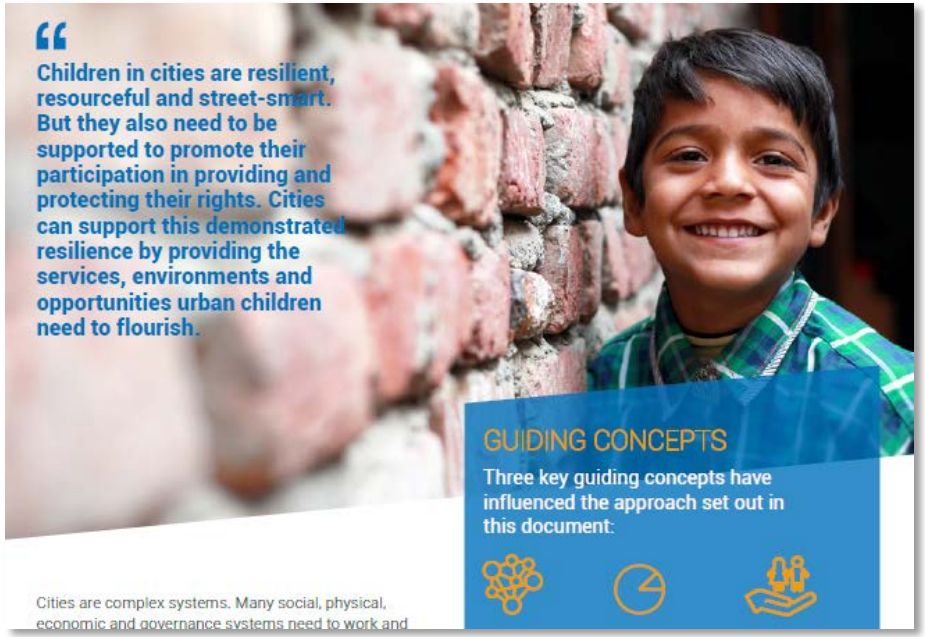
CHILD-CENTRED URBAN RESILIENCE

- Applying resilience concepts to particular communities

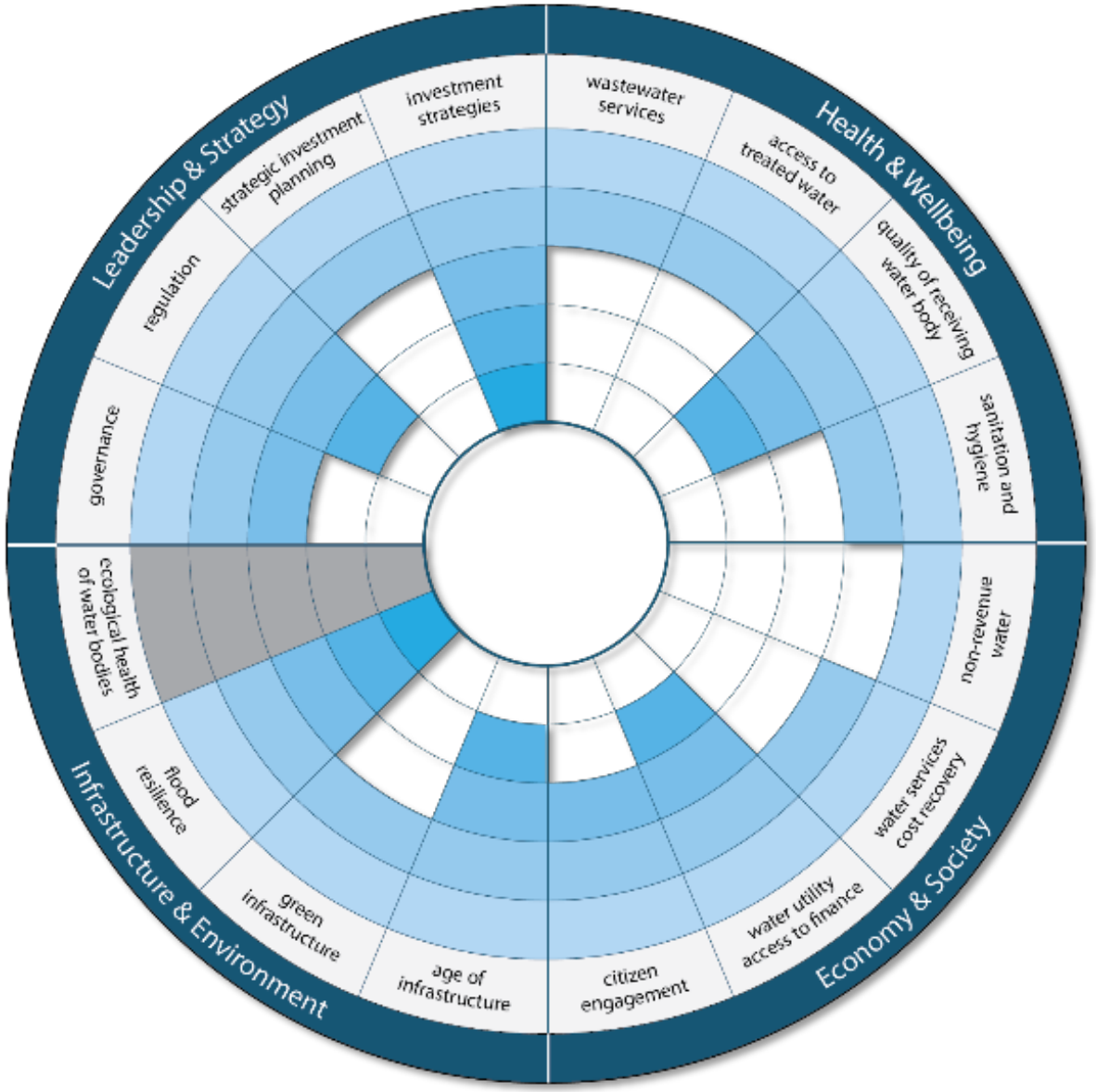


THINKING HOLISTICALY ABOUT URBAN WATER SYSTEM

City Water Index

“ Of the more than 1,000 applications for the 100 Resilient Cities Network, more than 60% indicated challenges with water – too much or too little – as critical resilience risks. There is tremendous opportunity for the cities in this cohort to provide lessons and expertise to the many cities around the world grappling with water challenges. ”

Andrew Salkin, VP 100RC



PARTNERSHIP WITH SYSTEMS APPROACH

1 Understand the water cycle at catchment scale

The water cycle is a natural system, usually heavily modified by human socio-economic activity, such as agriculture, urbanisation and the wider impacts of climate change. Analysis of the existing water cycle at catchment scale will identify high-level risks and benefits associated with its protection and enhancement.

2 Align with other drivers and development needs

Water may not be the primary driver for all stakeholders. Water-related actions may come forward as a result of other priorities, such as delivery of green infrastructure, improved amenity or climate change adaptation. Aligning the water cycle with other drivers, community priorities and potential investment/funding programmes will help to bring forward projects that are deliverable and maximise benefits to investors, the environment and wider society.

3 Identify partners and understand their priorities

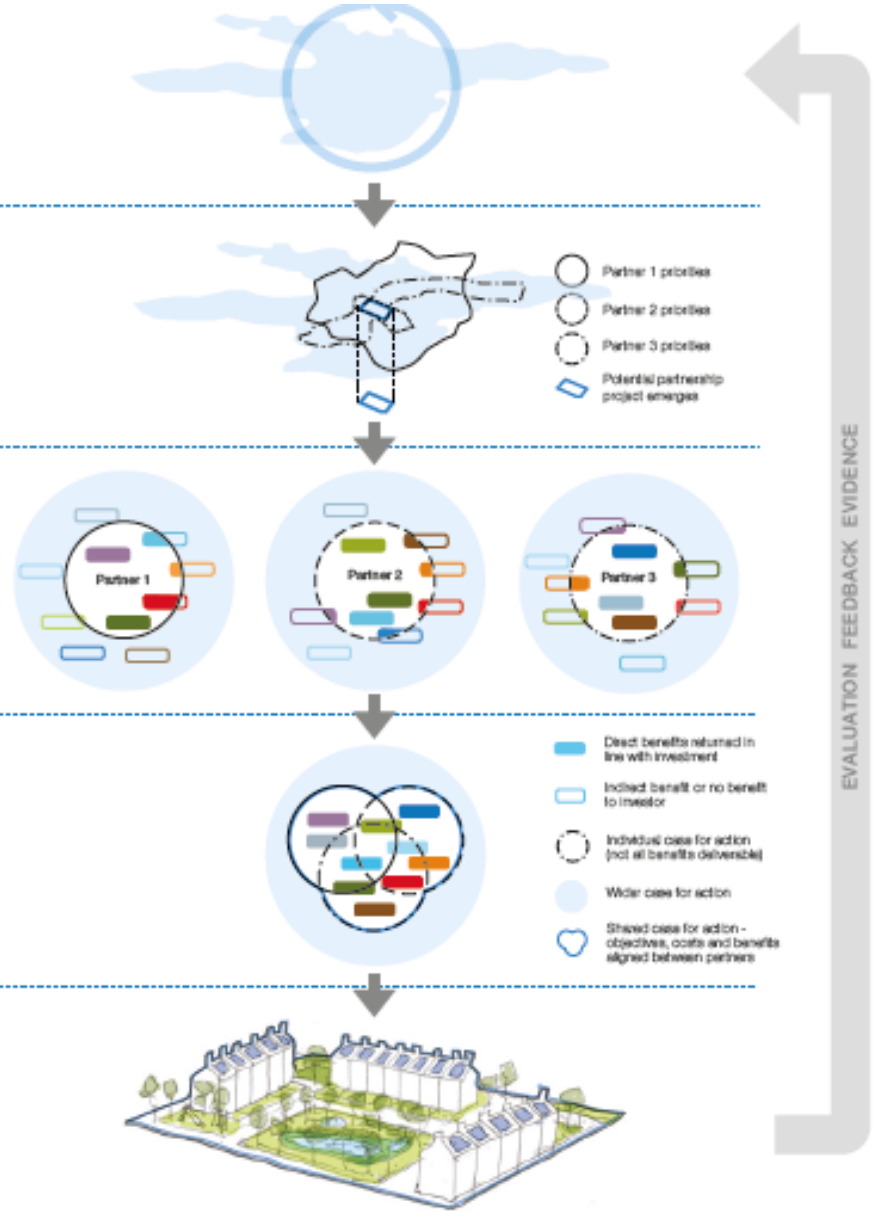
Having identified areas where agendas overlap, potential partners can be identified. It is important to understand the priorities of each partner. It is likely that each partner will have a partial case for action based on the direct benefits returned to their organisation. However, none are likely to be able to justify investment to deliver all of the potential benefits of a multifunctional water-related project. At this stage, predictive valuation of wider benefits using Payment for Ecosystem Services (PES), and Social Return on Investment (SROI) can help various partners to build a case.

4 Build a shared case for investment and action

By formulating a joint project it is possible to develop a scenario where objectives are aligned and costs are shared in proportion to the benefits returned. At this point it may be necessary to adjust the project objectives and scope and bring in other partners to bring expertise, share risk and investment costs. Through this process of collaboration and joint-working, an overall shared case for action and investment is created.

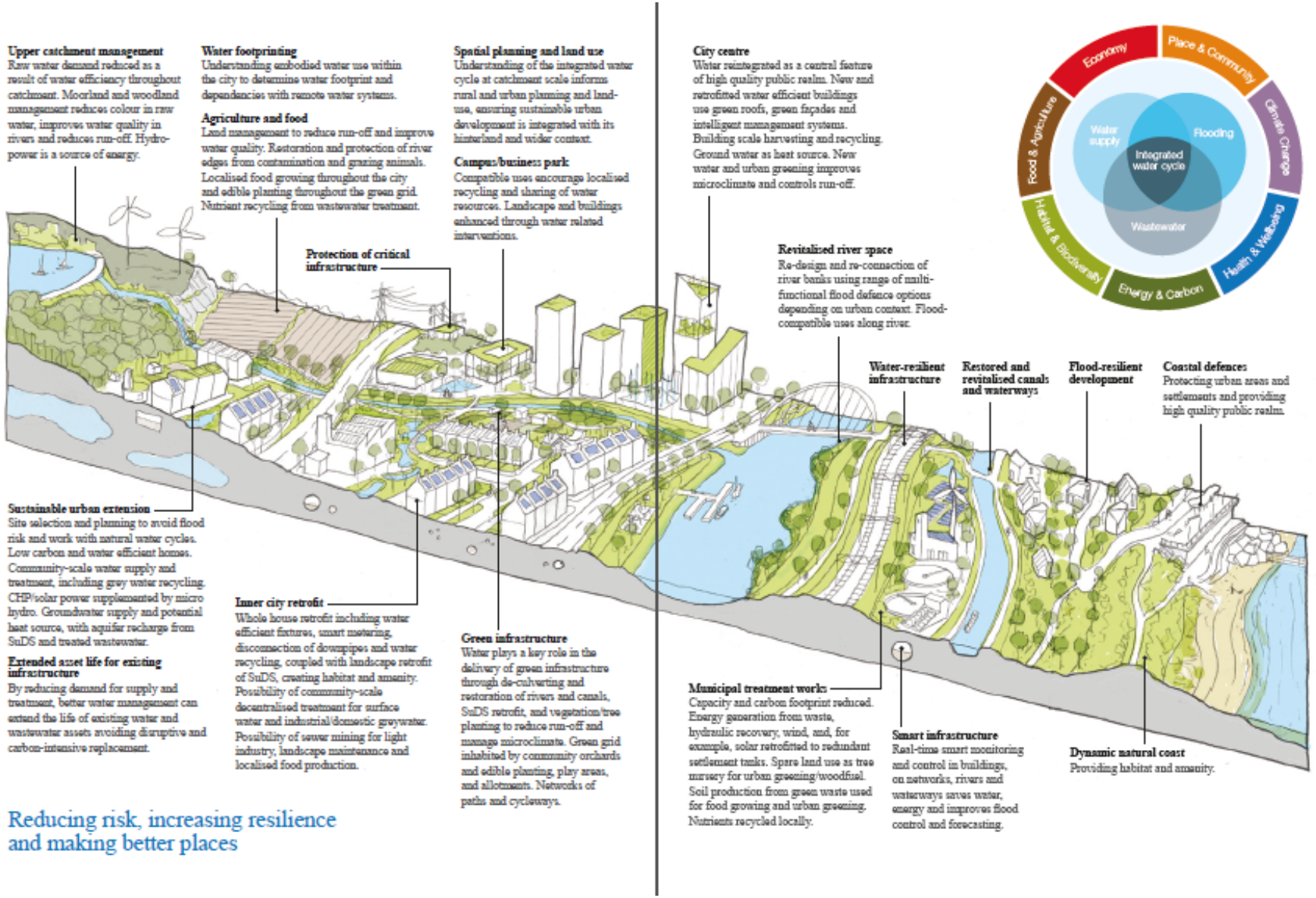
5 Delivery, maintenance, evaluation, feedback

It is important that whole life costs are considered when formulating projects and investment plans to ensure adequate budgets for ongoing maintenance. Delivery of projects on the ground will build an evidence base for multi-functional infrastructure projects. Predictive and post-project evaluation is important. Alongside analysis of water management benefits, post-project evaluation of wider benefits using techniques like PES and SROI can help to build an evidence base for future projects.



DESIGNING WITH WATER

- Model the urban water system holistically beyond traditional sector and geographic silos
- By placing a re-integrated water cycle at the heart of sustainable planning, design and delivery, we ensure actions taken to protect and enhance the water cycle can deliver multiple wider benefits



WATER SENSITIVE URBAN PLANNING

In the UK, Sheffield City Council is working with the Environment Agency on an ambitious £83m investment programme to protect the city from flooding. To support this, Arup is developing business cases and project appraisals for flood protection schemes on the Upper Don and Sheaf catchments, as well as preparing high-quality consultation material for the council.

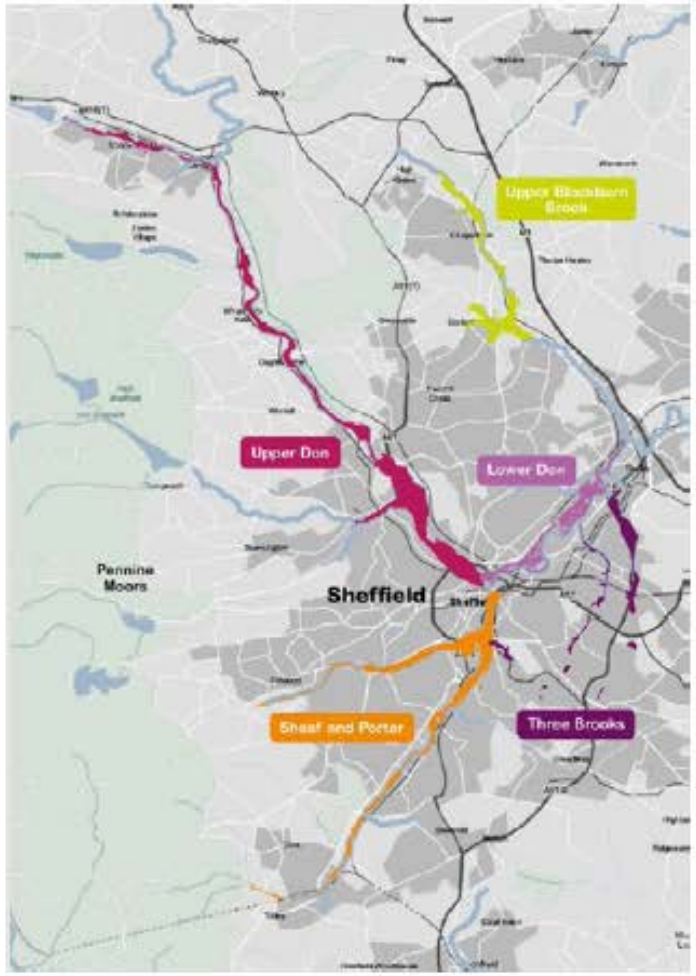
Sheffield sits at the foot of the Pennines and its fast-flowing rivers make it vulnerable to flooding. Options for the flood protection schemes include creating flood storage areas in open spaces such as parks and woodland. Building new flood defences is also under consideration, as is tree planting and moorland restoration to keep rainwater in upland areas and reduce flooding downstream in the city.

The investment programme aims to protect 6,000 homes and 1,760 businesses, safeguarding 32,700 jobs and, over the lifetime of the programme, preventing £1bn of damage to the city. The programme will also play a key role in enabling growth. It aims to protect 46 hectares of riverside brownfield land for development, creating 15,000 jobs. It will enable 27,000 new homes to be built. And by regenerating 30ha of riverside land it will create new tourism and recreation opportunities – as well as enhancing biodiversity.

32,000
jobs safeguarded

£ 1 Billion Pounds
Preventing £1 billion of damage to the city

Visit
Website



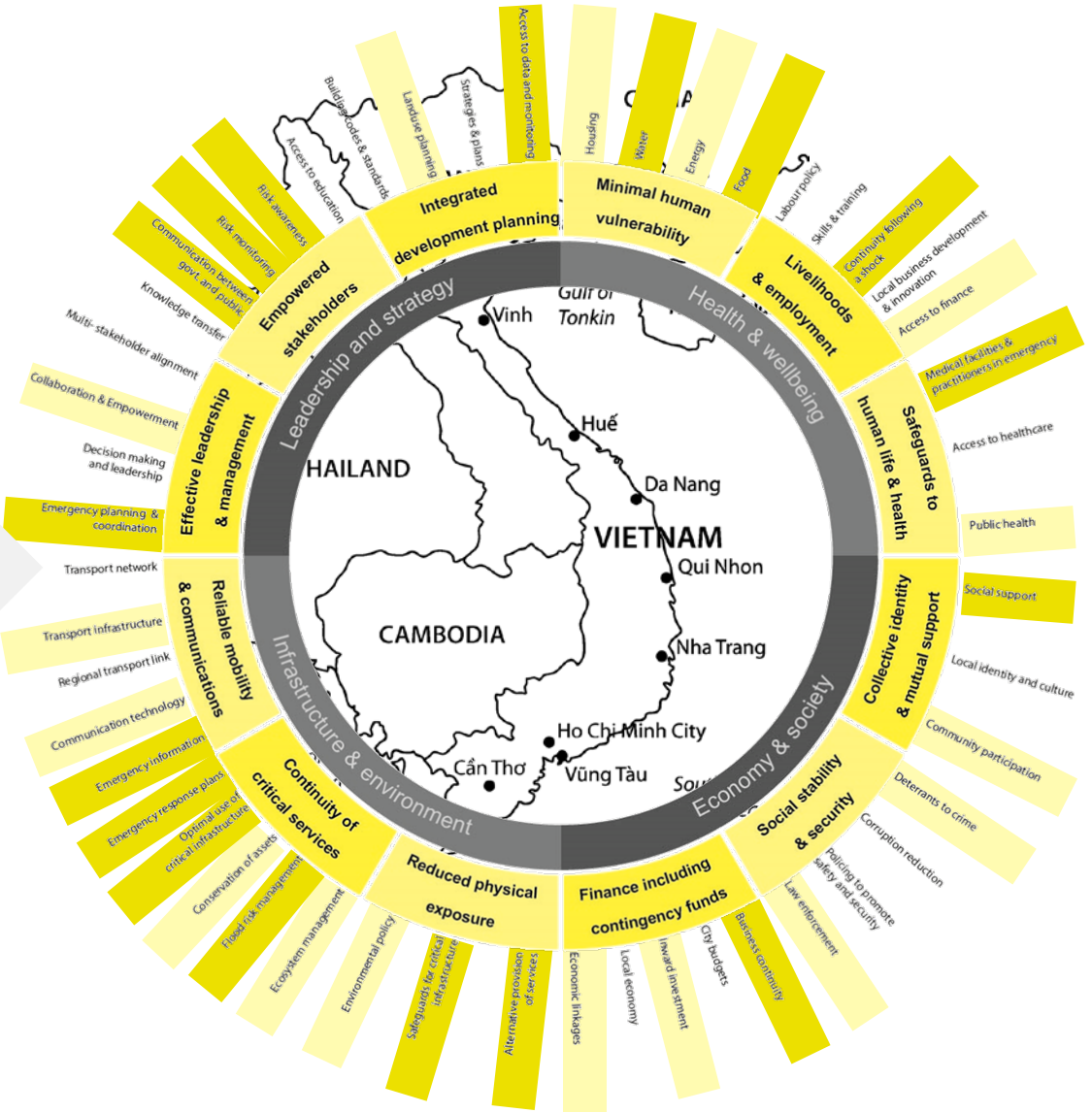
LOCALISING TO CONTEXT

VUDA resilience tool

- Adapting global metrics in CRI to Vietnam-specific standards and data conventions

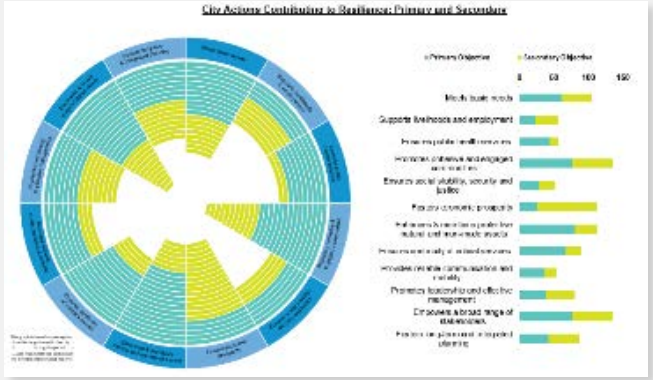
Dimensions and goals
no change

Indicators and questions
review for relevance based on local context, including shocks and stresses

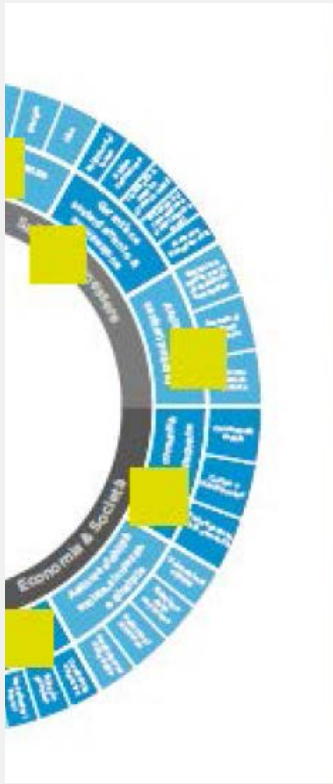


TOOLS & PROCESSES

Mapping Tools (excel based)

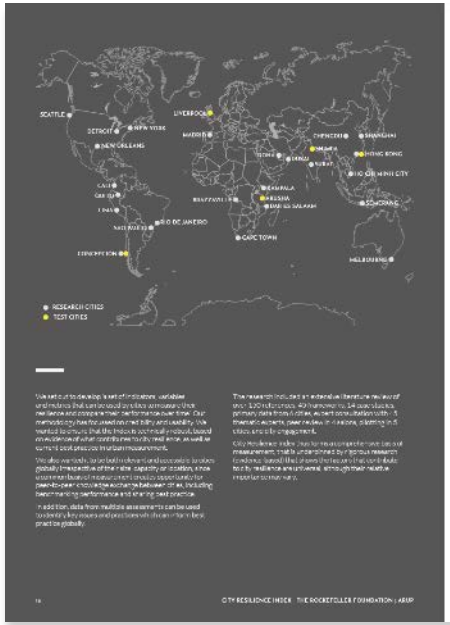


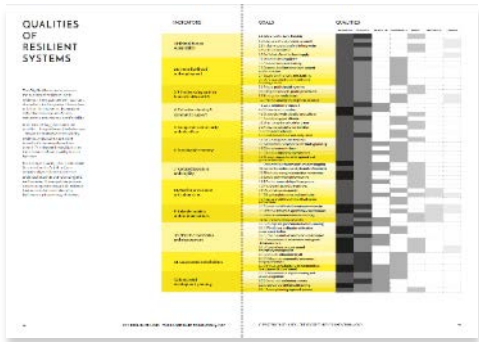
Workshop design



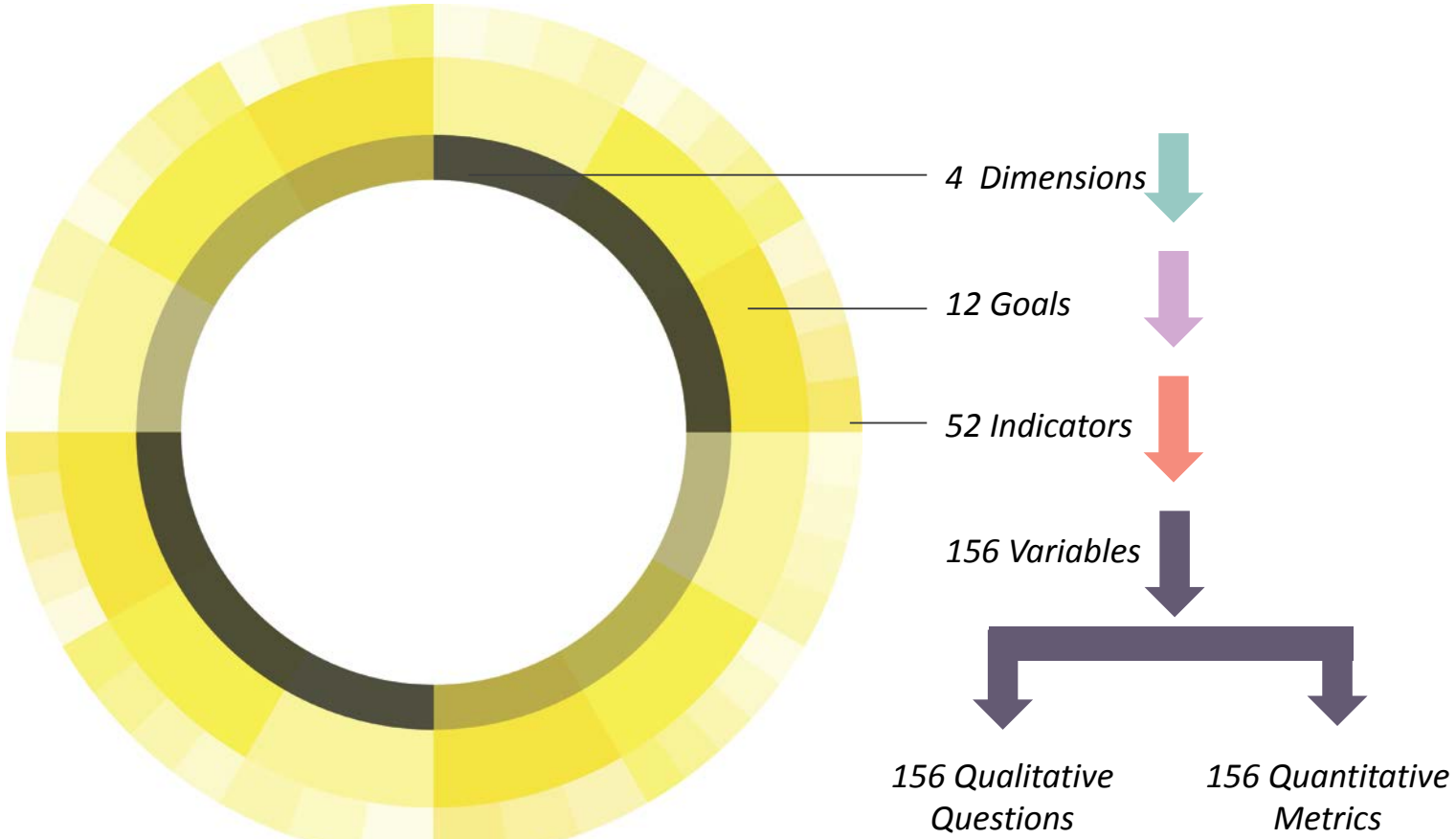
CITY RESILIENCE INDEX

COMMUNICATION AND CAPACITY BUILDING





DATA, MEASUREMENT



156 variables **measure the extent** to which the resilience indicators occur in a city.

2-5 questions help observe the performance of an indicator through two types of response: qualitative and quantitative.

These two perspectives provide a **judgement-based** assessment against a best case – worst case scenario …

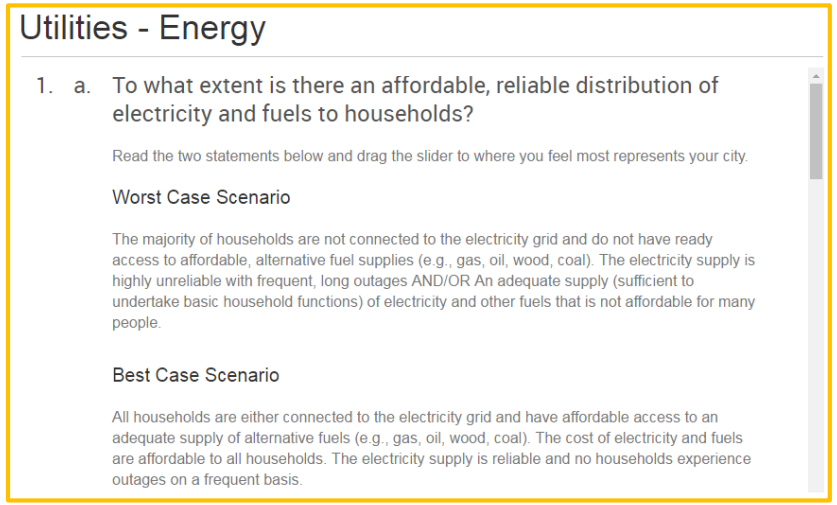
… and a **performance-based assessment** against a global benchmark.

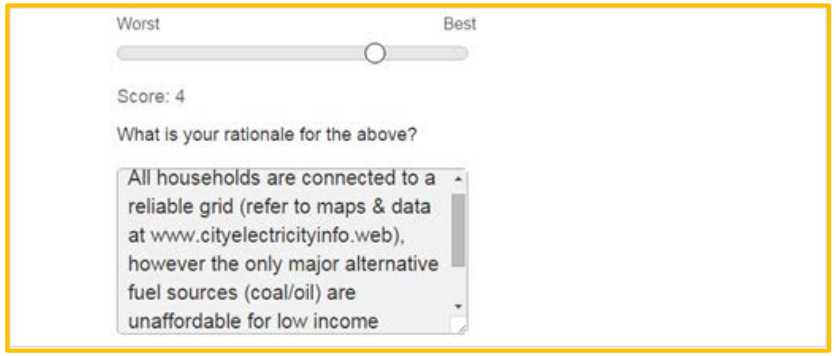
CITY RESILIENCE INDEX

MEASURING PERFORMANCE

INPUTS

156 questions within
24 topics





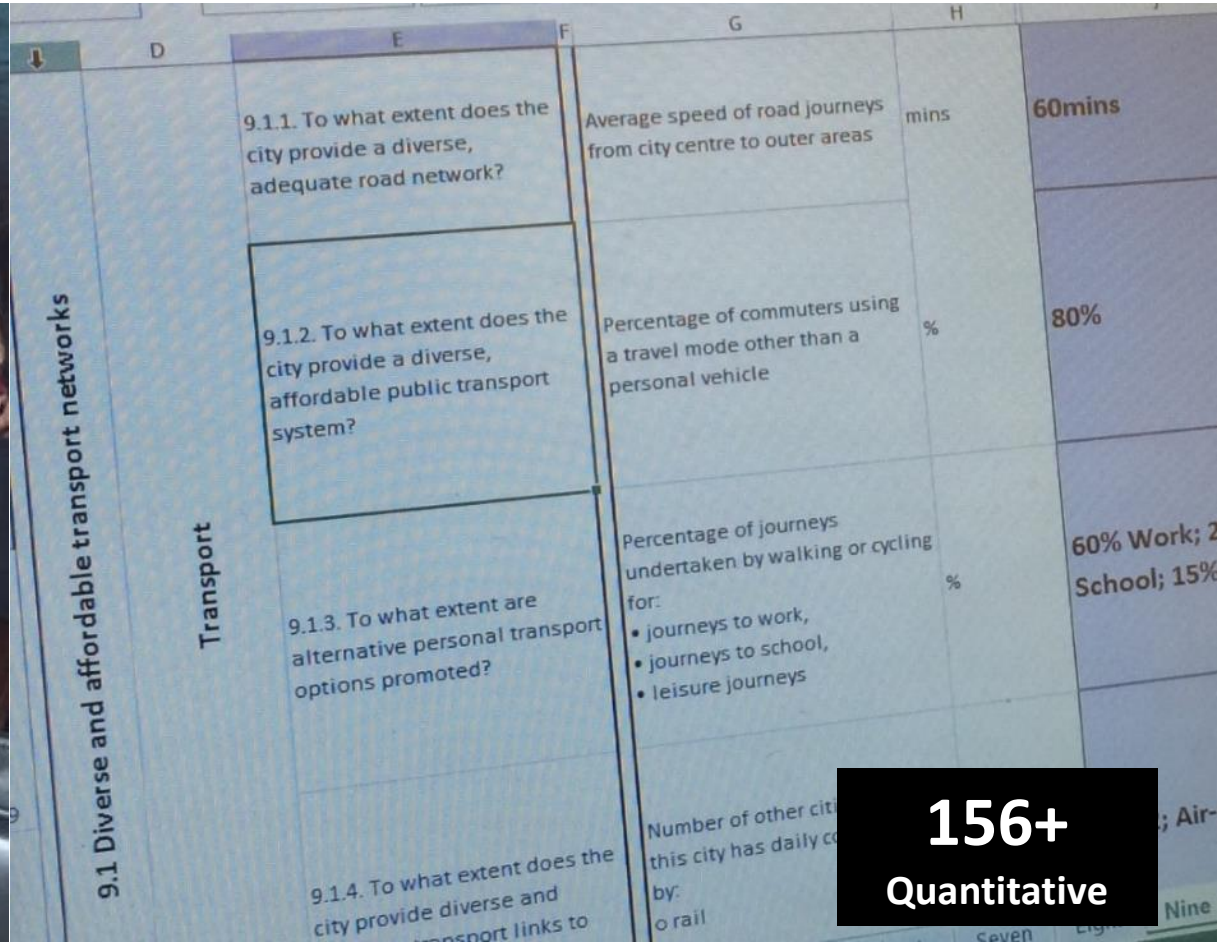
OUTPUTS

Resilience Profiles

CITY RESILIENCE INDEX

QUALITATIVE & QUANTITATIVE DATA

156
Qualitative

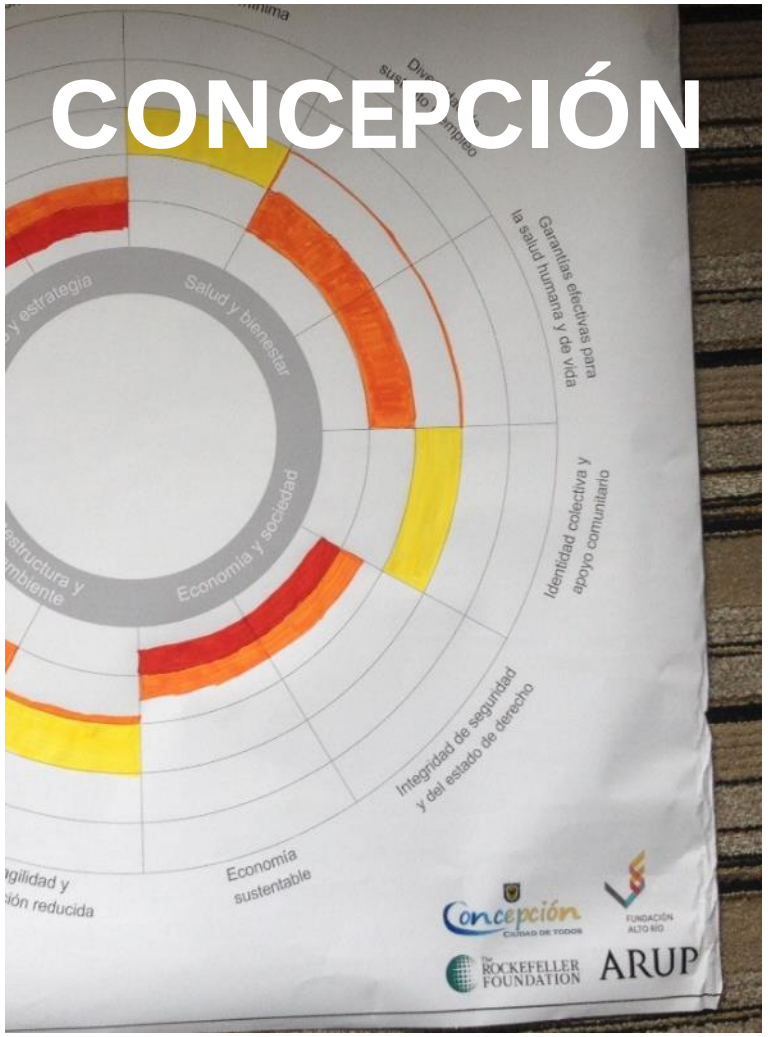


156+
Quantitative

RESILIENCE WORKSHOPS IN EACH CITY

48
Workshop attendees Shimla

OUTPUT: RESILIENCE PROFILES



CASE STUDY

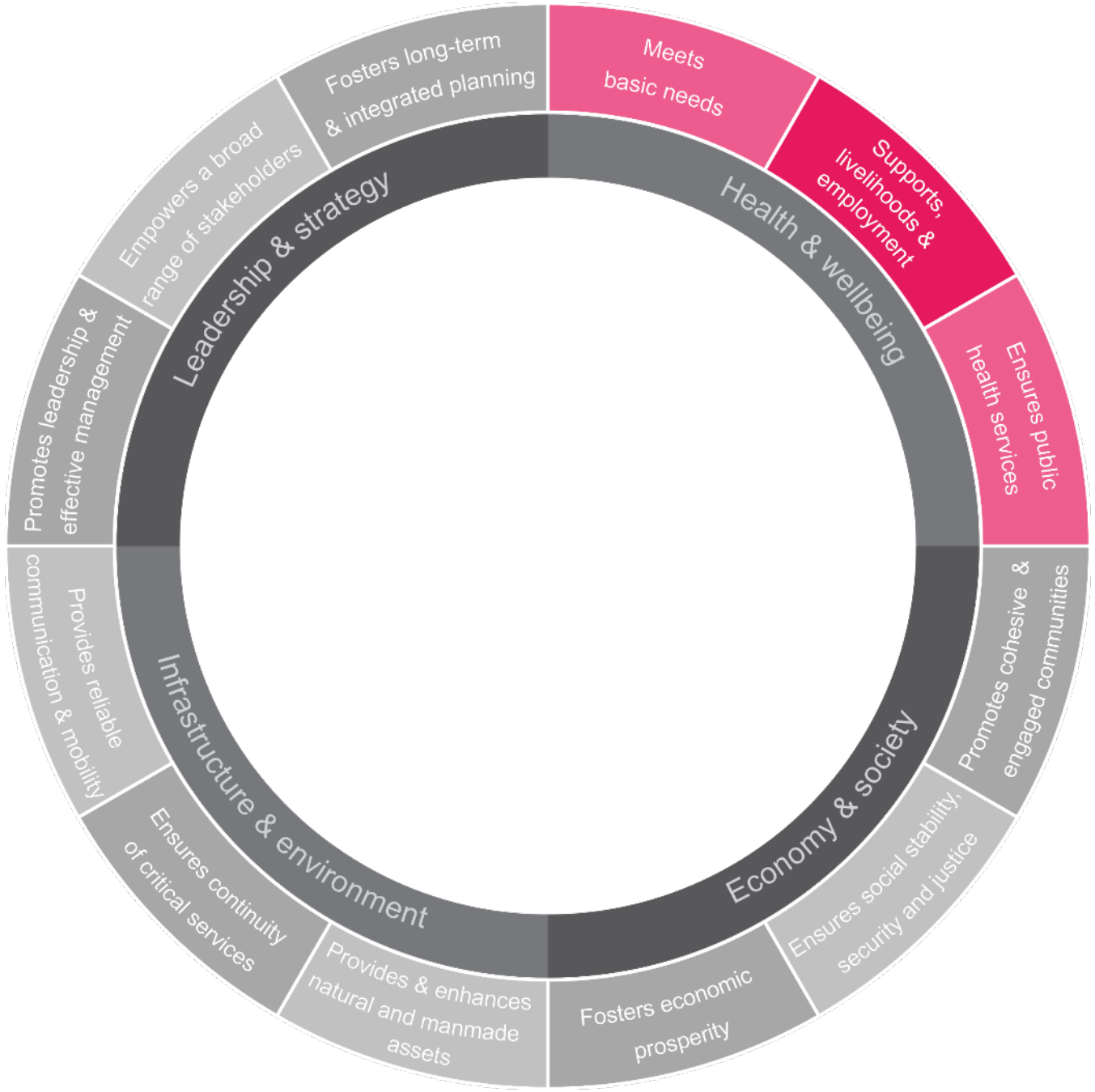
CASE STUDY: SURAT

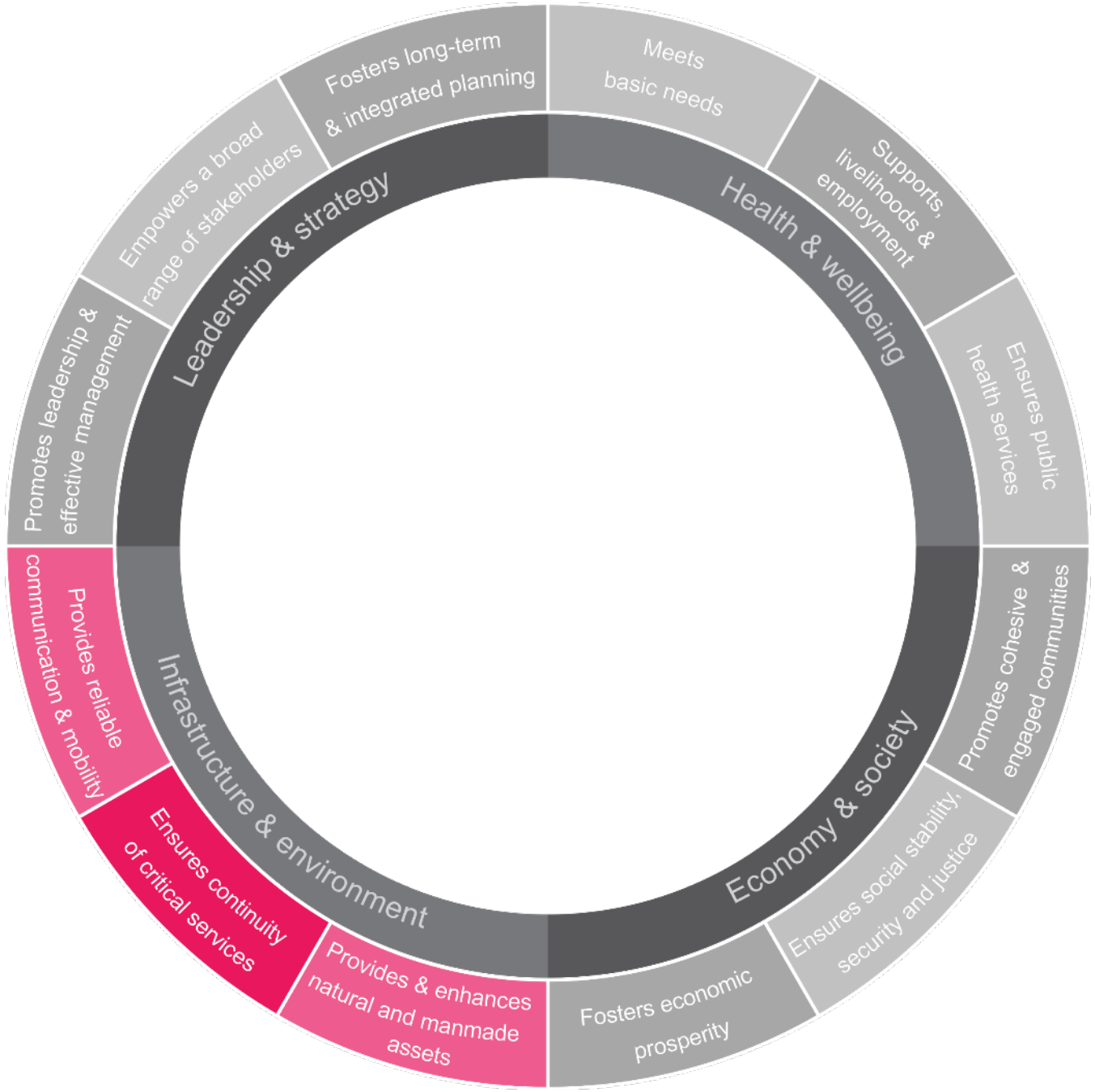

Coaching For GPSC, UPSC
PSI, BANK, TET, TAT & OTHER
COMPETITIVE EXAMS
2nd Floor, Ankur Shopping Centre, Adajan
Surat Ph: 0261-6456456
M: 9909439298,
98259 81566, 99791 46131
H.O.-Ahmedabad
Ph: 079-65424245
SAMARTH Holidays
DOMESTIC PACKAGE & INTERNATIONAL HOLIDAY PACKAGE, BULK HOLIDAY PACKAGE,
TAILOR MADE PACKAGE, GROUP BOOKING, AIR TICKETS & TRAIN TICKETS.
GOA @
Rs.4500/-
Per Person
On The Beach
KALI FASHION
INTERNATIONAL
IMPORT & EXPORT
MY MOBILE
Best Brands Best Rates
SAMSUNG
NOKIA
iPhone
SONY
htc
Karbonn
INTEX
XOLO
SHAM XEROX
COPY CENTER
Mo.: 98241 37498
apollo
Continental
CEAT
BIRLA TYRES
TVS TYRES
NOKIA


RESILIENT
SURAT


127


₹1000
₹500


Leadership & strategy
Health & wellbeing
Economy & society
Infrastructure & environment
Fosters long-term & integrated planning
Meets basic needs
Supports, livelihoods & employment
Ensures public health services
Promotes cohesive & engaged communities
Ensures social stability, security and justice
Fosters economic prosperity
Provides & enhances natural and manmade assets
Ensures continuity of critical services
Provides reliable communication & mobility
Promotes leadership & effective management
Empowers a broad range of stakeholders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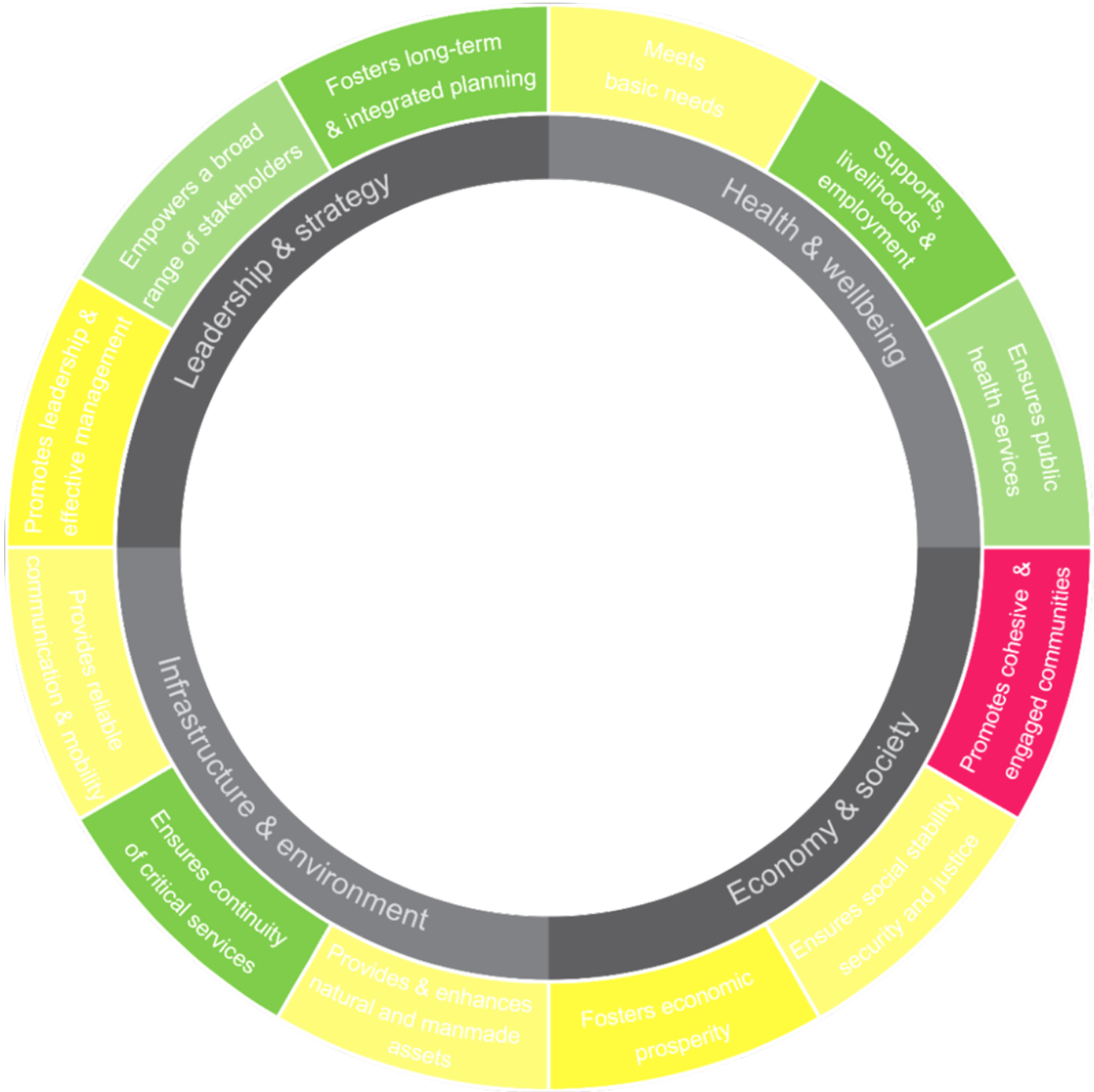
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IMPACT & VALUE

WHAT VALUE HAS THE CRI PROVIDED TO CITIES?

Cities that have completed the CRI assessment tell us that the CRI:

- Informs / supports integrated planning and investment decisions
- Communicates knowledge about resilience concepts and actions
- Enables monitoring / measurement
- Builds credibility
- Empowers stakeholder engagement

“2017 will become the year that we say that for the first time we measured resilience in cities. This is the baseline in cities, and we will be able to compare and see the change in performance in our cities over time. ”

Santiago Uribe Rocha, Chief Resilience Officer, Medellin

INFORMING/SUPPORTING INTEGRATED PLANNING AND INVESTMENT DECISIONS

“ We’re looking at gaps in our efforts and using the CRI assessment to inform the future work that we’re doing. ”

Marissa Aho, Chief Resilience Officer, Los Angeles

“ The CRI assessment was a really interesting process of reflecting on what we are measuring and what we are not, and its challenging cities to go beyond into new areas of resilience work.’

Santiago Uribe Rocha, Chief Resilience Officer, Medellin

COMMUNICATES KNOWLEDGE ABOUT RESILIENCE CONCEPTS AND ACTION

“ We hope that it will help support strategic communication of resilience within the city, and make it more transparent, and help people understand what the different aspects of resilience are.”

Daniela Torres, Deputy Chief Resilience Officer, Mexico City

ENABLES MONITORING / MEASUREMENT

“ Before, resilience was a beautiful but too theoretical of a word.

When you measure resilience, the stakeholders said ‘oh, this is helping us to understand how resilient cities are and how much we can improve’ in terms of implementing programs, projects and actions, and developing the strategy. ”

Santiago Uribe Rocha, Chief Resilience Officer, Medellin

“ It reinforces the idea that you have to measure; you really have to measure every aspect of the performance of the city.

If you don’t do it, you’re wasting time and money.

And this is one of the most important values of the CRI. Through the time you take to measure things, you’re able to show stakeholders that the money they put in pays for the effort and achieves the delivery that they’re looking for in implementation. ”

Santiago Uribe Rocha, Chief Resilience Officer, Medellin

ENABLES MONITORING/MEASUREMENT

“ We thought it was an excellent opportunity to have a check up on the city.

It has been one and a half years since we launched our resilience strategy and its been two or three years since we completed our original diagnostic, so the CRI helped to identify how we have evolved since that point?

It would be nice to have a baseline and to have an annual or biannual assessment. ”

Johannes Gregersen, Deputy Chief Resilience Officer, Vejle

ENABLES MONITORING / MEASUREMENT

“ Using the CRI was an opportunity to provide an input for the Monitoring, Reporting and Verification system that is one of the key initiatives that we’re trying to push in the first year of out resilience strategy.

It also provided an opportunity for us to explore areas that were not included in the strategy. ”

Daniela Torres, Deputy Chief Resilience Officer, Mexico City

EMPOWERS STAKEHOLDER ENGAGEMENT

“ It s a nice way to keep the discussion on resilience going in the broader conversation with the city.

We brought together a lot of stakeholders and talked about resilience and what it meant in their domains, sectors and silos, and it was a great opportunity for a great discussion with the fire department, with the police, and so on. ”

Johannes Gregersen, Deputy Chief Resilience Officer, Vejle

“ The conversations we’ve had with our own team members has been the most valuable part of this process. ”

Marissa Aho, Chief Resilience Officer, Los Angeles

“ The value is in strengthening the stakeholder engagement process – the stakeholders feel for the first time there is something concrete to talk about resilience. ”

Santiago Uribe Rocha, Chief Resilience Officer, Medellin

EMPOWERS STAKEHOLDER ENGAGEMENT

“ The CRI was an opportunity for us to convene new stakeholders that had not been involved in the process of creating our resilience strategy. ”

Daniela Torres, Deputy Chief Resilience Officer, Mexico City

COMMON TERMINOLOGY TO EMBED RESILIENCE THINKING GLOBALLY

100 RESILIENT CITIES

CITY RESILIENCE INDEX

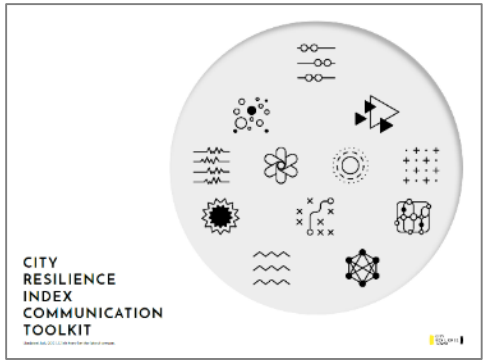
WHAT NEXT?

CRI RESOURCES

To communicate about the City Resilience Index, understand the research going into it, and train Team Leaders and Team Members to carry out the Assessment, the following resources are available

Visit the CRI website
for information on how the CRI can help your city be more resilient

Read the research
to understand how the CRI was developed, and more information on how the Assessment was developed



Download the Training Toolkit and Communications Toolkit
to access guidance, training material, tools, and templates for carrying out a CRI Assessment in your city, or to communicate about the CRI with stakeholders

CITY
RESILIENCE
INDEX

WHAT NEXT

1. Sharing CRI knowledge and tools in the public domain
2. Scaling up the adoption of CRI
3. Partnerships with city networks and individual cities
4. Diverse resilience-based tools and service offer

QUESTIONS AND DISCUSSION

What can a holistic systems approach to resilience do for you?