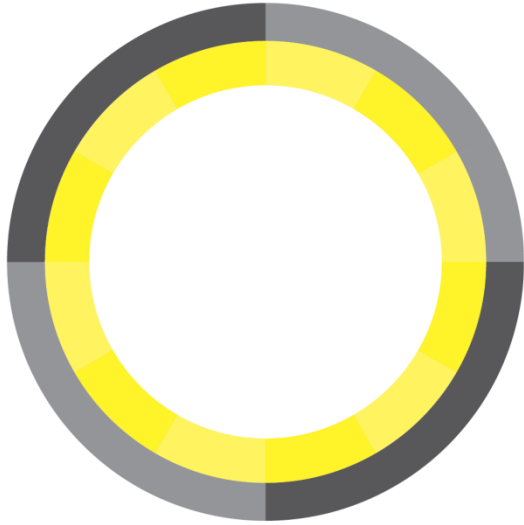


How to Build a Resilient City: The City Resilience Framework

The Rockefeller Foundation
100 Resilient Cities
Arup

Nancy Kete, PhD
Women in Clean Energy Symposium
Sept 17th 2014





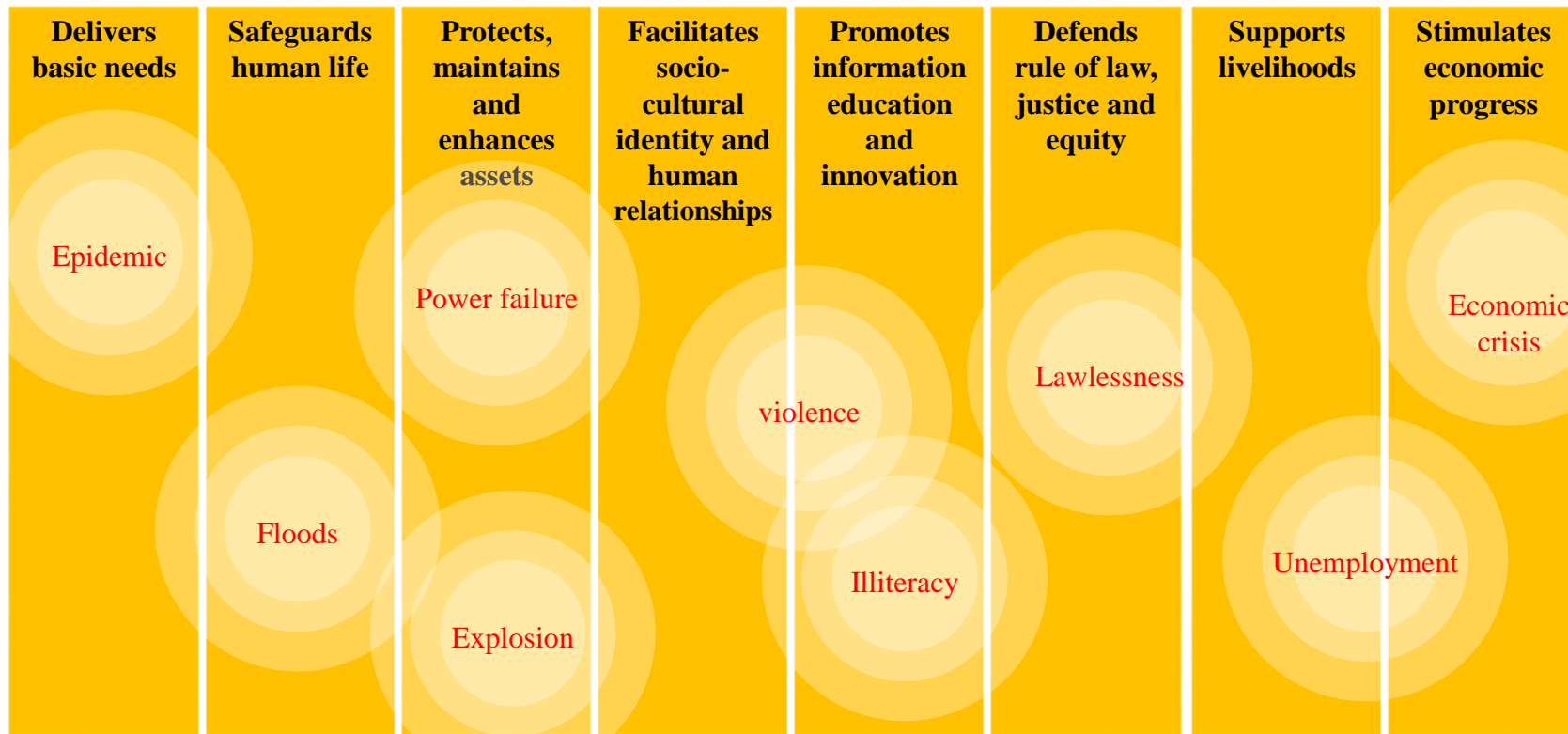
“By April 2014, to **articulate urban resilience** in a measurable, evidence-based and accessible way that can inform urban planning, practice, and investment patterns which better enable urban communities (e.g. poor and vulnerable, businesses, coastal) to survive and thrive multiple shocks and stresses.”

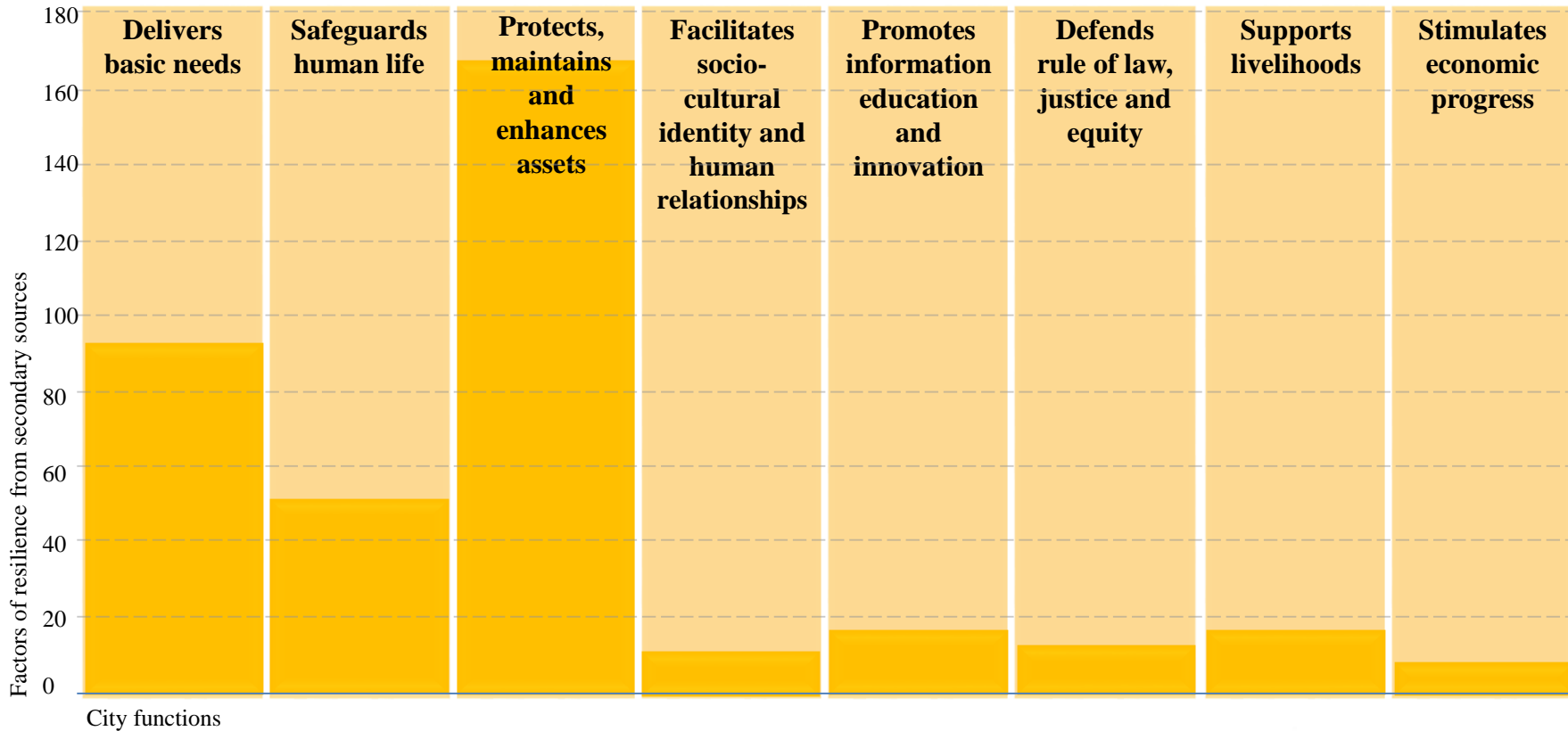
Opportunity Statement, February 2013

ability
system
change
capacity
community
function
shocks
maintain
self-organise
manage
adapt
impact
systems
stress
absorb
sustainably
reorganise
climate
structure
continuing
development
sustainable
innovation
different
basic
bounce-backability
livelihoods
occasions
disastrous
continue
respond
readiness
within
infrastructure
users
ecological
elements
events
things
persist
fundamental
amount
bear
social
use
resources
environmental
disturbance
characteristics
relationships
retain
structures
new
assessment
communities
face
without
withstand
certain
disaster
disturbances
regularly
changing
sustainability
controls
recovery
response
learn
functions

“In order to get a grip on it, one must be able to relate resilience to other properties that one has some means of ascertaining, through observation.”

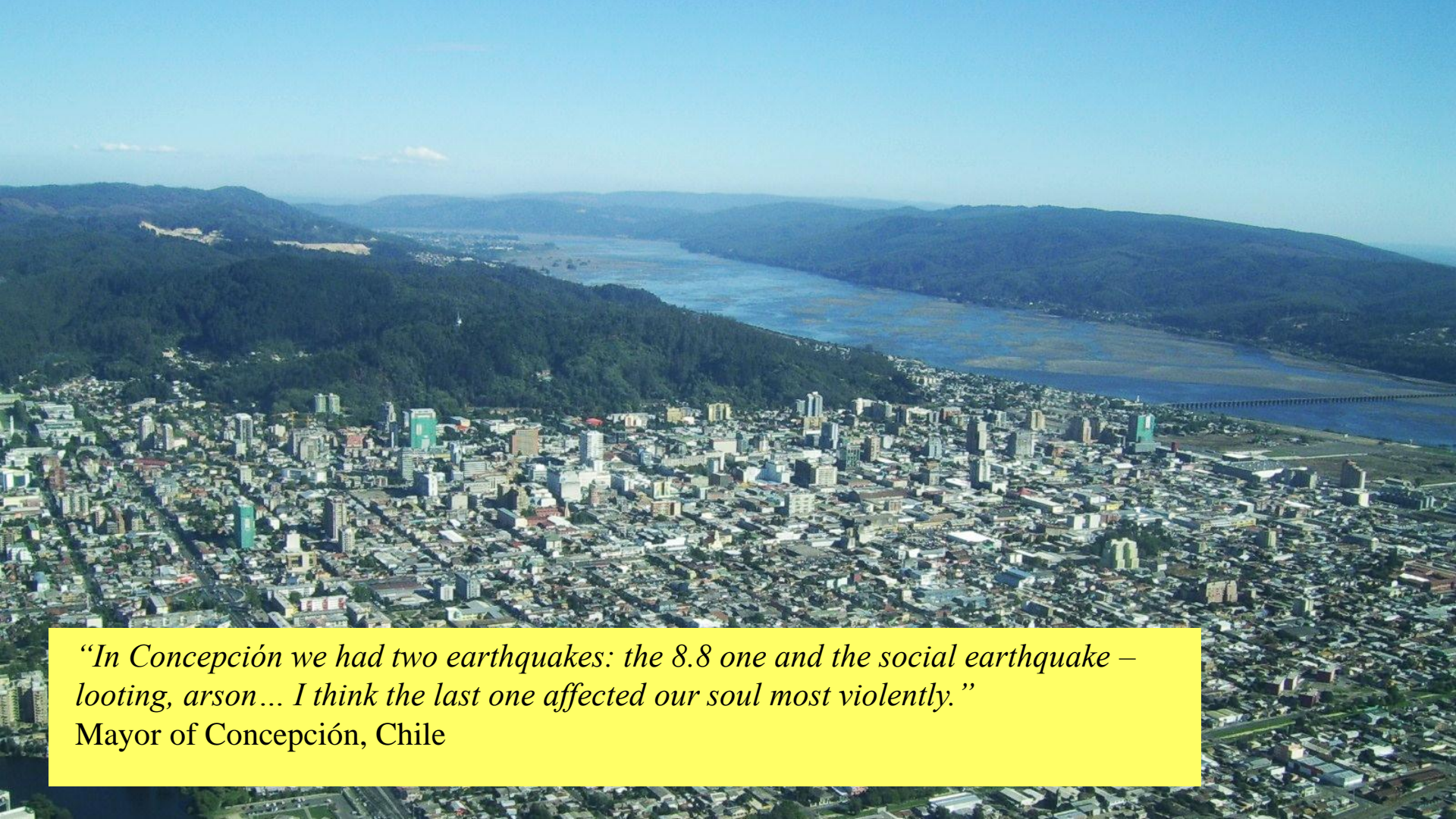
Martin-Breen & Andries (2011) Resilience: A literature review. The Rockefeller Foundation: New York City, p. 11







- Primary data
- Secondary data



“In Concepción we had two earthquakes: the 8.8 one and the social earthquake – looting, arson... I think the last one affected our soul most violently.”

Mayor of Concepción, Chile



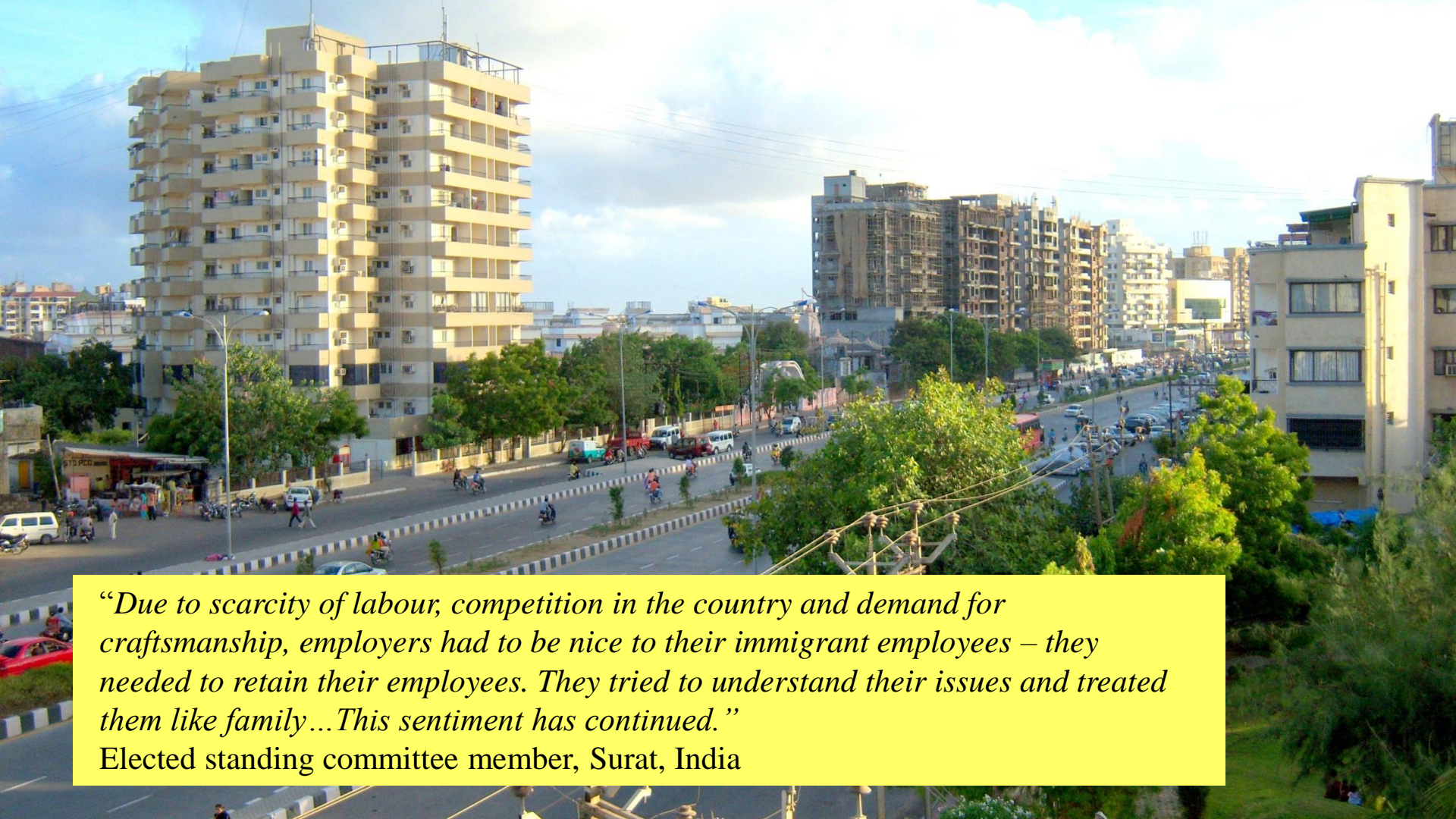
Water distribution after 8.8 earthquake – February 2010



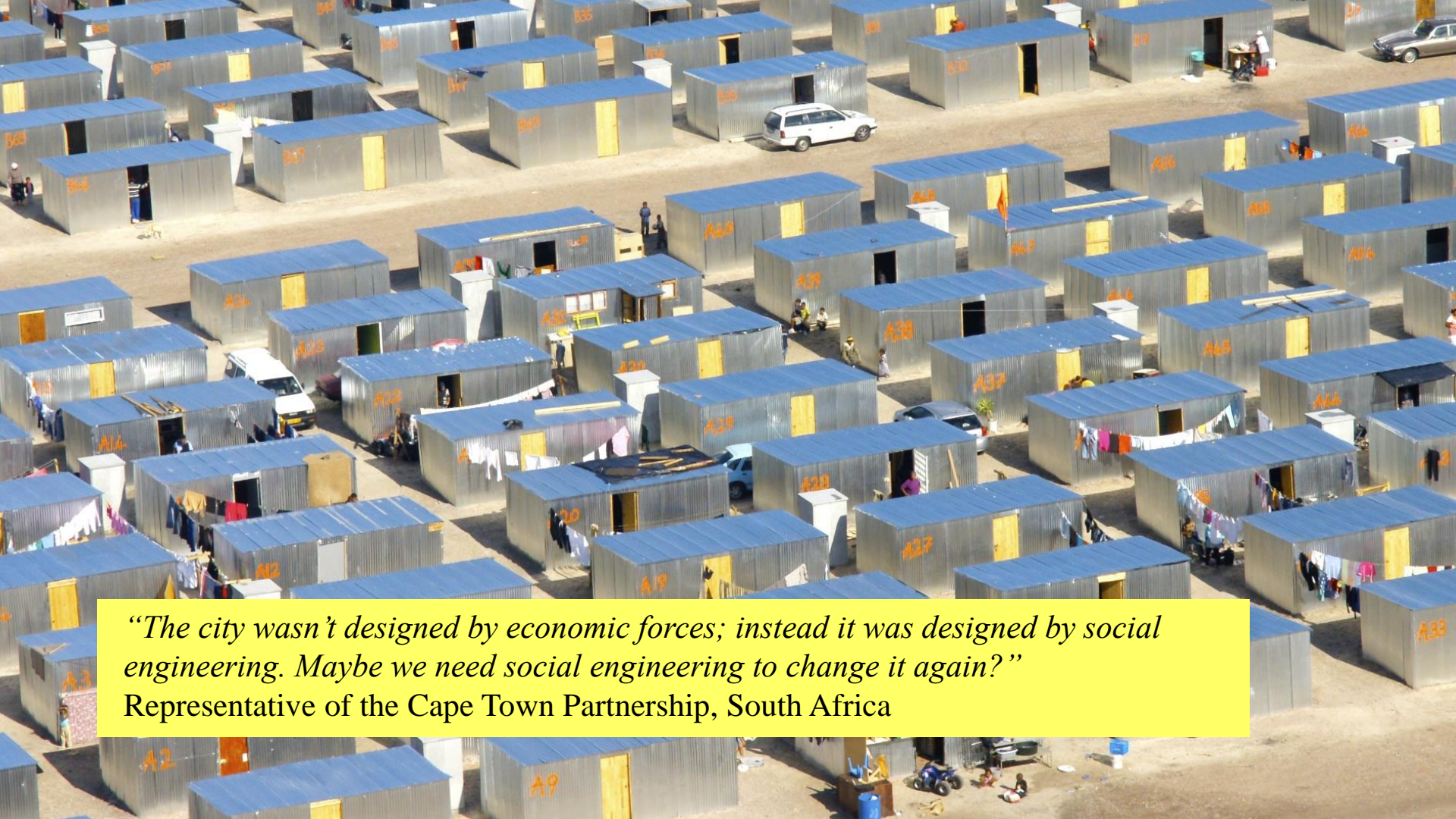
Alto Rio Building – February 2010



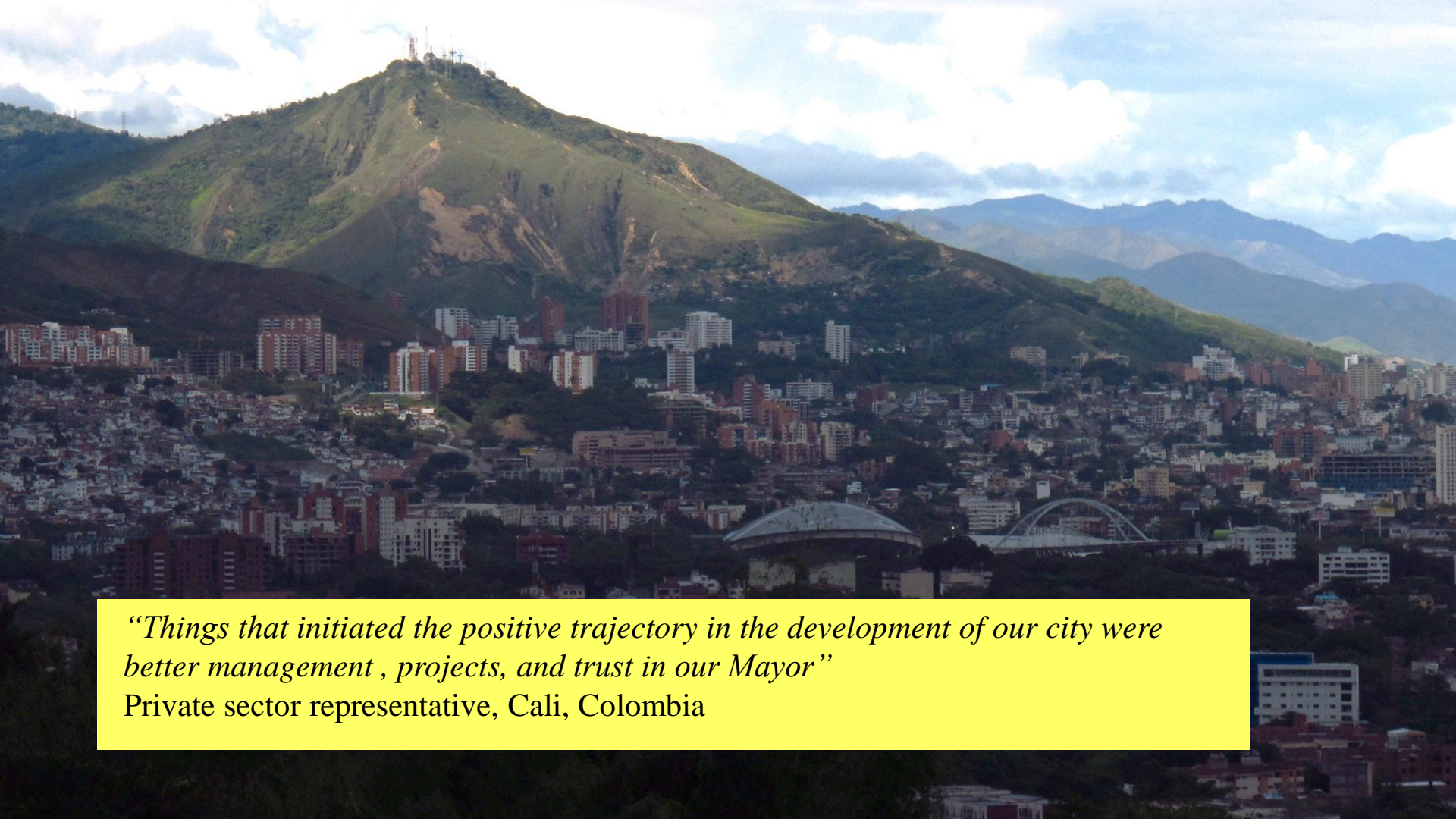
Army patrol in Greater Concepcion – February 2010



“Due to scarcity of labour, competition in the country and demand for craftsmanship, employers had to be nice to their immigrant employees – they needed to retain their employees. They tried to understand their issues and treated them like family...This sentiment has continued.”
Elected standing committee member, Surat, India

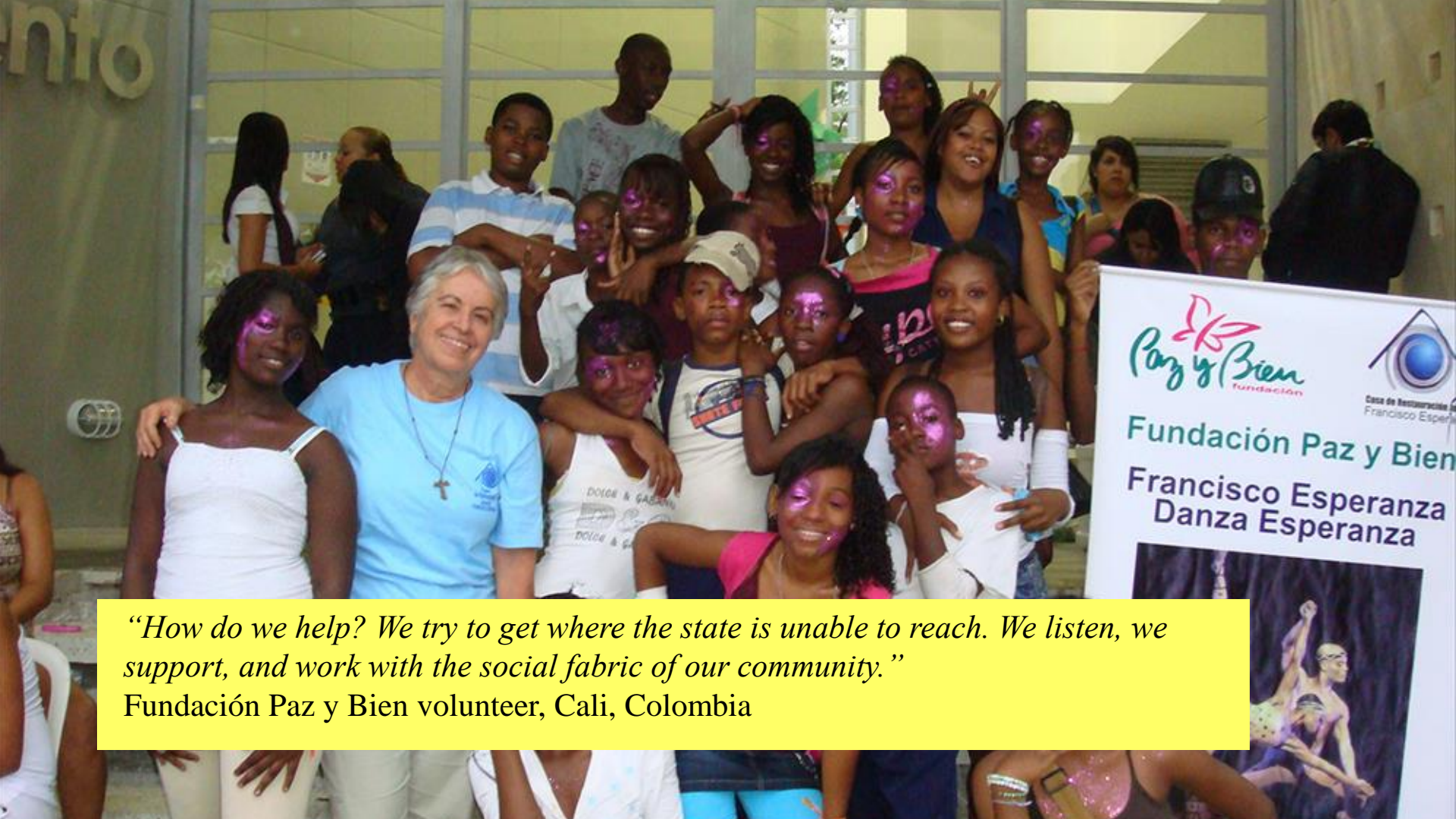


“The city wasn’t designed by economic forces; instead it was designed by social engineering. Maybe we need social engineering to change it again?”
Representative of the Cape Town Partnership, South Africa



“Things that initiated the positive trajectory in the development of our city were better management , projects, and trust in our Mayor”

Private sector representative, Cali, Colombia



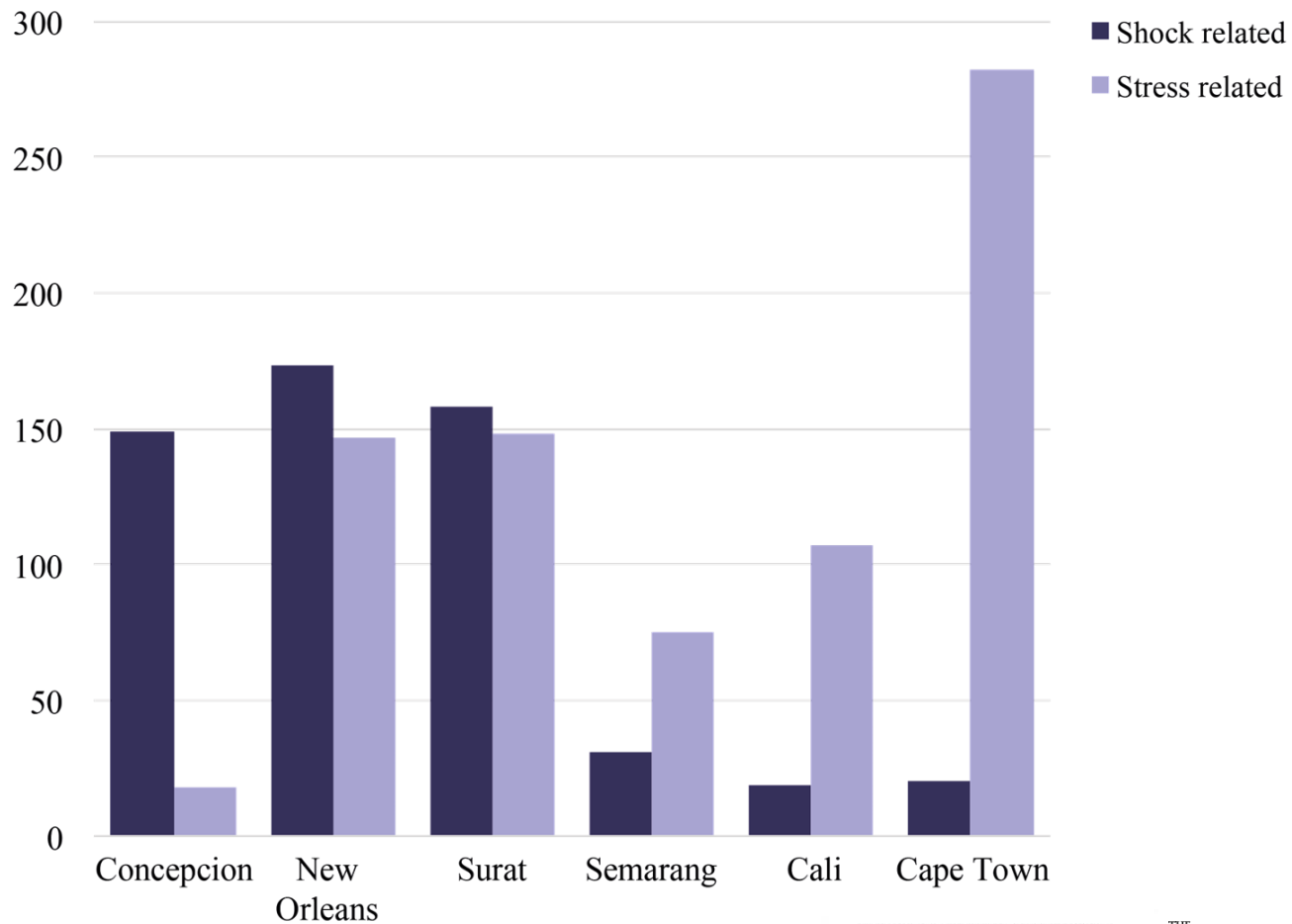
Paz y Bien
fundación

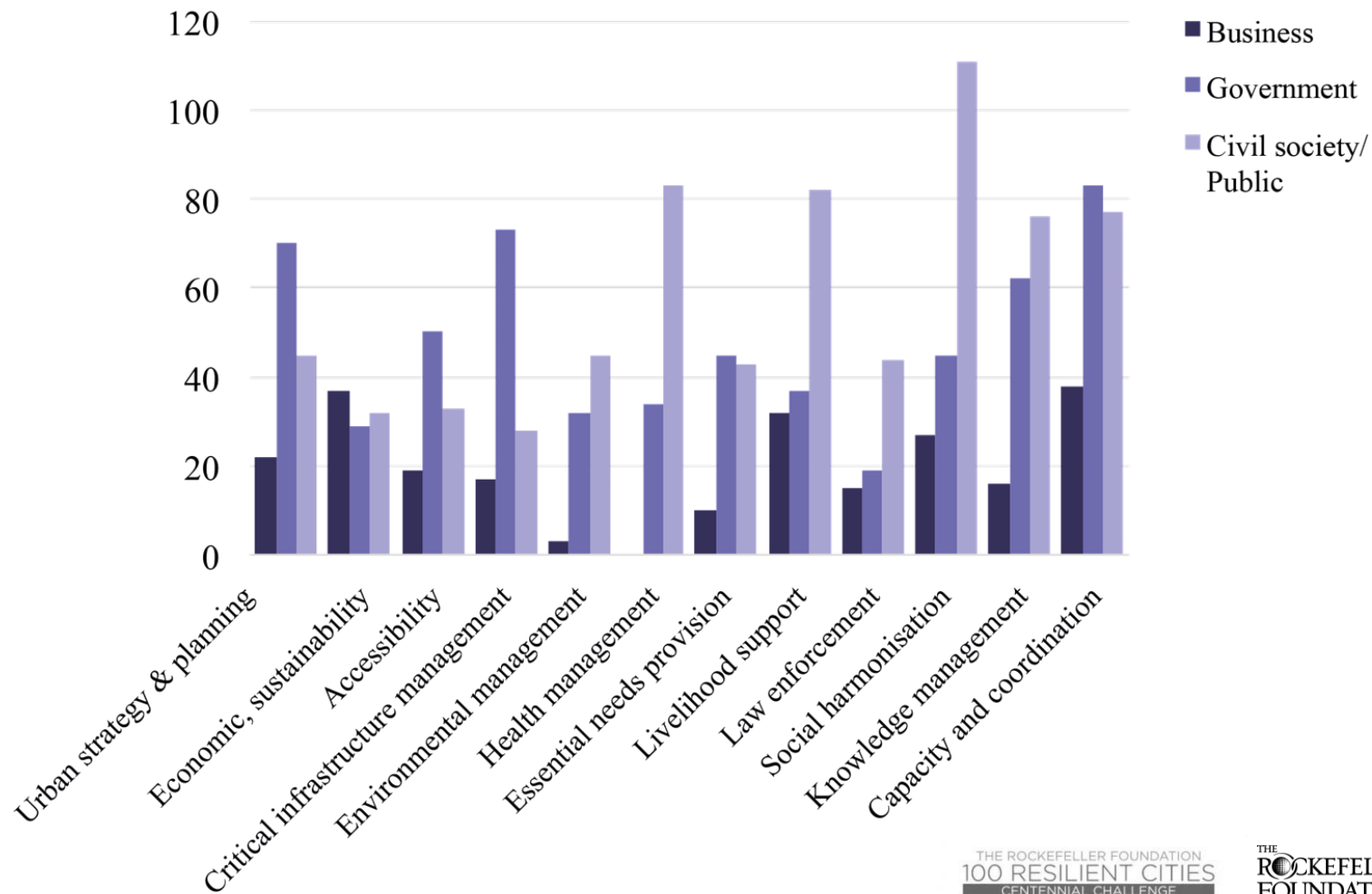
Casa de Restauración
Francisco Esperanza

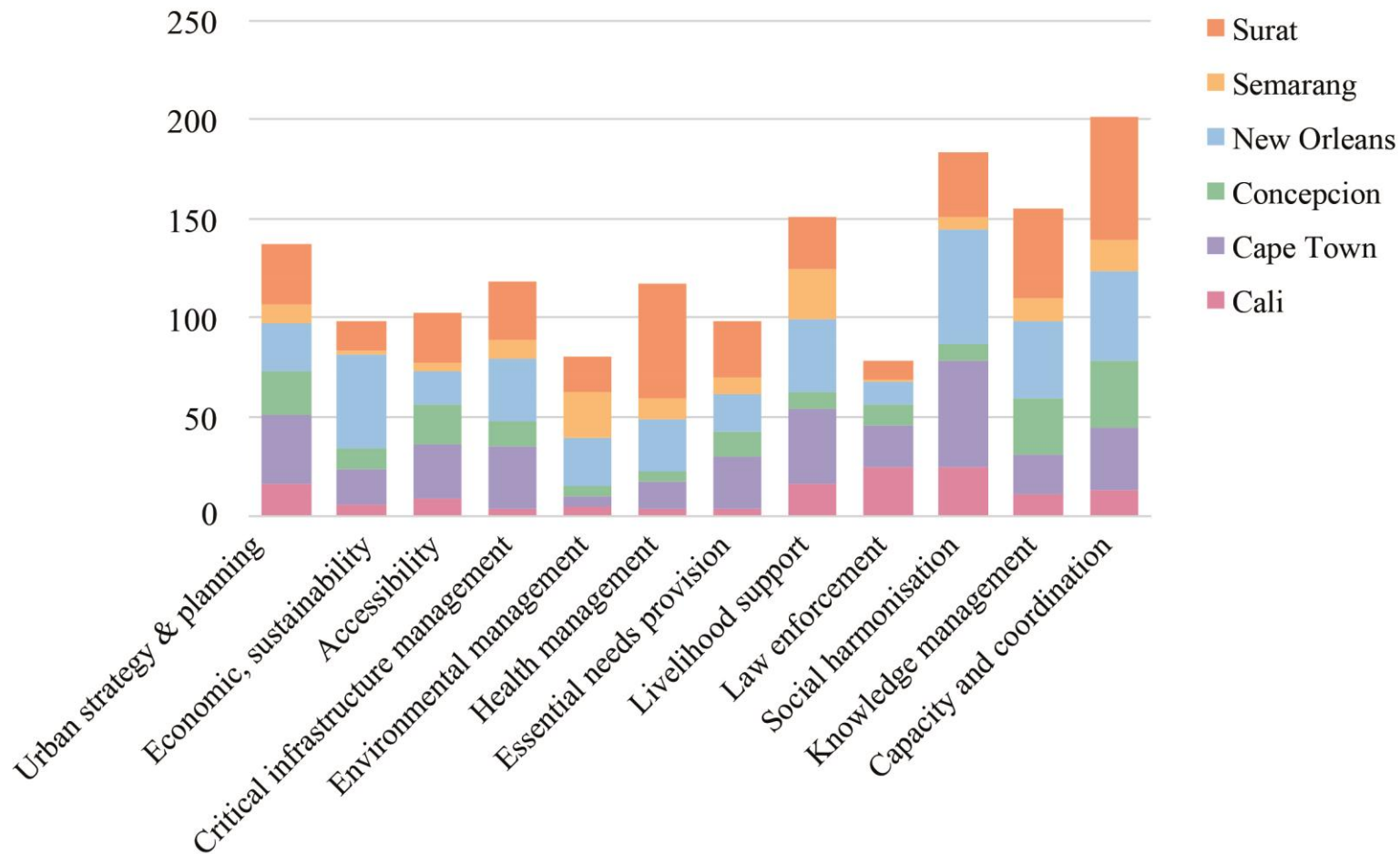
Fundación Paz y Bien
Francisco Esperanza
Danza Esperanza

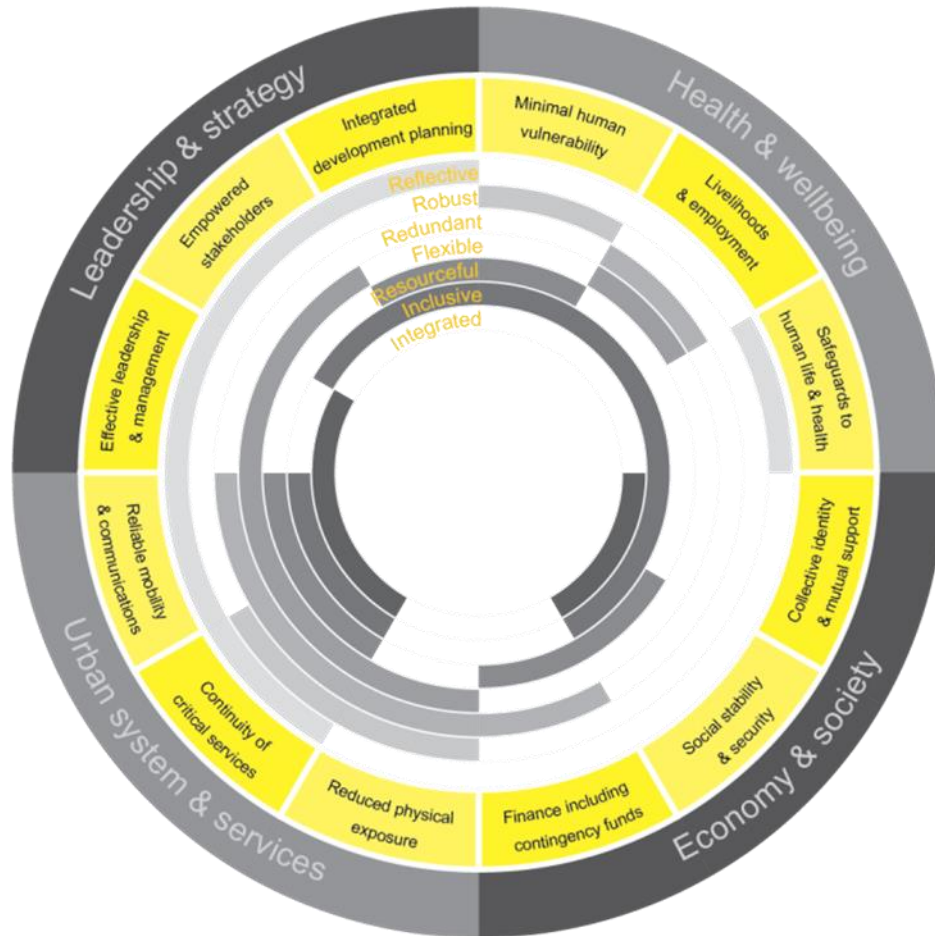
“How do we help? We try to get where the state is unable to reach. We listen, we support, and work with the social fabric of our community.”

Fundación Paz y Bien volunteer, Cali, Colombia







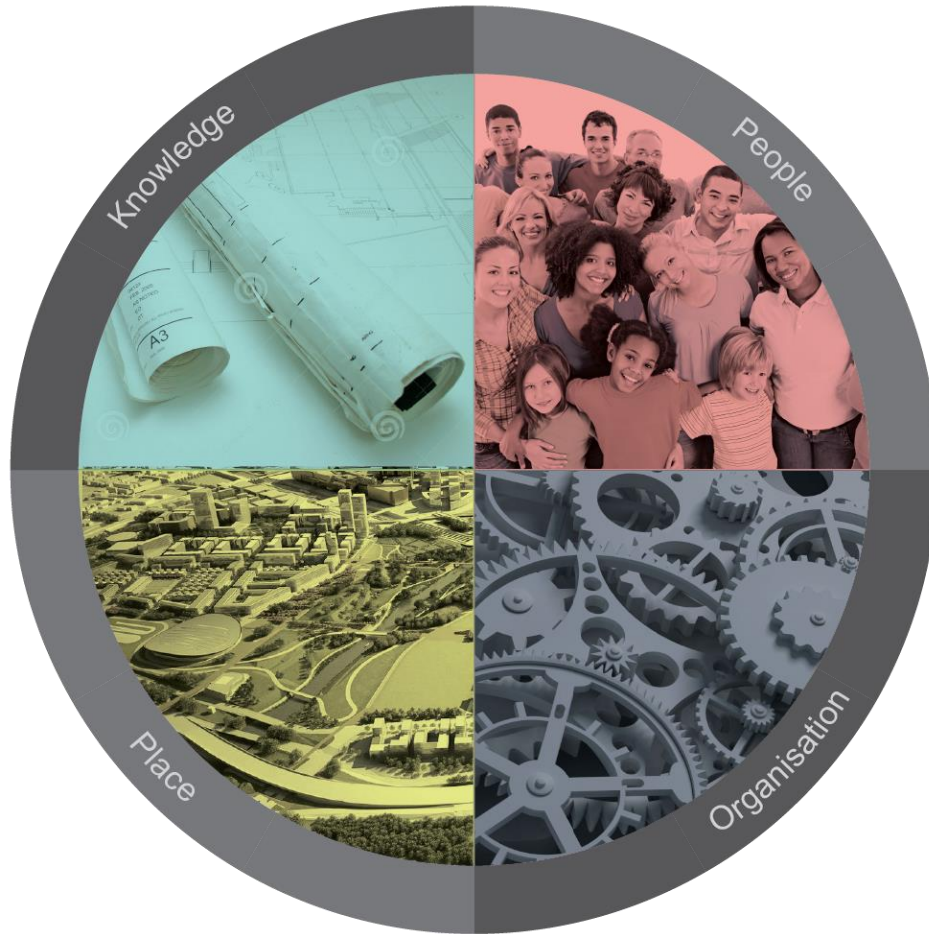


The City Resilience Framework provides a lens through which the complexity of cities and the drivers that contribute to a city's resilience can be understood



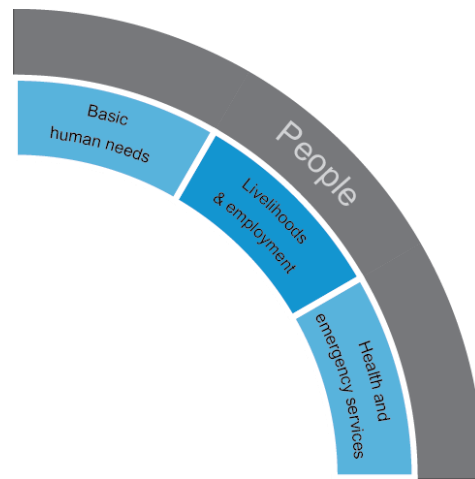
The 12 capacities in the 100RC City Resilience Framework

collectively determine its ability a city's resilience to a wide range of shocks and stresses



City resilience has 4 key dimensions

People, place, organisation, knowledge



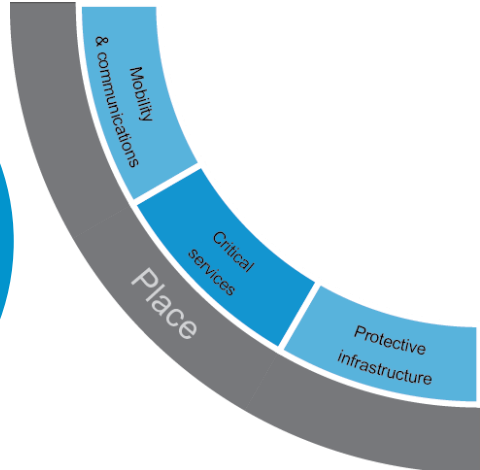
People
“the health
and wellbeing
of everyone
living and
working in the
city”

**Basic human
needs**

**Livelihoods &
employment**

**Health &
emergency
services**

Place
“the way in which man-made and natural infrastructure provides critical services and protects, and connects urban citizens.”



Protective infrastructure



Critical services



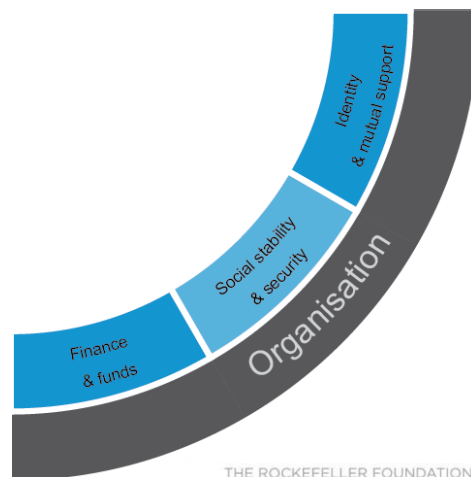
Mobility & communication



**Identity &
mutual
support**

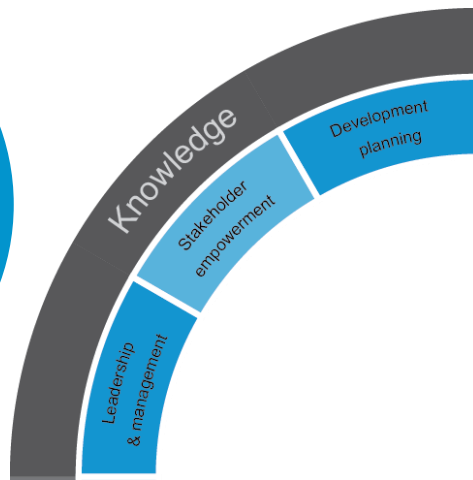
**Social
stability &
security**

**Finance and
funds**



Organisation
“the social and
financial systems
that enable
urban
populations to
live peacefully,
and act
collectively”

Knowledge
“effective
leadership,
empowered
stakeholders,
and integrated
planning”



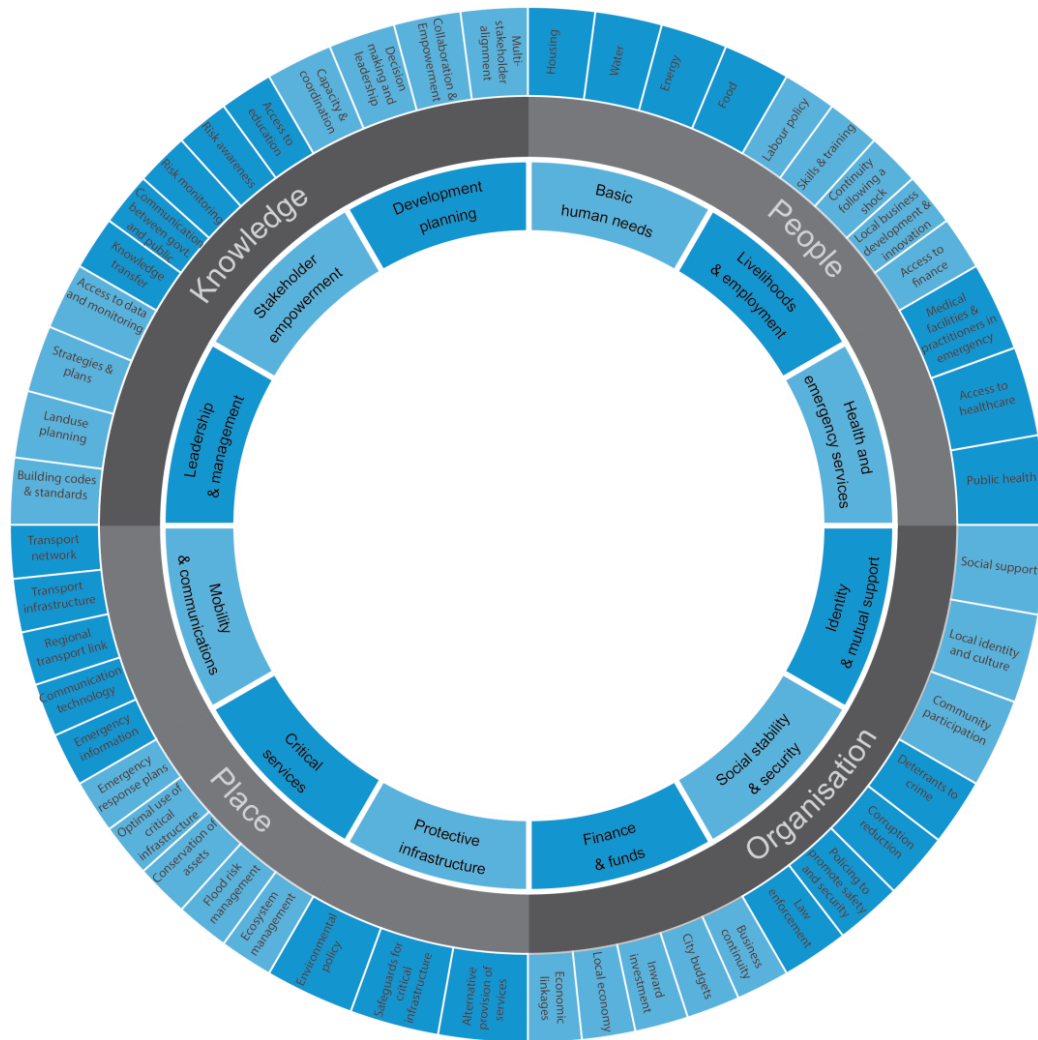
**Leadership &
management**



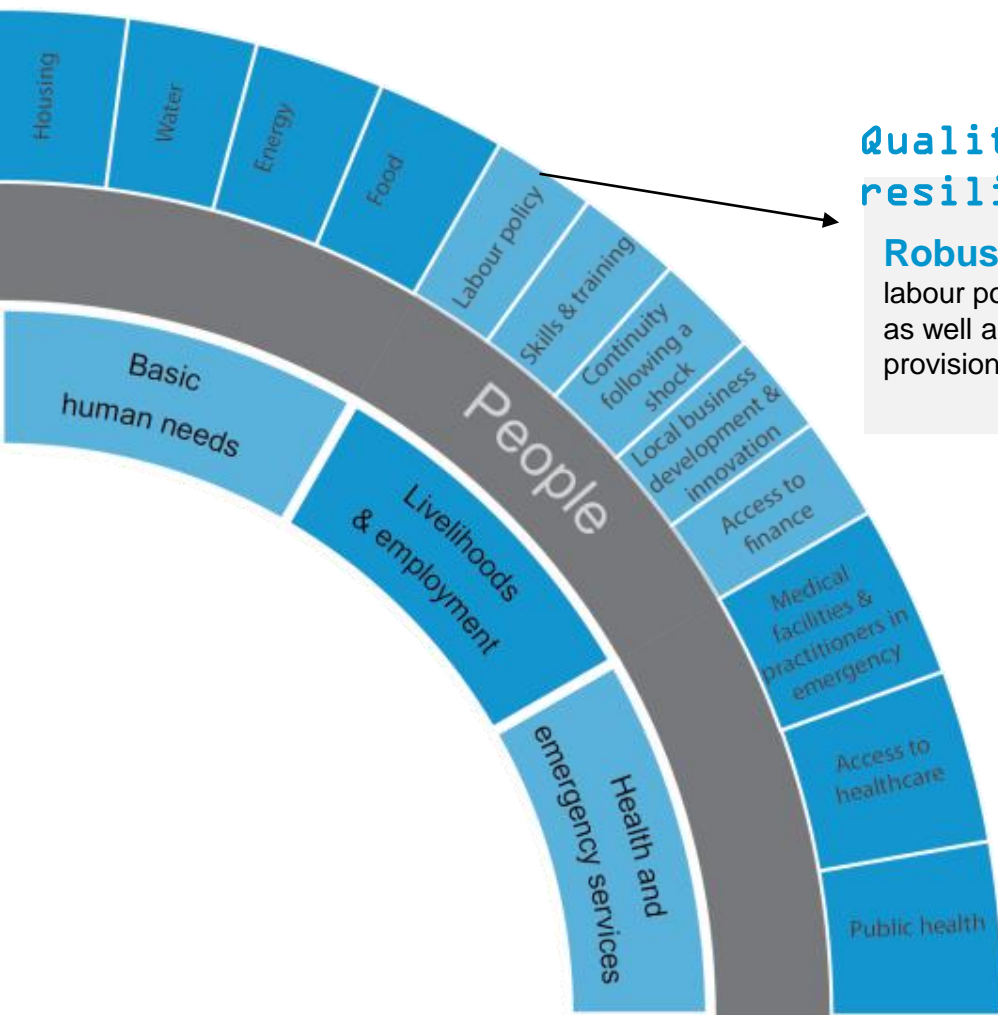
**Stakeholder
empowerment**



**Development
planning**



Resilience is the result of cumulative action to strengthen these capacities over time
 multiple factors contribute to resilience and there are multiple entry points for action



Qualities of resilience

Robust and **inclusive** labour policies and standards, as well as social security provision for the unemployed

How is this demonstrated?

Fair employment standards and regulation

Living or decent wage

Accessible social welfare

How is this demonstrated?

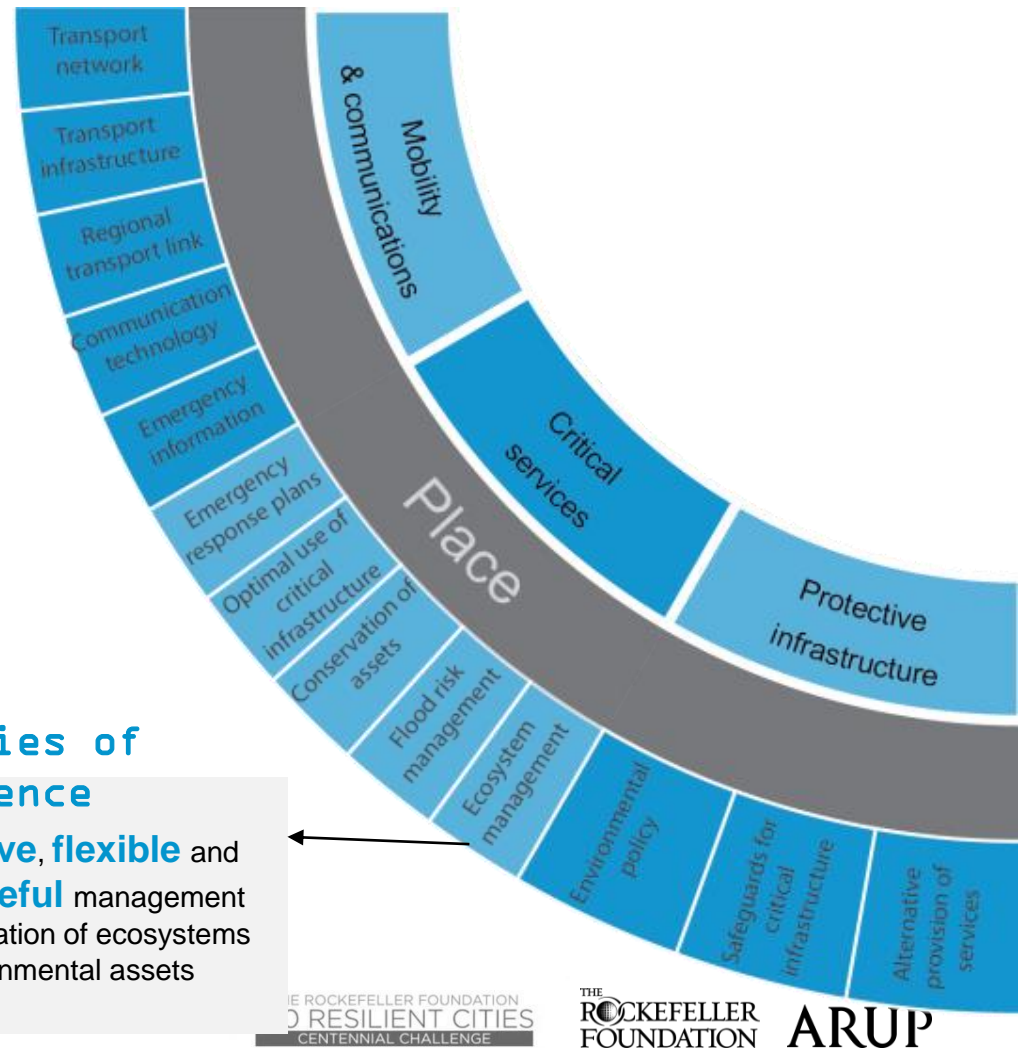
Active management & restoration of coastal ecosystems

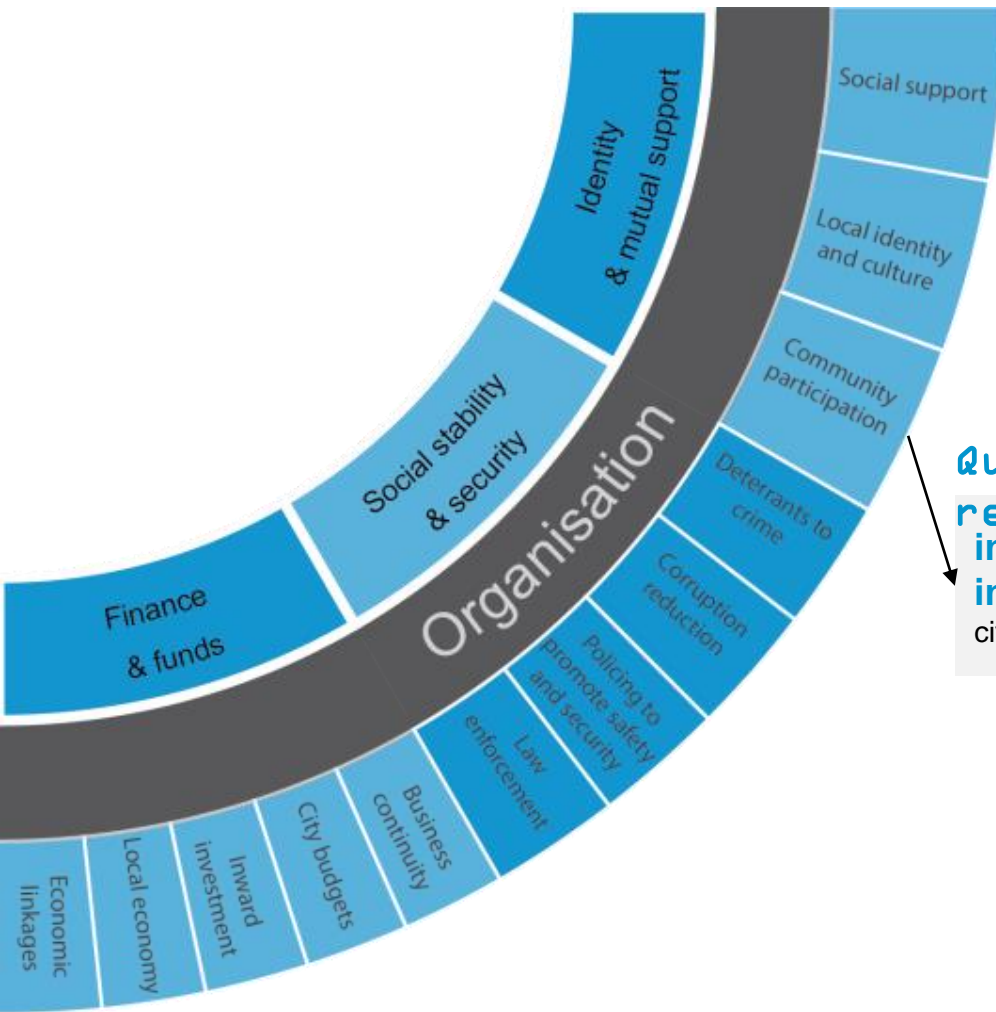
Active management & restoration of tree cover

Active management of rivers & watersheds

Qualities of resilience

Reflective, flexible and resourceful management and restoration of ecosystems and environmental assets





Qualities of
resilience
integrated and
inclusive

engagement of
civil society within the city

How is this
demonstrated?

Strong civil society

Empowerment of
vulnerable members of
society

Neighbours know each
other

How is this demonstrated?

Effective and diverse mechanisms for communication and coordination between local government, and citizens

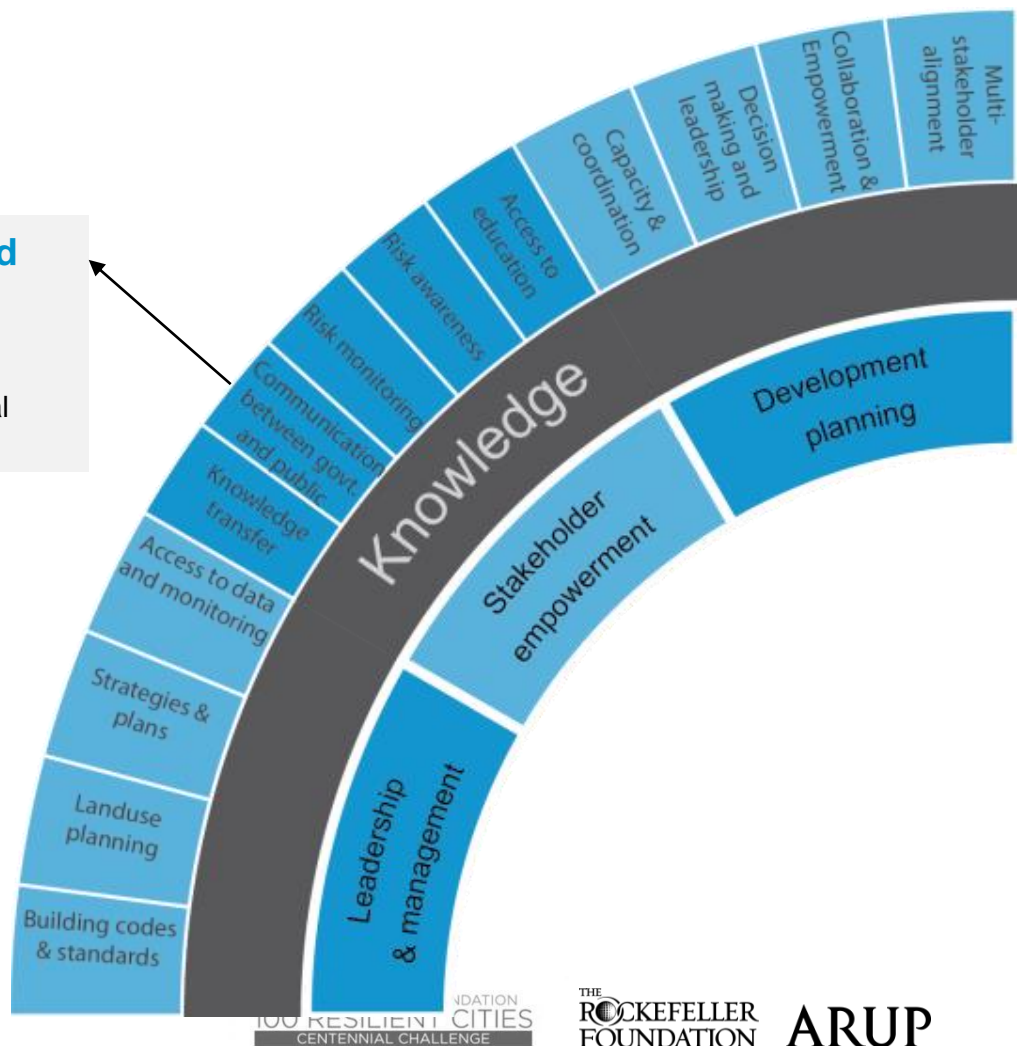
Government communication to the public in local languages

Transparent communications between government and citizens about government plans and performance

Qualities of resilience

Inclusive, integrated and transparent

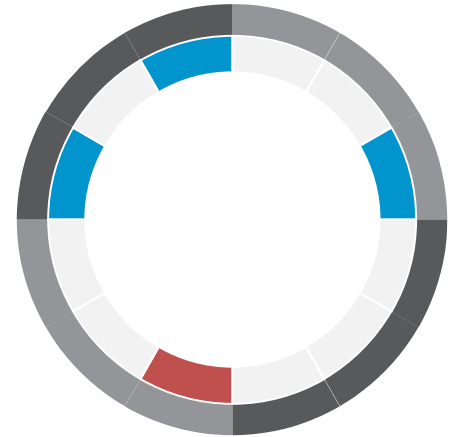
and mechanisms for communication and coordination between local government and citizens





Leading the city out of the 'plague' in Surat, India

by empowering government department heads
to take action independently while putting in
place measures for accountability

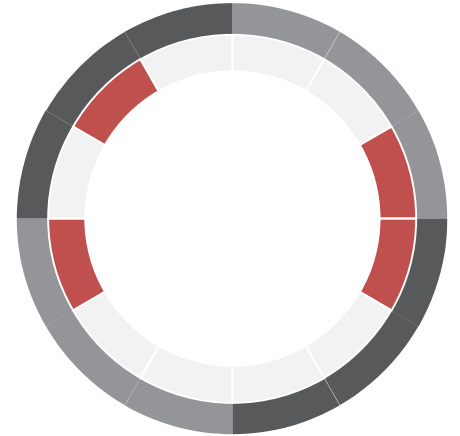




Integrating public art with disaster management

in New Orleans, USA

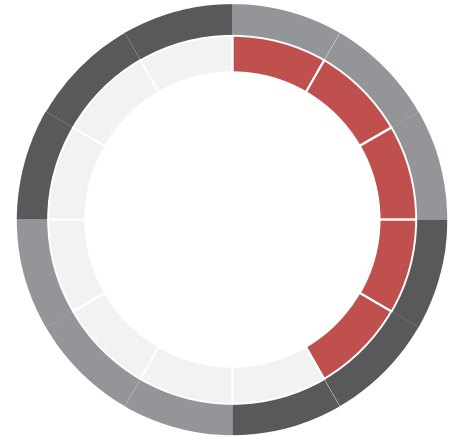
by raising awareness of evacuation procedures within the communities in which they are placed.





Relying on community-action in New Orleans, USA

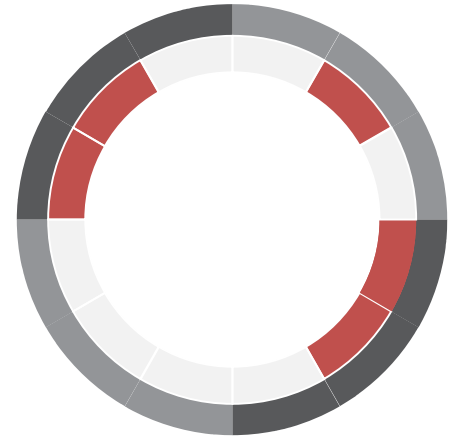
to support the rebuilding of homes,
provide primary healthcare and
livelihood training





Keeping the business going In Concepción, Chile

by redeploying staff to other
shopping centre was rebuilt





City resilience describes the capacity of cities to function, so that the people who live and work there – particularly the poor and vulnerable – survive and thrive no matter what stresses or shocks they encounter.

The City Resilience Framework provides an accessible, evidence-based articulation of city resilience. Over the coming months, it will be further developed to create the City Resilience Index, which will introduce the variables through which city-scale resilience can be measured.

THE ROCKEFELLER FOUNDATION ARUP

Read more at www.arup.com/cr

Every city is unique. The way resilience manifests itself plays out differently in different places. The City Resilience Framework provides a lens through which the complexity of cities and the numerous factors that contribute to a city's resilience can be understood. It comprises 12 key indicators that describe the fundamental attributes of a resilient city.

Categories

The twelve indicators fall into four categories: the health and wellbeing of individuals (people), urban systems and services (places), economy and society (organisations), and finally leadership and strategy (knowledge). For each, it's possible to envisage a best case which represents a resilient city, and a worst case which equates to breakdown, or collapse.

Indicators

Their relative importance is likely to depend on the urban context and the challenges a city faces. However, our research tells us that universally there are what matter most when a city faces a wide range of chronic problems or a sudden catastrophe. They represent the backbone of a resilient city. They are what enables people to survive and thrive, and businesses to prosper despite adverse circumstances.

Qualities

Finally, the indicators are complemented by qualities that distinguish a resilient city from one that is simply fragile, sustainable or prosperous. These qualities prevent failure of the assets, systems, behaviours and practices that contribute to achieving the desired outcome (or indicator), or enable appropriate and timely action to be taken.

100resilientcities.org
rockefellerfoundation.org/our-work/current-work/resilience
arup.com/cr

THE ROCKEFELLER FOUNDATION
100 RESILIENT CITIES
CENTENNIAL CHALLENGE

THE
ROCKEFELLER
FOUNDATION

ARUP