Alexander Jachnow

Risk informed planning for resilient cities

What is (urban) resilience?

Resilience 101: The basics

There are various definitions of resilience, but nearly all of them are comparable. The following resilience definitions are adpated from USAID, Rockefeller, BMZ and others)

1. The **capacity that ensures** adverse stressors and shocks do **not have long lasting adverse consequences** on development.

2. The **ability of systems** (societies, households, communities, countries...) to **mitigate, adapt to, and recover** from shocks and stresses in a manner that **reduces chronic vulnerability and facilitates inclusive growth**.

3. The **ability of individuals or communities to survive** difficult life situations such as crises or disasters without permanent impairment. Resilience in relation to climate change, for example, means that people **learn to live with the risks** and consequences of global warming, to adapt their behaviour and to prevent future crises.

4. ***Urban resilience*** is the **capacity of individuals, communities, institutions, businesses, and systems** within a city **to survive, adapt, and grow** no matter what kinds chronic stresses and acute shocks they experience.

Non-resilient people and societies are often referred to as "**vulnerable**'

resilience?

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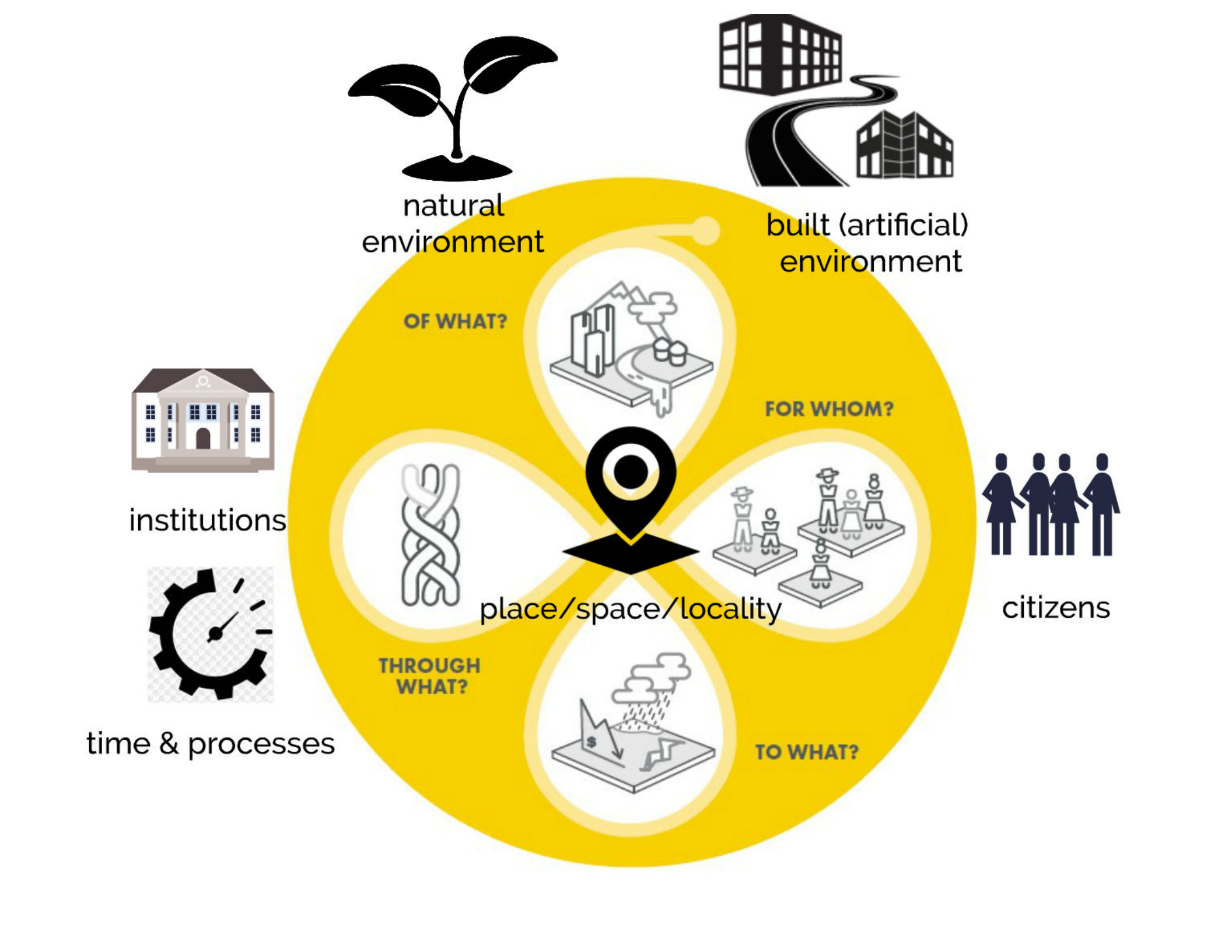
natural environment
built (artificial) environment
OF WHAT?
FOR WHOM?
institutions
citizens
place/space/locality
time & processes
THROUGH WHAT?
TO WHAT?

How to achieve resilience (via planning)?

Concepts of resilience

Statutory (Urban) Planning

Environmental Resilience

Holistic and strategic development emphasizing sustainability and resilience of natural environments in and around the city.

Land-use Planning

Social Resilience

Resilient infrastructure

=> Making public works infrastructure more resilient:
efficiency in water supply (hydrological resilience), robust systems, energy efficiency, ...

=> Making community & safety more resilient: schools, hospitals, and parks, police, and fire facilities

=> Resilient and sustainable mobility

Economic Resilience

Organize (local) economic development

=> towards their desirable impacts on urban resilience

improve land-use and resilient infrastructure, built circular economies (see Kate Raworth / concept board)

Strategic (Urban) Planning

Urban Revitalization

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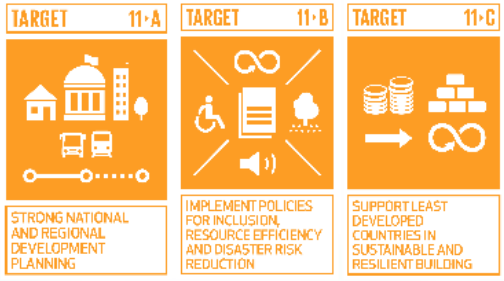
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
THE GLOBAL GOALS
For Sustainable Development
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE AND JUSTICE STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

11 SUSTAINABLE CITIES AND COMMUNITIES

Sustainable Development Goal

Make cities and human settlements inclusive, safe, resilient and sustainable.



https://www.globalgoals.org/resources/#icons-for-the-goals

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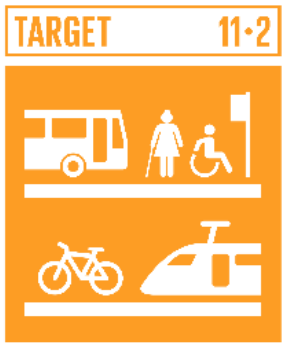
SAFE AND AFFORDABLE HOUSING



AFFORDABLE AND SUSTAINABLE TRANSPORT SYSTEMS

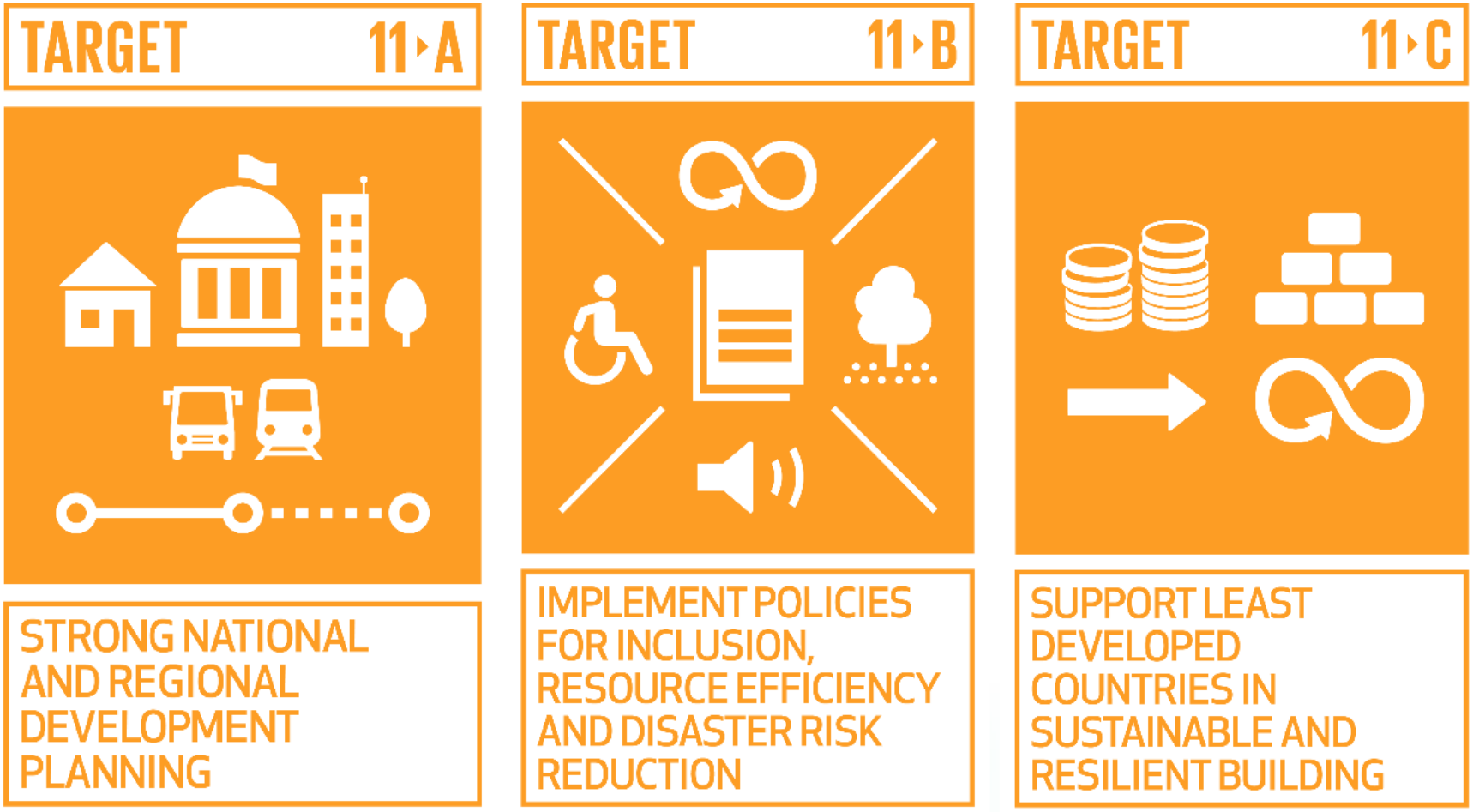
INCLUSIVE AND SUSTAINABLE URBANIZATION

PROTECT THE WORLD'S CULTURAL AND NATURAL HERITAGE

REDUCE THE ADVERSE EFFECTS OF NATURAL DISASTERS

REDUCE THE ENVIRONMENTAL IMPACT OF CITIES

PROVIDE ACCESS TO SAFE AND INCLUSIVE GREEN AND PUBLIC SPACES



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the global vision

(SDG 11)

Making cities and human settlements
inclusive, safe, resilient and sustainable.

Enhancing resilience through spatial planning

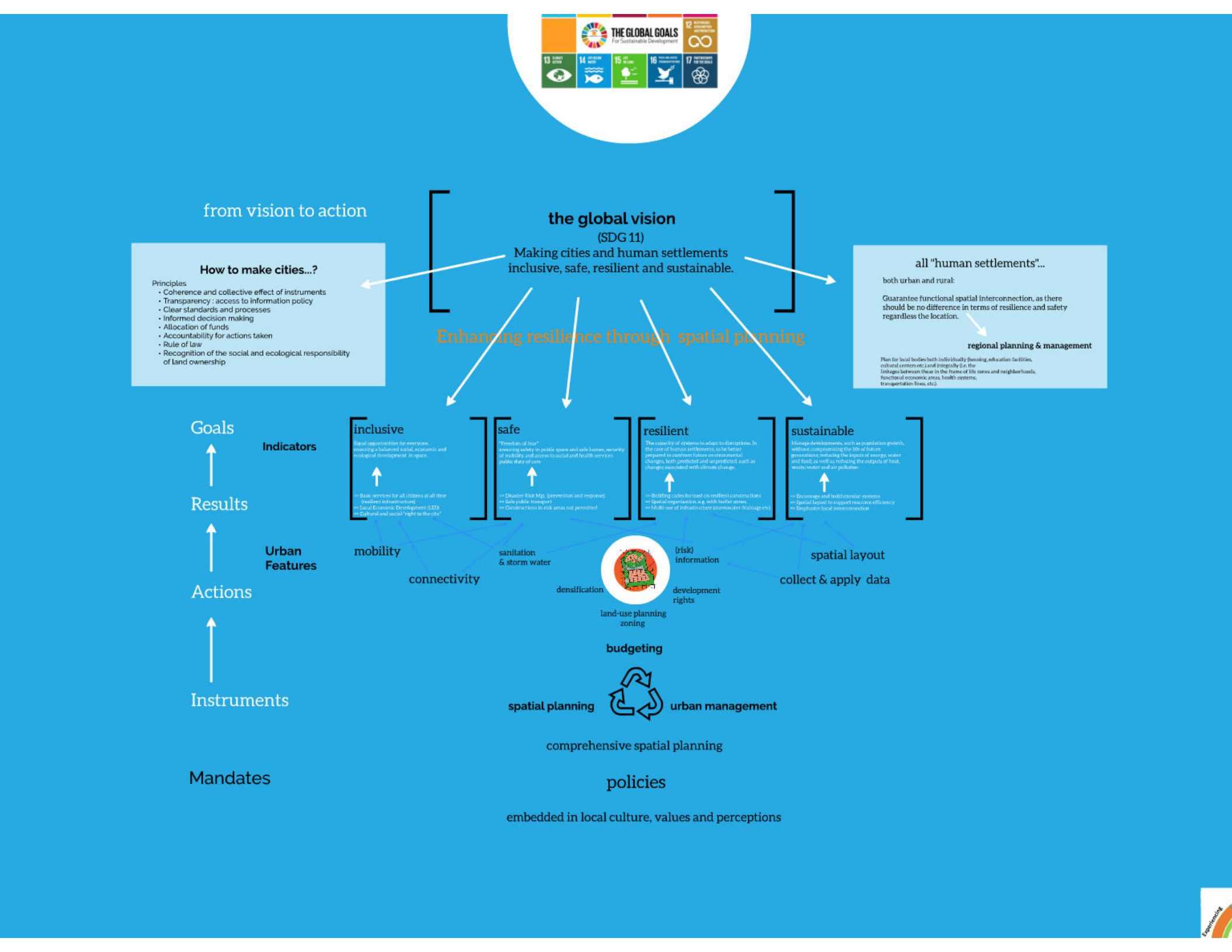
all "human settlements"...

both urban and rural:

Guarantee functional spatial interconnection, as there should be no difference in terms of resilience and safety regardless the location.

regional planning & management

Plan for local bodies both individually (housing, education facilities, cultural centers etc.) and integrally (i.e. the linkages between these in the frame of life zones and neighborhoods, functional economic areas, health systems, transportation lines, etc.).


from vision to action
the global vision
(SDG 11)
Making cities and human settlements inclusive, safe, resilient and sustainable.
How to make cities...?
Principles
• Coherence and collective effect of instruments
• Transparency : access to information policy
• Clear standards and processes
• Informed decision making
• Allocation of funds
• Accountability for actions taken
• Rule of law
• Recognition of the social and ecological responsibility of land ownership
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Enhancing resilience through spatial planning
Goals
Indicators
Results
Urban Features
Actions
Instruments
Mandates
inclusive
safe
resilient
sustainable
mobility
connectivity
sanitation & storm water
densification
land-use planning zoning
(risk) information
development rights
spatial layout
collect & apply data
budgeting
spatial planning
urban management
comprehensive spatial planning
policies
embedded in local culture, values and perceptions

inclusive

Equal opportunities for everyone,
ensuring a balanced social, economic and
ecological development in space.

=> Basic services for all citizens at all time
(resilient infrastructure)
=> Local Economic Development (LED)
=> Cultural and social "right to the city"

safe

"Freedom of fear"
ensuring safety in public space and safe homes, security of mobility and access to social and health services
public duty of care

=> Disaster Risk Mgt. (prevention and response)
=> Safe public transport
=> Constructions in risk areas not permitted

resilient

The capacity of systems to adapt to disruptions. In the case of human settlements, to be better prepared to confront future environmental changes, both predicted and unpredicted, such as changes associated with climate change.

=> Building codes focused on resilient constructions
=> Spatial organization, e.g. with buffer zones,
=> Multi-use of infrastructure (stormwater drainage etc)

sustainable

Manage developments, such as population growth, without compromising the life of future generations; reducing the inputs of energy, water and food; as well as reducing the outputs of heat, waste/water and air pollution

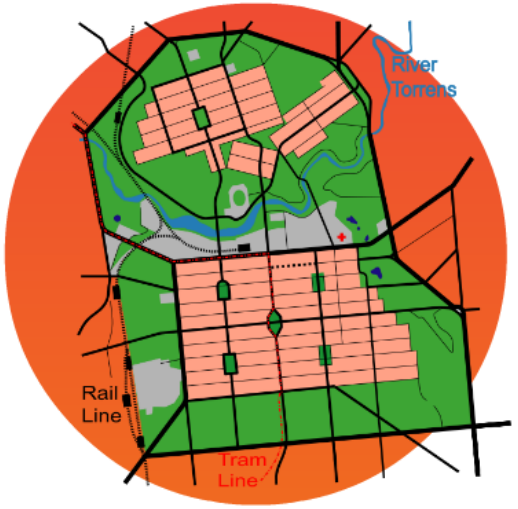
=> Encourage and build circular systems
=> Spatial layout to support resource efficiency
=> Emphasize local interconnection

sk areas not permitted

=> Multi-use of infrastructure (storm

r

(risk)
information



densification

development
rights

land-use planning
zoning

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11 SUSTAINABLE CITIES AND COMMUNITIES