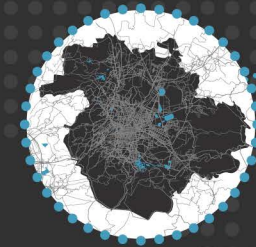


# URBAN FRAMEWORK.



MEXICO CITY



HONG KONG



LILONGWE, MALAWI



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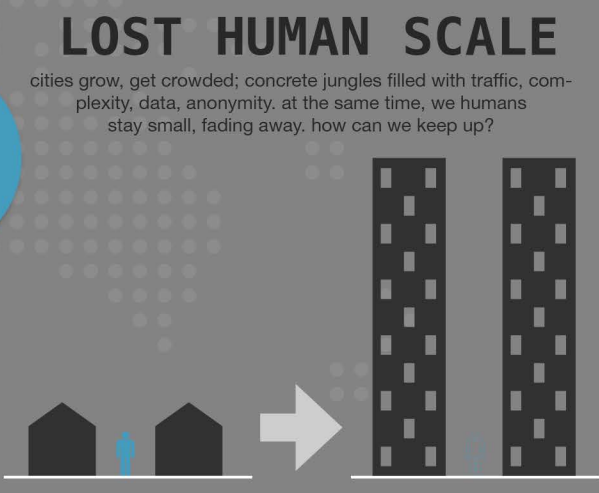
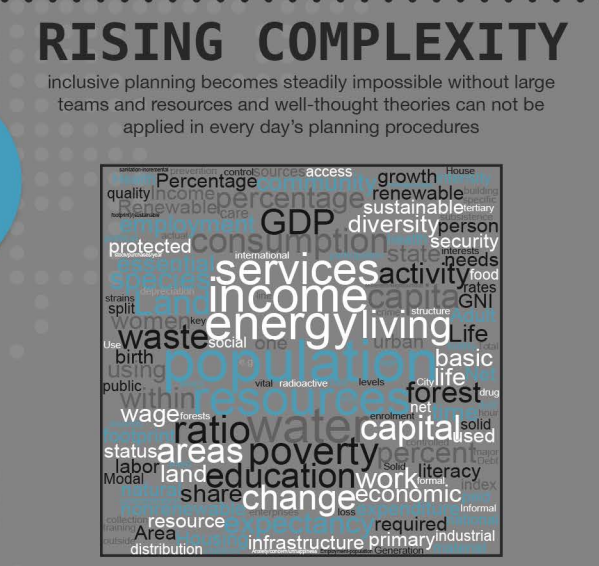
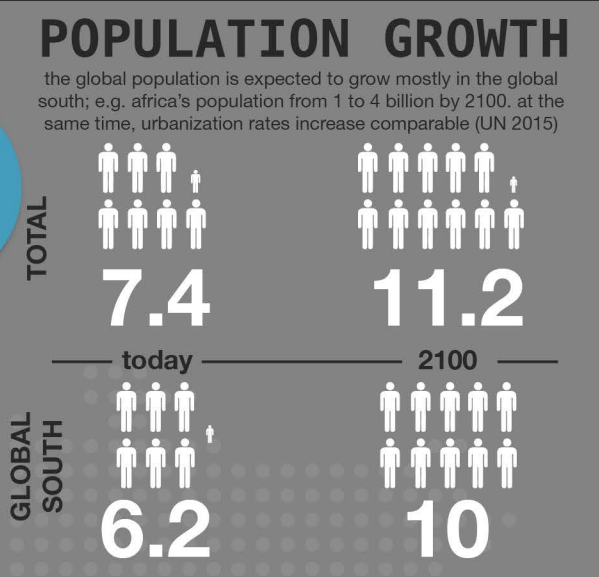
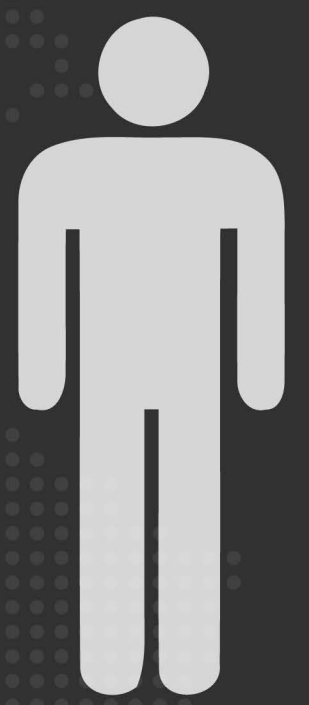


TJARK GALL

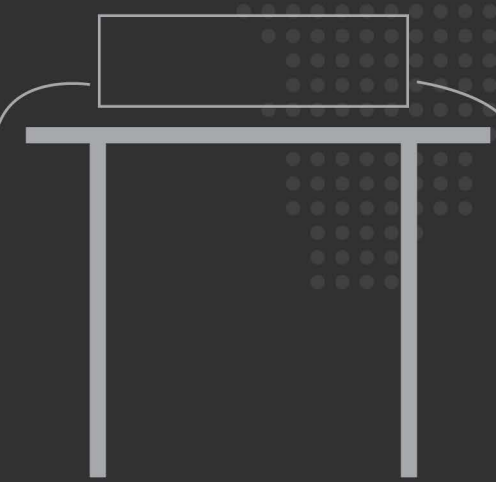
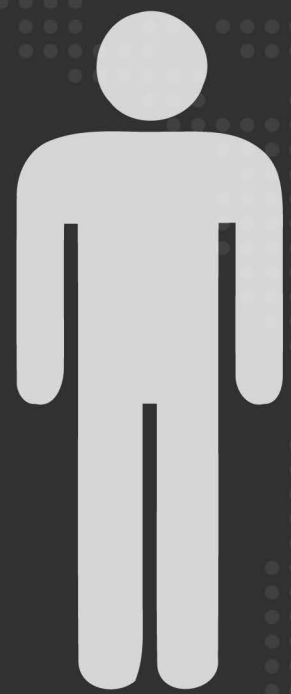
Technical University Brunswick  
Architecture and Urban Design

# CHALLENGES

competitiveness digitalization sustainable  
 out of human scale ? ? ?  
 resources ? ? ?  
 segregation big data ? ? ?  
 social gaps smart city  
 expectations  
 inequality  
 lack of money  
 progress exclusion  
 inclusive  
 resilient  
 insufficient human resources  
 new challenges  
 climate change



# APPROACH



# TECHNOLOGY

DATA AVAILABILITY & STANDARD DATA FORMATS



ASSIGNING, MERGING WITH GIS-LOCATION



2D & 3D SPATIAL SIMULATION

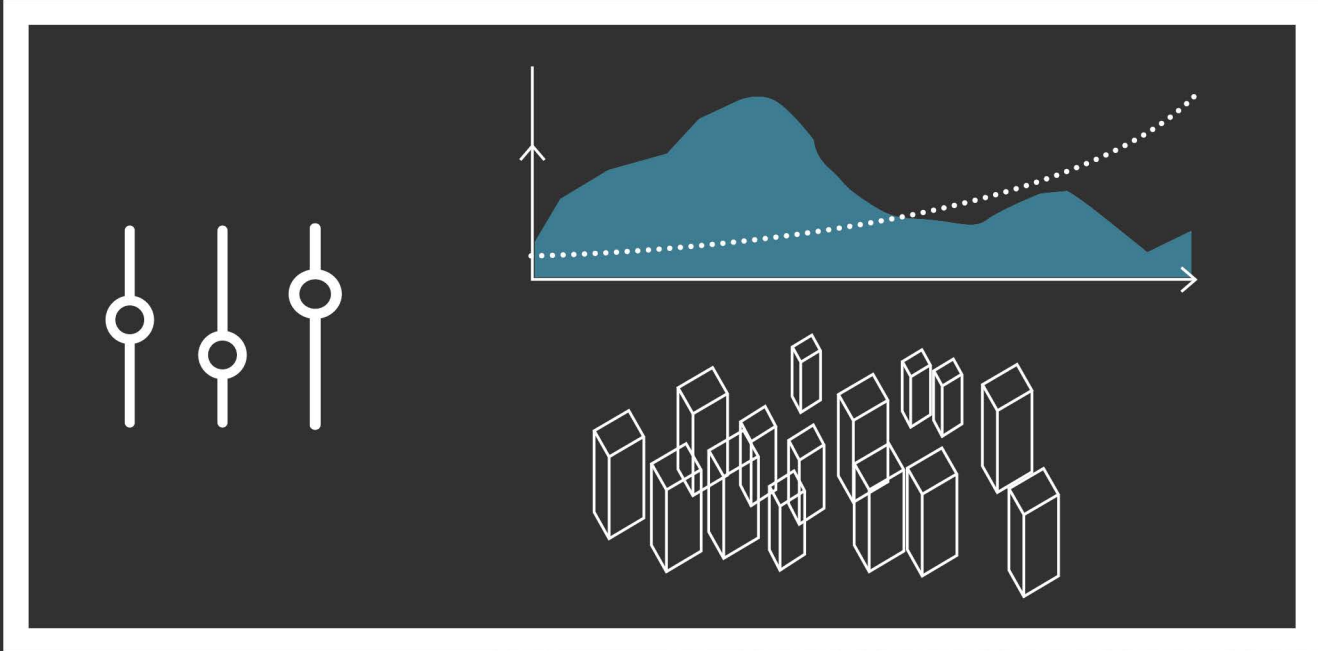


OPEN ACCESS PLATFORM (INPUT & OUTPUT)

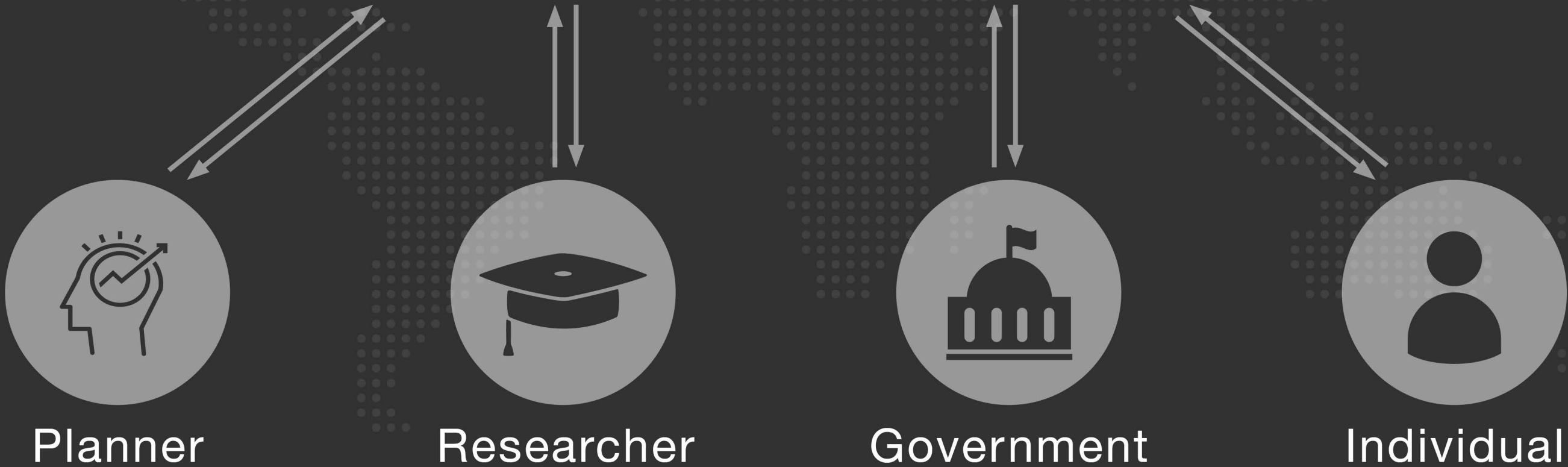


PARAMETER-BASED ADAPTION & SCENARIO VISUALIZATION

# APPLICATION

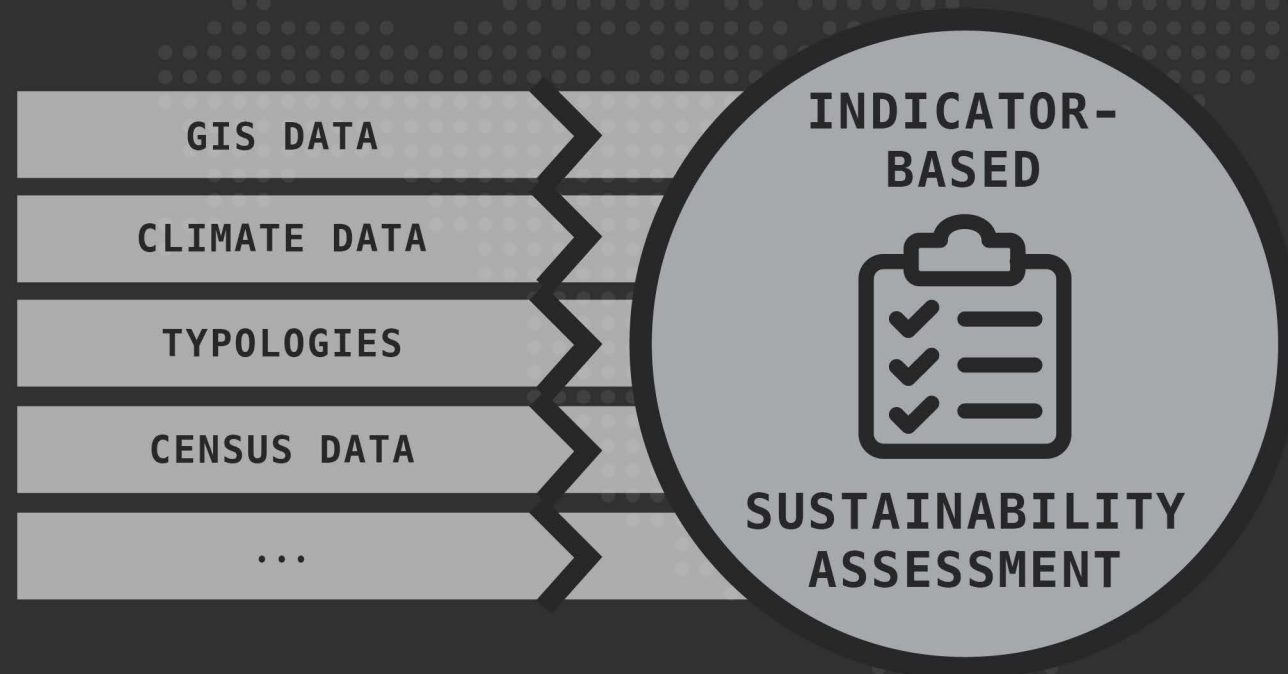


## MULTI-STAKEHOLDER PLATFORM



## DATA INPUT

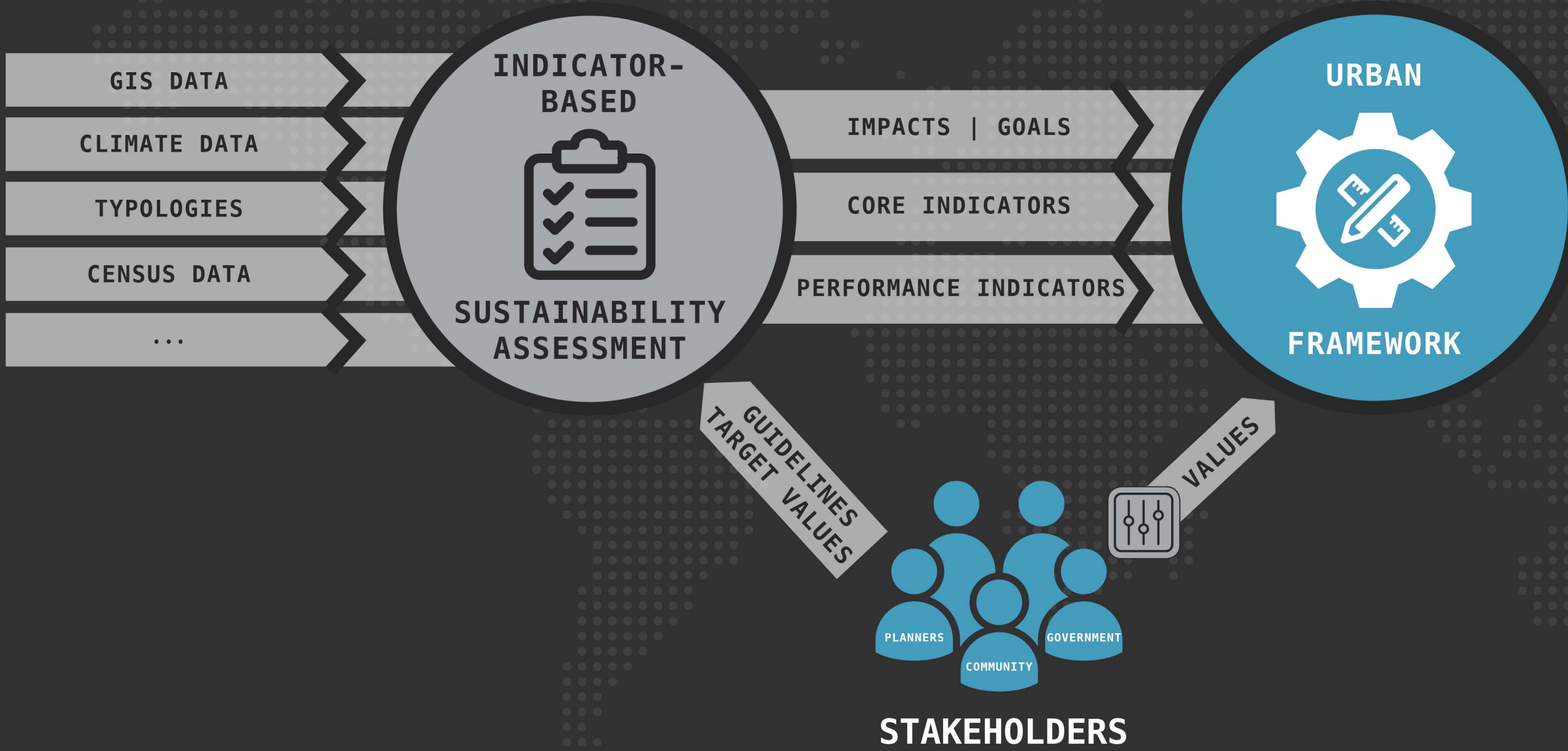
## ASSESSMENT



# DATA INPUT

# ASSESSMENT

# TOOL

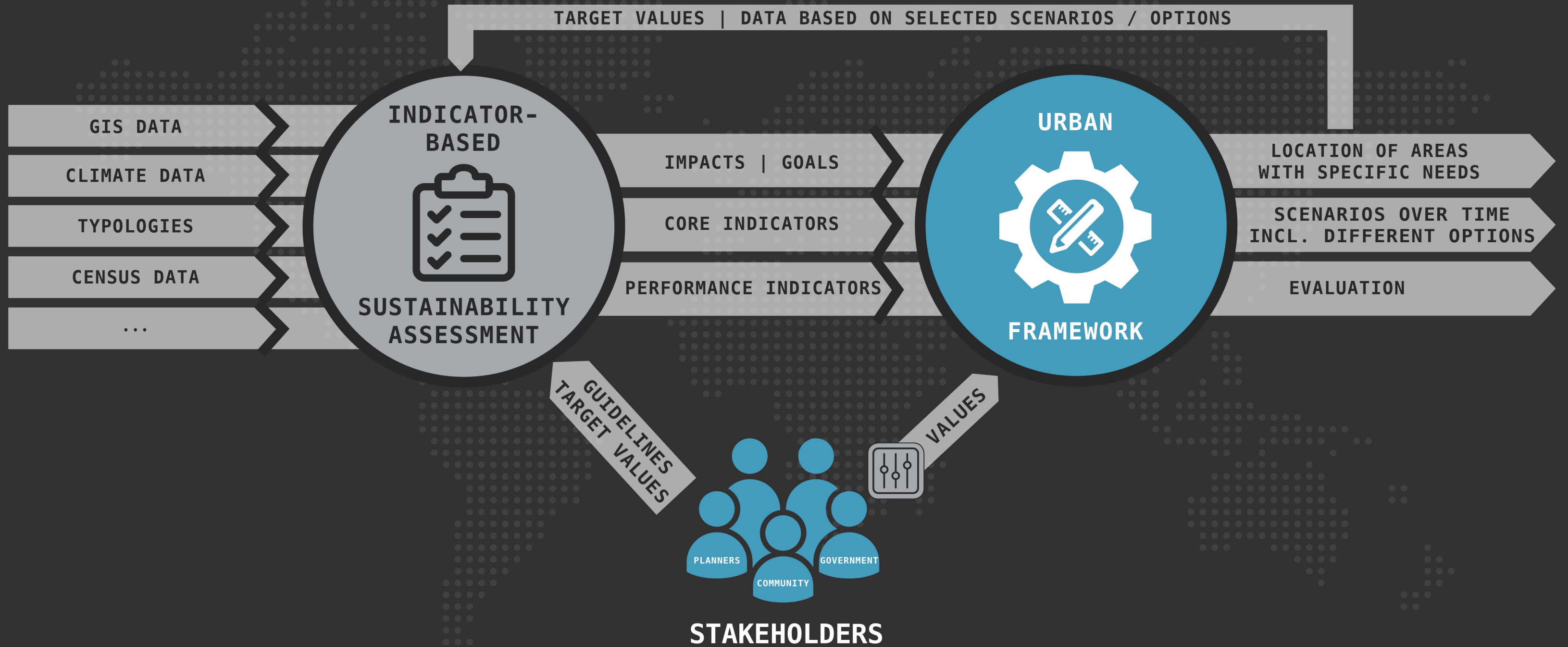


# DATA INPUT

# ASSESSMENT

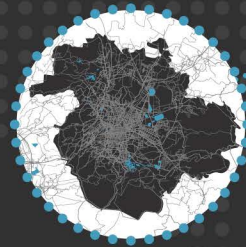
# TOOL

# OUTCOMES





# CASE STUDIES



**MEXICO CITY**  
**GREEN PER CAPITA**  
environmental sustainability  
city-wide scale



**LILONGWE, MALAWI**  
**GROWTH SIMULATION**  
spatial dimension  
various scales



**HONG KONG**  
**INDICATOR ASSESSMENT**  
social sustainability dimension  
district / time scale

# CASE #01



## HONG KONG

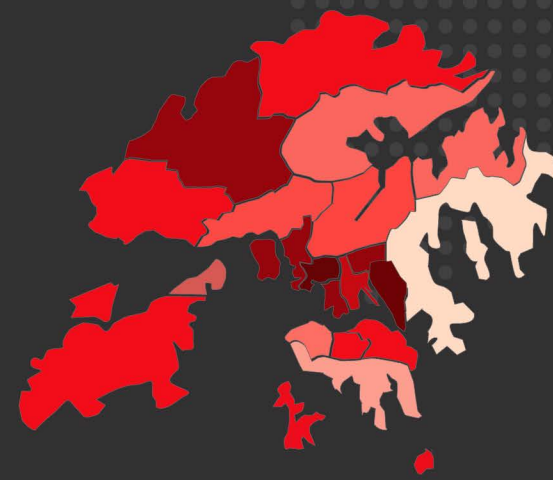
### INDICATOR ASSESSMENT

social sustainability dimension  
district / time scale

Dimension	Sub-theme	Approach / Method	Impacts / Goals	Spatial Level	Time Scale	Indicator	Data-Source	Data-Type
Environmental	Local Economy	Urban Planning	Healthy lives and well-being	City	long-term > 20 years	Core Profile	Objective	Quantitative
	Education		availability and sustainable management of water and sanitation					
	Energy	Urban Design	access to affordable, reliable, sustainable and modern energy					
	Environment		sustained, inclusive economic growth, productive employment and decent work					
Economic	Recreation	Urban Finance	resilient infrastructure, inclusive, sustainable industrialization, and innovation	District	medium-term 5-20 years	Core Performance	Subjective	Semi-Quantitative
	Shelter		inclusive, safe, resilient and sustainable cities and human settlements					
	Solid waste	Urban Legislation	Gender / Youth / Human Rights					
	Telecommunications and innovation		Climate Change					
Social	Finance	Education / Training	Housing & Slum Upgrading	Area	short-term < 5 years	Secondary Profile	Subjective	Qualitative
	Fire and emergency response		Urban Basic Services					
	Local Governance	Land Tenure	...					
	Health		...					
Institutional / Governmental	Transportation	Property Development		Neighbourhood		Secondary Performance		
	(Infrastructural) Urban planning		Construction					
	Wastewater	Operation						
	Water and sanitation							
	...							

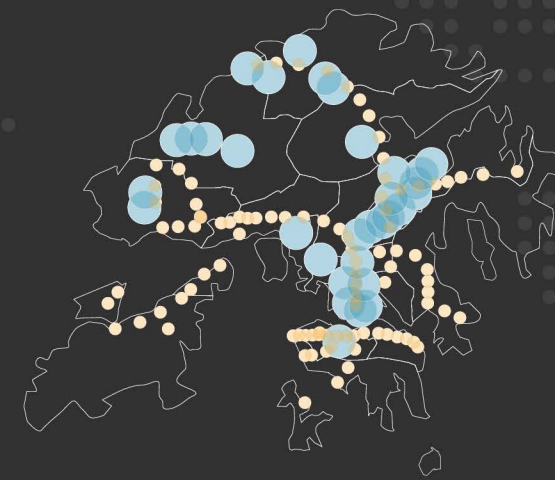
multiple assignments possible

absolute assignments

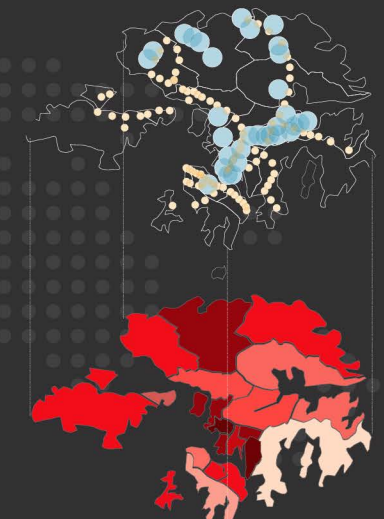


1 | Poverty rate 2015

<https://dhn society.org/2016/12/04/at-a-glance-hong-kong-poverty-situation/>

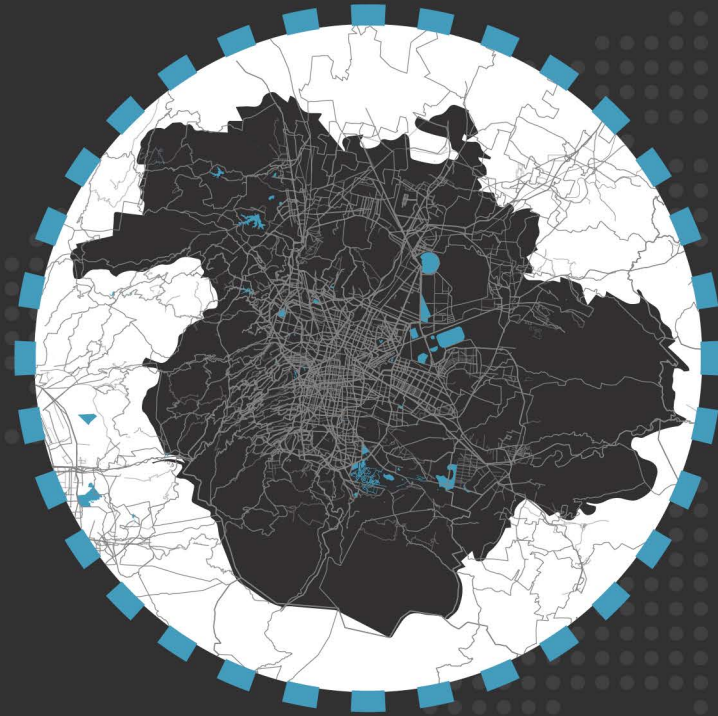


2 | Public transport

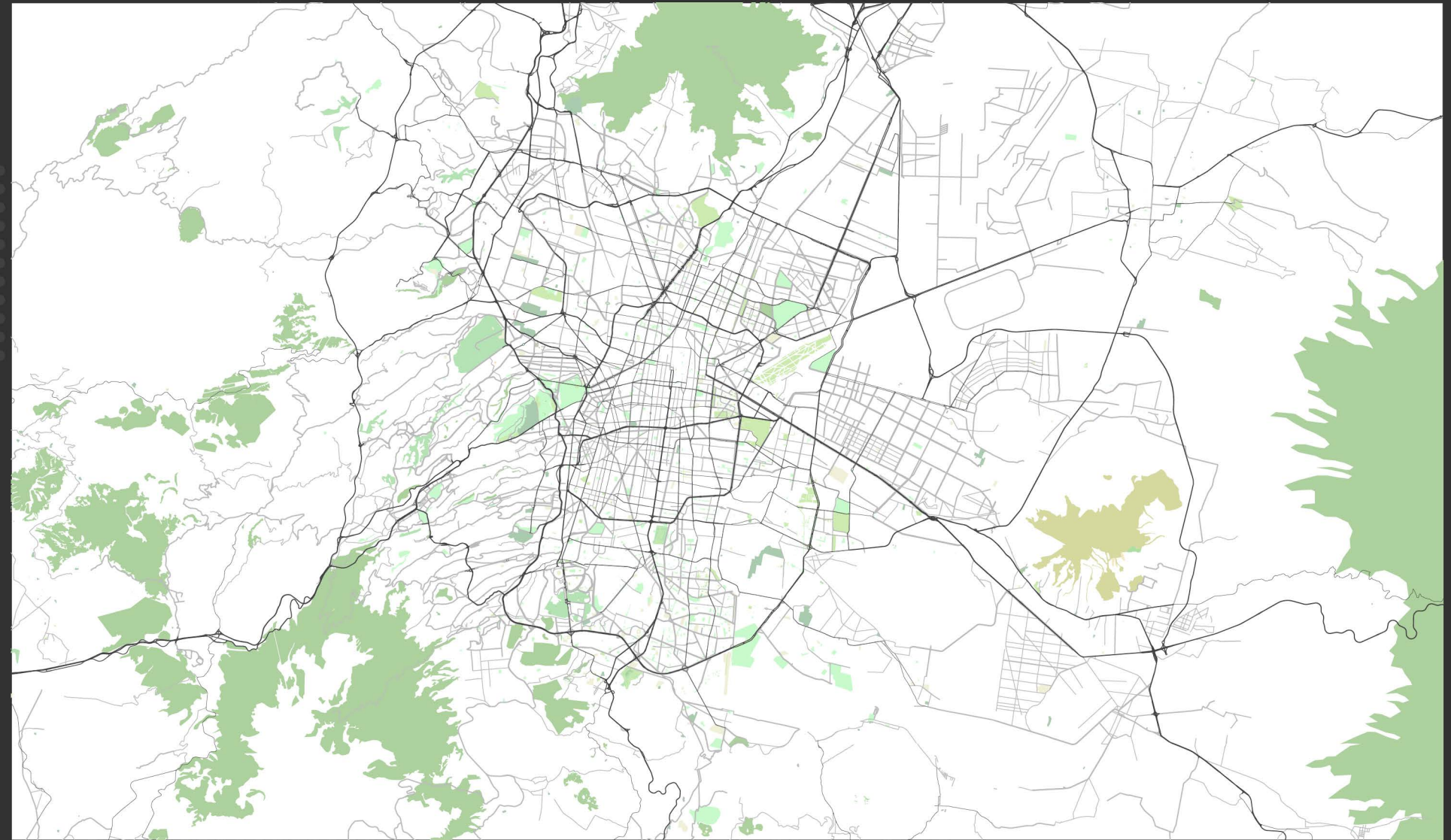


3 | Overlay

# CASE #02



## MEXICO CITY



1 | Green Spaces Mexico City  
<http://www.openstreetmap.org/>

**1,94 m<sup>2</sup>**



2 | Green per capita (now)  
<http://www.fao.org/docrep/u9300e/u9300e06.htm>

**9 (12) m<sup>2</sup>**



3 | Green per capita (asp.)  
Habitat III Issue Papers, 11 – Public Space

**6 m<sup>2</sup> by 2025**

**9 m<sup>2</sup> by 2035**

**12 m<sup>2</sup> by 2045**

**15 min. distance  
to at least 0.5 ha  
public green**

4 | Goals

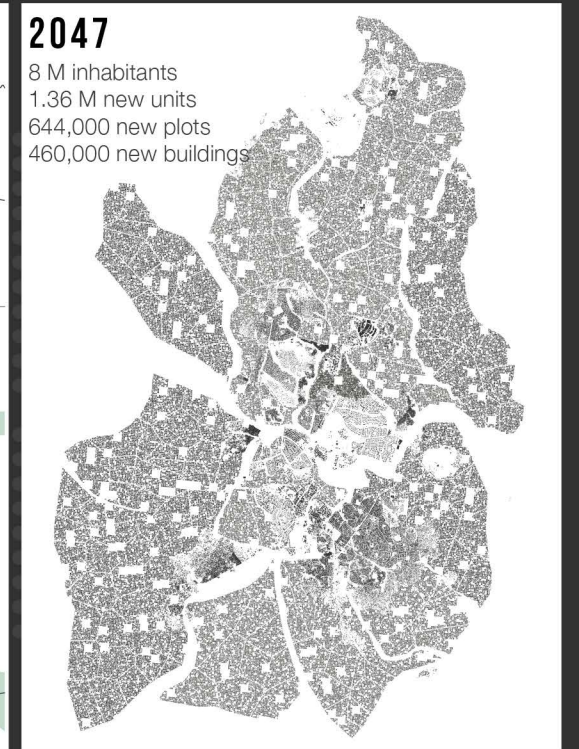
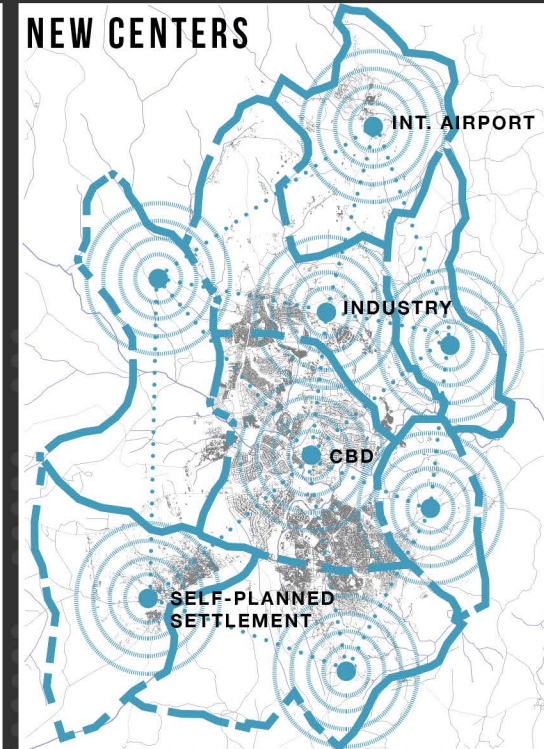
Based on DGBN & WHO recommendations.

### GREEN PER CAPITA

environmental sustainability  
city-wide scale

# CASE #03

## City-wide urban expansion simulation



# LILONGWE

## Neighborhood-scale organic densification study

### GROWTH SIMULATION

spatial dimension  
various scales



# NEXT STEPS...

- 1 | Detailation of indicator-based sustainability assessment  
(selection, weighting, aggregation, ...)**
- 2 | Development of methodology for data-mining and data-base  
management, especially for case Lilongwe**
- 3 | Technical solution for combining GIS, 3D-modelling, parametric  
simulation, data processing & visualization**

# THANK YOU!

Muchas  
Gracias!

Zikomo  
kwambiri!

唔該



**Urban Framework**

NON-PROFIT ORGANIZATION

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[facebook.com/urban-framework](https://facebook.com/urban-framework)