

**Deep Dive**

# **Harnessing Data for Urban Insights: Observatories and the Urban Monitoring Framework (UMF)**

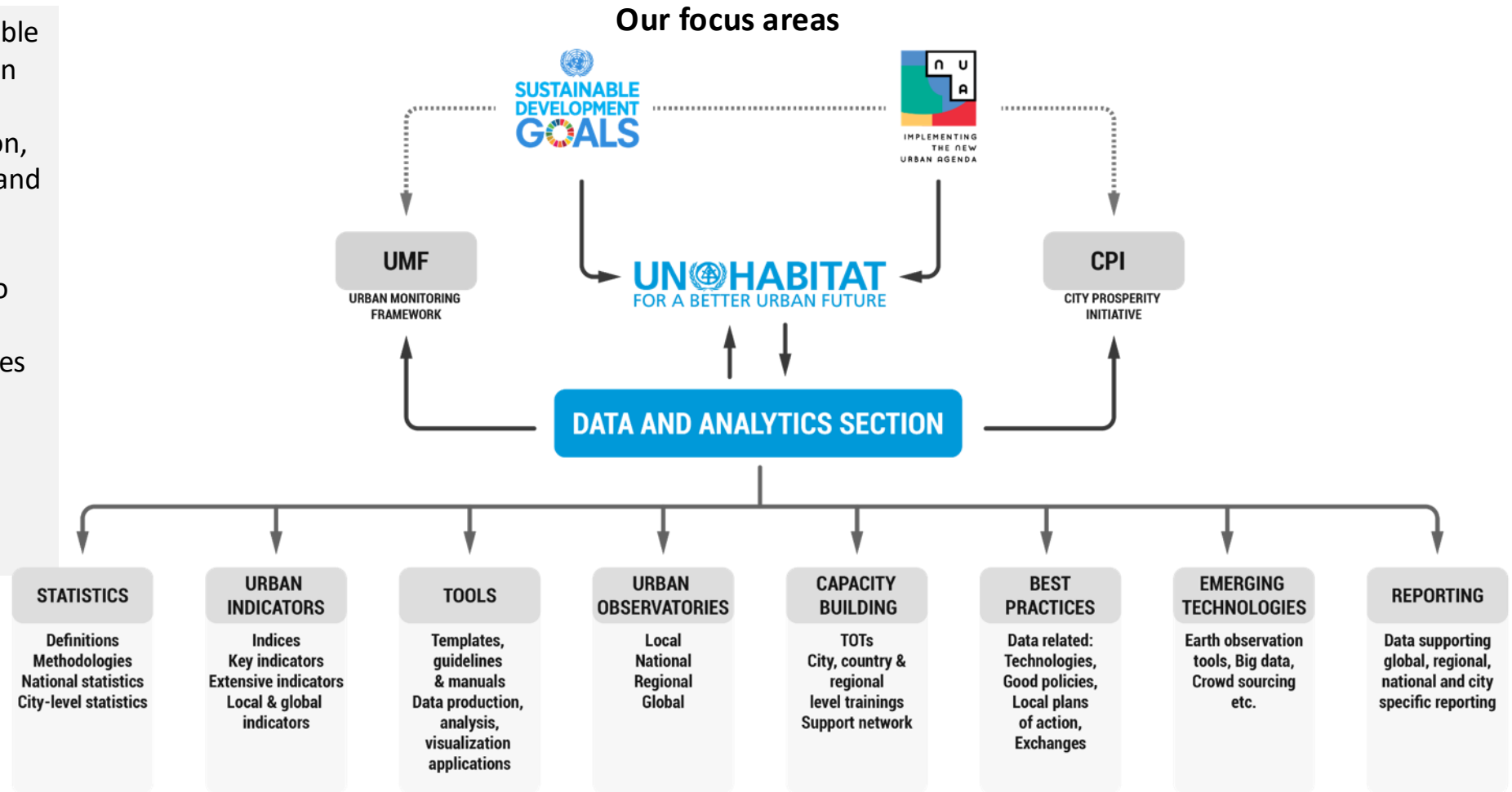
**Robert Ndugwa**

Chief, Data and Analytics Unit

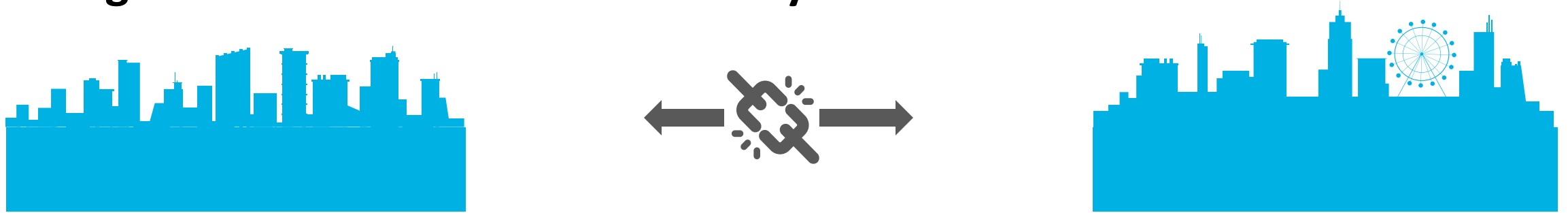


# About the Data and Analytics Unit, UN-Habitat

- Focal point for sustainable urbanization data within the SDGs
- Oversee data production, capacity development and reports production
- Lead development of tailor-made solutions to measure urban development trajectories and conditions



# Background to the Urban Observatory Model



Many cities face major disconnects between data production and decision-making processes



- Lack of good quality, relevant, accessible and timely data on cities
- Too much information that is not well-linked, complexities in data collection and management



**Hence the Urban Observatory model was created to:**

Assist countries in strengthening data capacities at national, sub-national, and local levels, providing platforms to facilitate effective knowledge exchange and promote evidence-based governance.

# What is an urban observatory?

A local network and integrated system for producing, analyzing, disseminating data across indicators and its use for informed decision-making at local level

Constitutes both a process and a platform

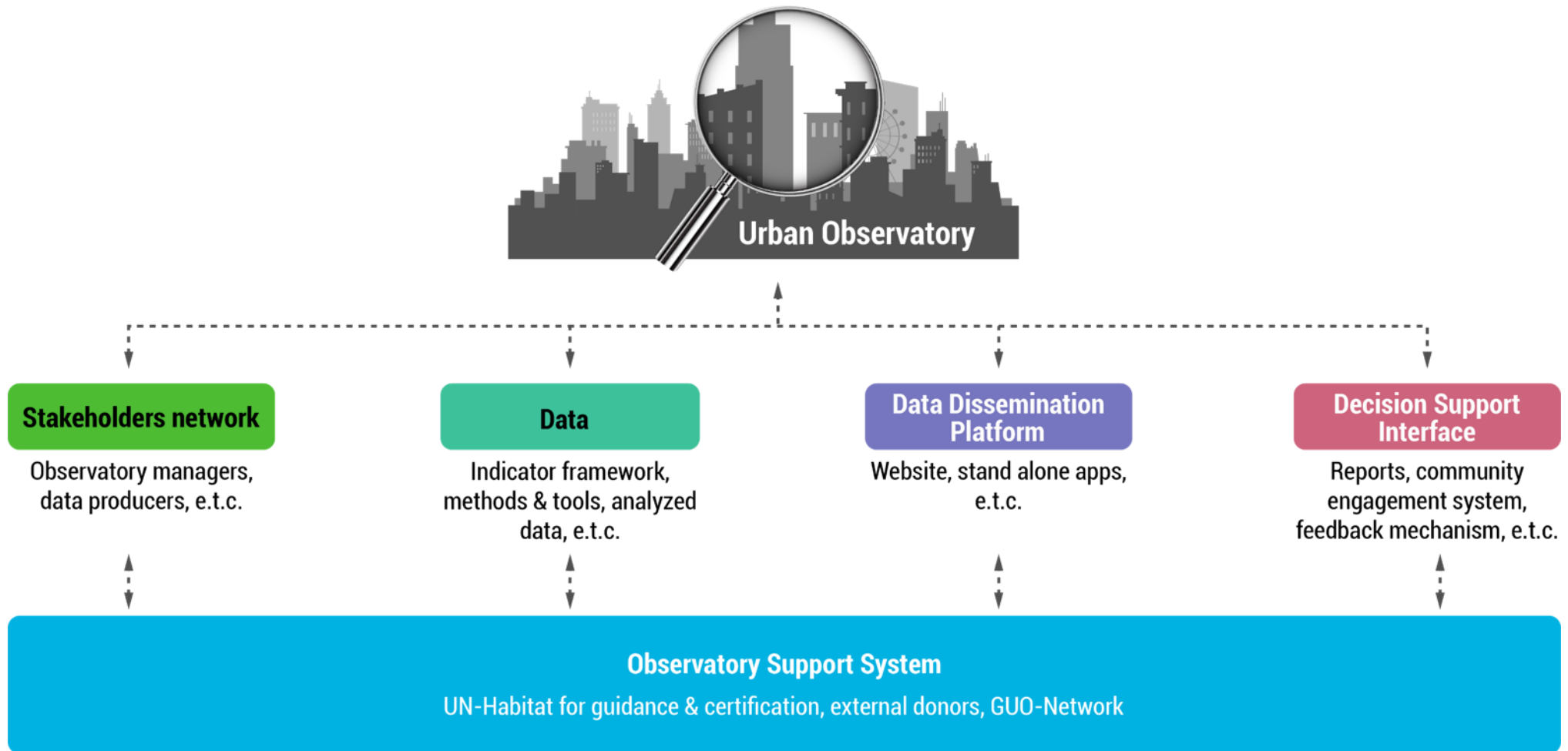
## Specific Aims

Create sustainable urban monitoring systems in support of local planning and management processes, linking data to policy

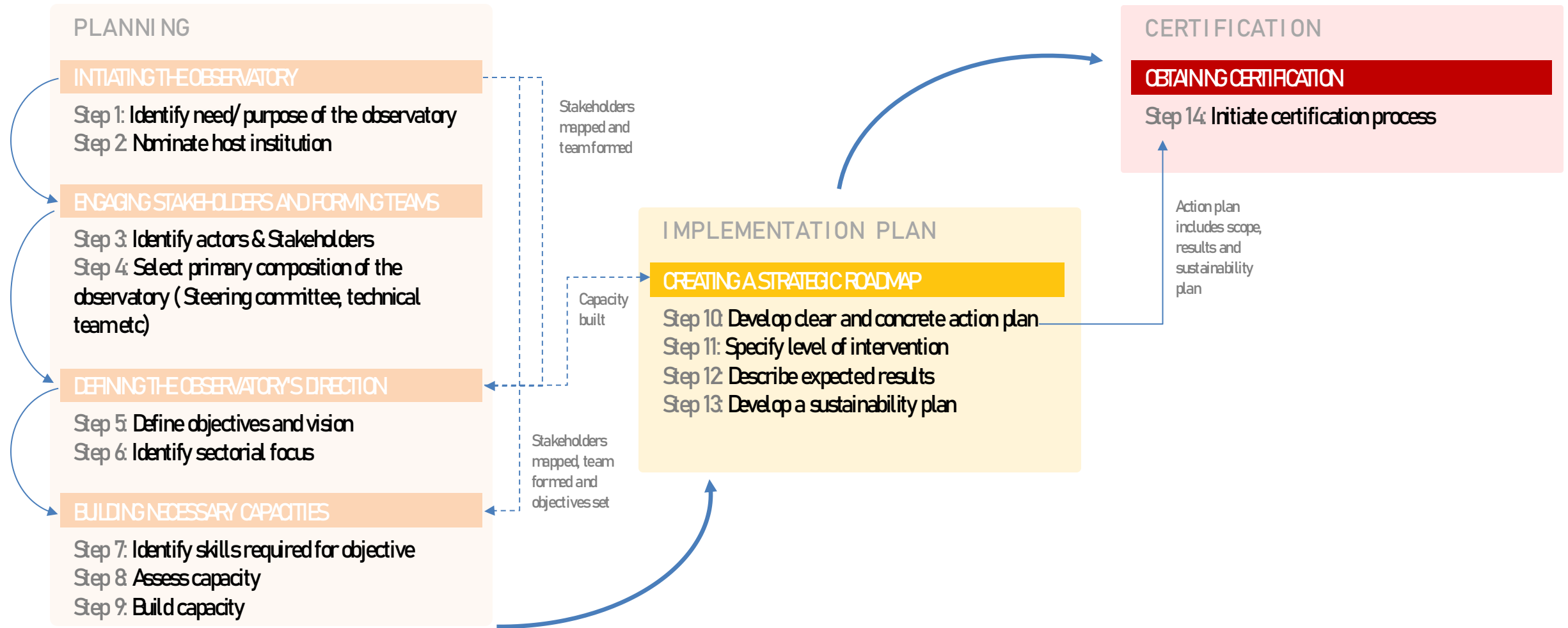
Strengthen local **capacity** for the development and use of urban indicators that facilitate the collection of disaggregated data at city and sub-city levels

Promote local **ownership** of urban indicator systems and a culture of monitoring and assessment in the urban sector.

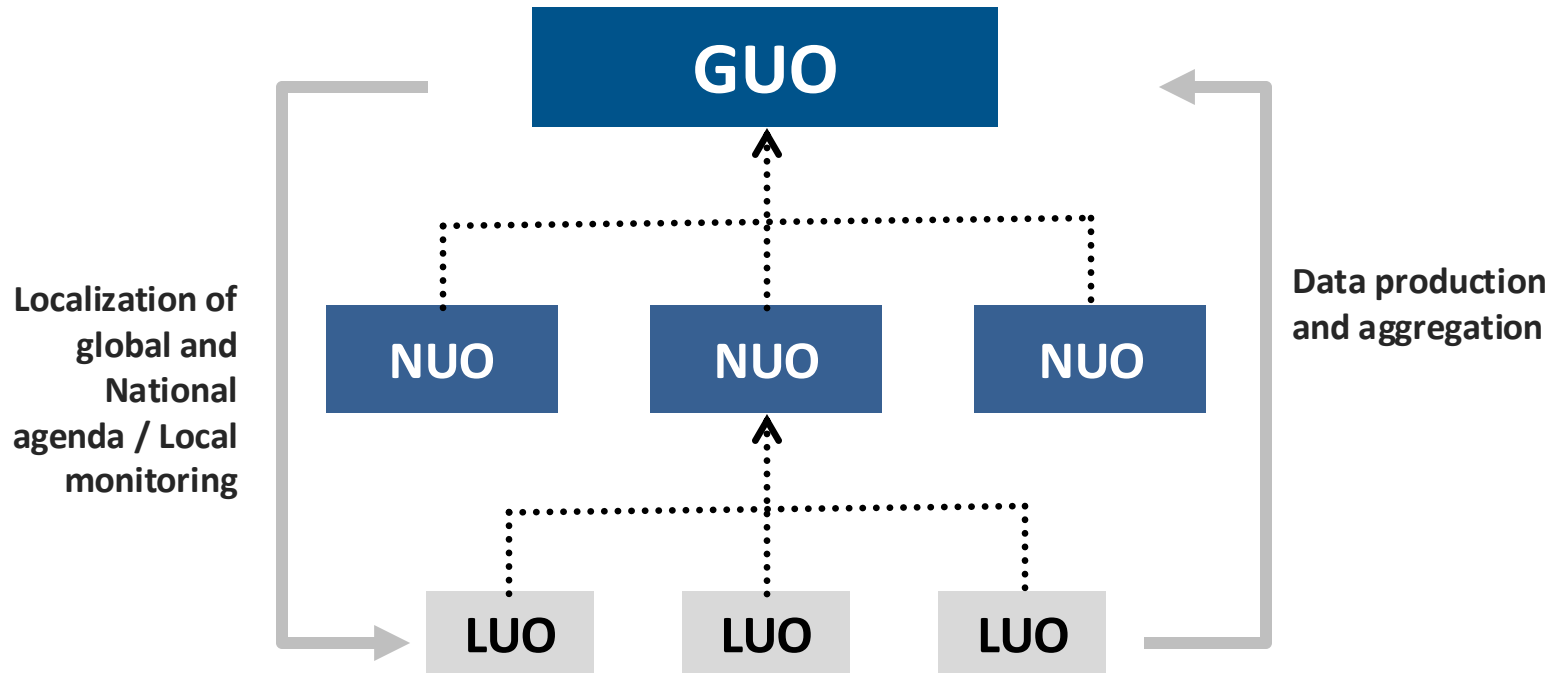
# How an urban observatory works....Five key components



# Steps in setting up an urban observatory



# Interactions between different urban observatory levels



**Different observatories are housed at different places**

**LUOs** - existing city department, non-governmental organization or university.

**NUOs** – statistical offices, ministry in charge of planning / urban development, research institute

**GUO** –UN-Habitat



# Urban Observatories are connected through the GUO-Network



A worldwide network of urban observatories at different levels, aimed at sharing knowledge and supporting implementation of urban agendas at the national and local levels.

Technical guidance



Provide Technical guidance to LUO, NUO and RUO in urban planning and policy issues

Inform



Improve information flows between all levels for better urban decision-making

Share



Share best practices and lessons learnt

Facilitate partnerships



Facilitate partnership agreement

Guide policy formulation



Guidance in informed policy formulation

GUO-Network is managed through a steering committee, recommended by the network members and constituted in 2022



# UN-Habitat's support



## Supporting UOs setup and capacity development

Capacity building activities on UO set up and monitoring needs



## Monitoring frameworks

Development of guides and manuals on monitoring needs at the local level based on global standards eg UMF



## Institutional assessments and needs assessment consultations

Support UOs to identify institutional partners and personnel and conduct initial needs assessment activities.



## Partnerships

Relationships with wide range of urban stakeholders and other urban observatories to learn from past experiences regarding methods and approaches  
+  
Overall coordination of GUO-Net activities

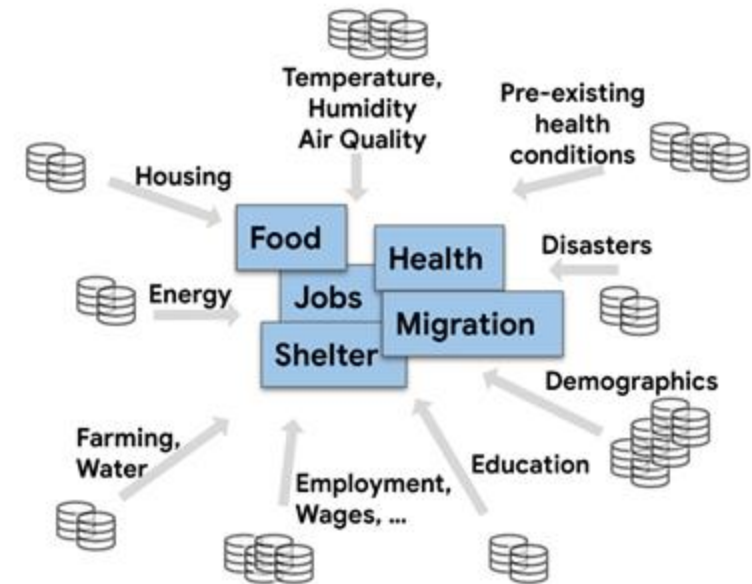


## Certification process

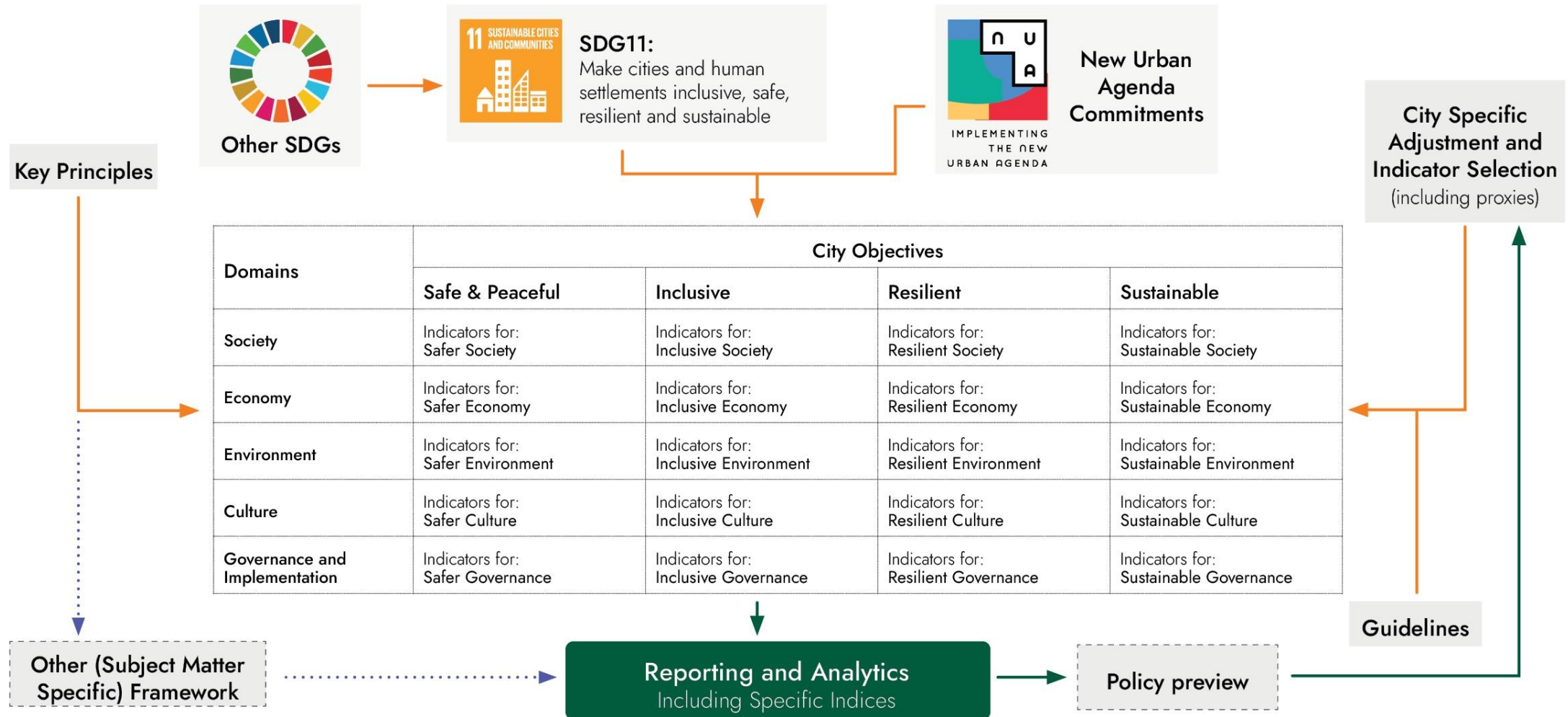
# Why the Global Urban Monitoring Framework

- ✓ Many of the big challenges we face — climate change, increasing inequities, epidemics of diabetes — **will need deep, holistic insights** (data) to solve for urban areas.
- ✓ **Complex challenges don't get solved with a single data source**
- ✓ **Data fragmentation** gets in the way of being used to make a big difference.

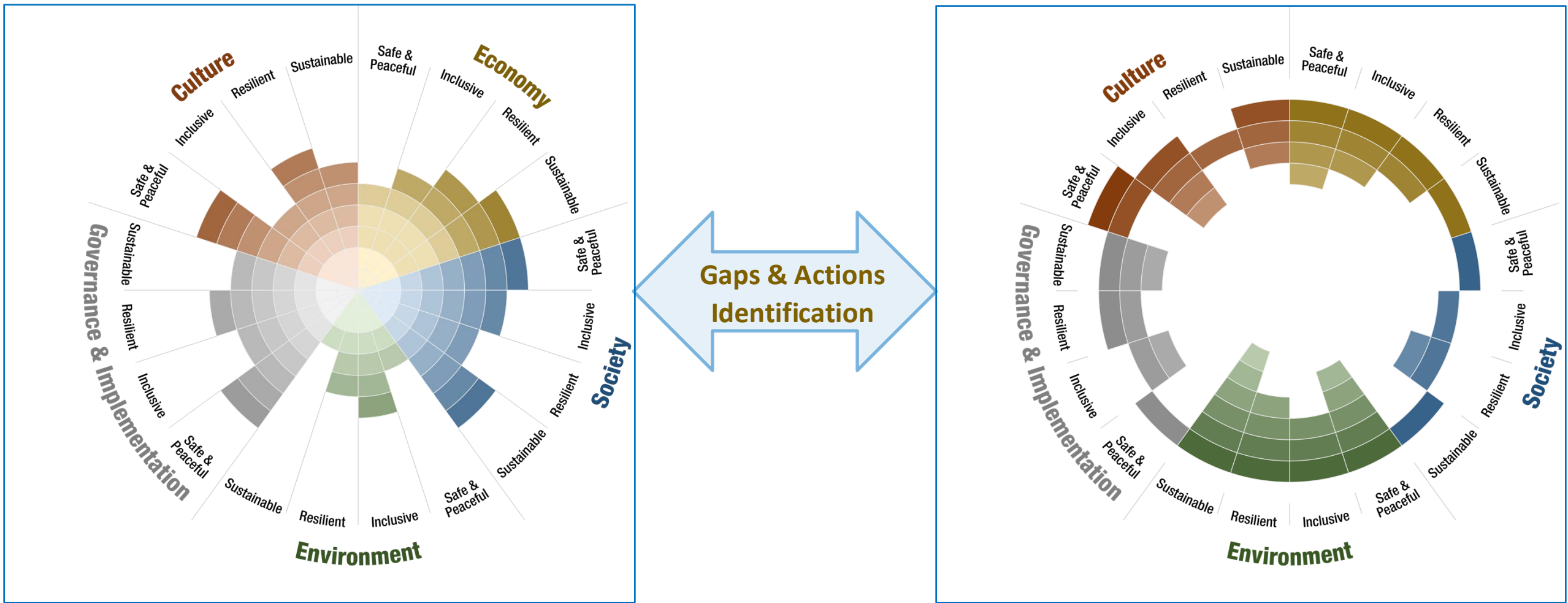
Climate change in cities • Example



# The Global Urban Monitoring Framework

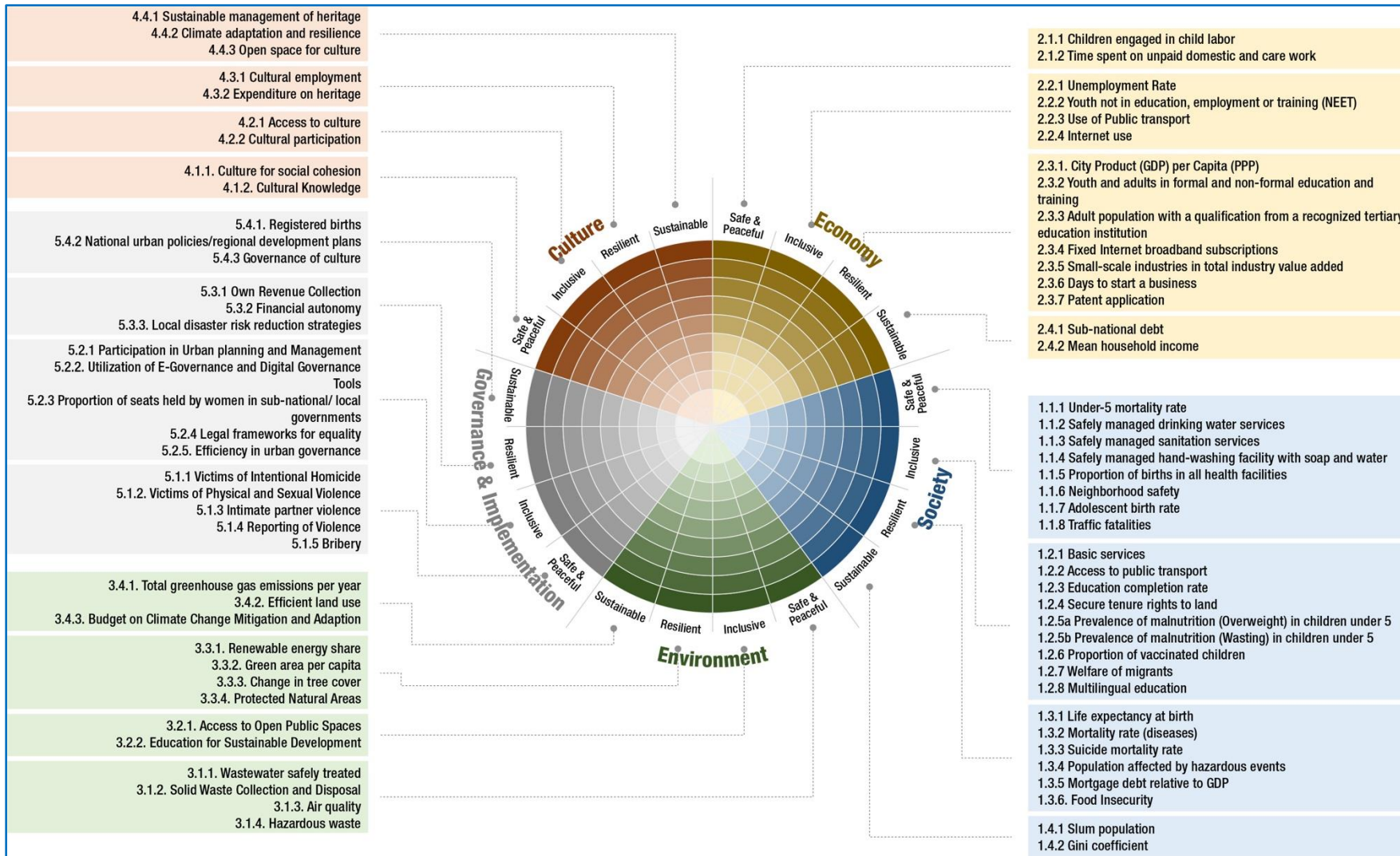


# The UMF helps link monitoring to local actions





# The UMF Wheel Diagram



# The UMF Adapted Indices & SDG Alignment

City Objectives	Indicator	Sources/ Origins	Spatial Indicator
<b>1. Society</b>			
<b>1.1 Safe and Peaceful</b>	1.1.1 (UMF-01)	Under-5 mortality rate	SDG 3.2.1
	1.1.2 (UMF-02)	Safely managed drinking water services	SDG 6.1.1
	1.1.3 (UMF-03)	Safely managed sanitation services	SDG 6.2.1a
	1.1.4 (UMF-04)	Safely managed hand-washing facility with soap and water	SDG 6.2.1b
	1.1.5 (UMF-05)	Proportion of births in all health facilities	UNICEF 8
	1.1.6 (UMF-06)	Neighborhood safety	SDG 16.1.4
	1.1.7 (UMF-07)	Adolescent birth rate	SDG 3.7.2
	1.1.8 (UMF-08)	Traffic fatalities	SDG 3.6.1
<b>1.2 Inclusive</b>	1.2.1 (UMF-09)	Basic services	SDG 1.4.1
	1.2.2 (UMF-10)	Access to public transport	SDG 11.2.1
	1.2.3 (UMF-11)	Education completion rate	SDG 4.1.2
	1.2.4 (UMF-12)	Secure tenure rights to land	SDG 1.4.2
	1.2.5a (UMF-13a)	Prevalence of malnutrition in children under 5 (Overweight)	SDG 2.2.2a
	1.2.5b (UMF-13b)	Prevalence of malnutrition in children under 5 (Wasting)	SDG 2.2.2b
	1.2.6 (UMF-14)	Proportion of vaccinated children	UNICEF 9
	1.2.7 (UMF-15)	Welfare of migrants	SDG 10.7.2
	1.2.8 (UMF-16)	Multilingual education	C2030-15
<b>1.3 Resilient</b>	1.3.1 (UMF-17)	Life expectancy at birth	CPI
	1.3.2 (UMF-18)	Mortality rate (diseases)	SDG 3.4.1
	1.3.3 (UMF-19)	Suicide mortality rate	SDG 3.4.2
	1.3.4 (UMF-20)	Population affected by hazardous events	SDG 11.5.1
	1.3.5 (UMF-21)	Mortgage debt relative to GDP	NUA 3.7
	1.3.6 (UMF-22)	Food Insecurity	SDG 2.1.2
<b>1.4 Sustainable</b>	1.4.1 (UMF-23)	Slum population	SDG 11.1.1
	1.4.2 (UMF-24)	Gini coefficient	CPI



*City Prosperity Index (CPI)*

*Has now been replaced by the UMF.*



**Quality of Life Initiative**



**Economist Impact –  
Urban Performance Index (UPI)**



**Shanghai UMF Adapted Index (SAI)**





# Some examples of urban observatories

## Gauteng City-Region Observatory, South Africa

- Launched September 2008
- Institutional collaboration between:
  - Gauteng Provincial Government
  - Organised local government in Gauteng
  - University of the Witwatersrand (Wits)
  - University of Johannesburg (UJ)
- Funded with a core grant from the Gauteng Premier's Office, with UJ and Wits contributing additional in-kind support

### Main areas of work

On request policy work

Data, indicators and benchmarks

Medium to long term research

Academic contributions

Partnership and networks

Government – academia portal

### Research Themes

#### Data Analytics, Informatics & Visualisation

This research area encompasses exploring, interrogating, and experimenting with novel data collection methods and data-driven analytical approaches and more innovative data visualisation and communication platforms to better understand the GCR and translate insights into consumable formats for better decision-making.

[Read More](#)






# Some examples of urban observatories

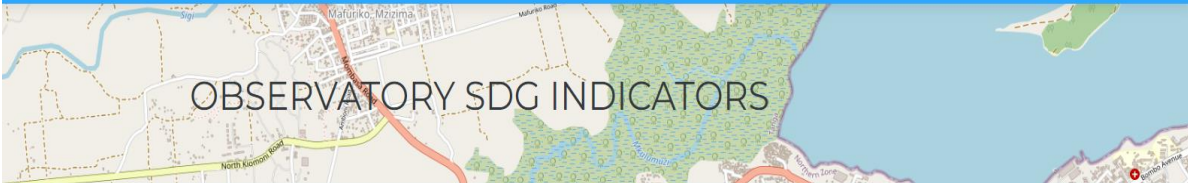
## Tanga City Observatory, Tanzania

TANGA YETUHOMEABOUT USSDGS INDICATORS SUMMARY- LIBRARY- MAPCITY ALERTSDEV. CONTROLINFORMAL LAND SURVEYACCOUNT-



TANGA CITY OBSERVATORY

HOMEABOUT USSDGS INDICATORS SUMMARY- LIBRARY- MAPCITY ALERTSDEV. CONTROLINFORMAL LAND SURVEYACCOUNT-




OBSERVATORY SDG INDICATORS

Goals	Indicators	Area Coverage in M²	Area Coverage in %
2. End hunger achieve food security and improved nutrition and promote sustainable agriculture	2.4.1 Proportion of urban agriculture land which is in production use	194811156.2	30.92
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.3.1 Proportion of land dedicated to industrial use	44970240.22	7.14
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	15.1.1 Forest area as a proportion of total land area	53899686.84	8.6
	15.4.1 Coverage by protected areas of important sites and biodiversity	53899686.84	8.6

<https://tanga.cityobservatory.org.tz/>


Explore Use Cases

Check out the state of Tanga Urban on these different use cases for insights




Spatial Safety Index

Data to enable youth and other residents identify and avoid hazards




Solid Waste Management

Youth and community based data



Development Control

Facilitate community based development control enabled by realtime digital spatial data which



Public Space Development

Facilitate co-creation of public spaces with youth as primary drivers who drive the space designs from their needs. The designed spaces are

TANGA YETUHOMEABOUT USSDGS INDICATORS SUMMARY- LIBRARY- MAPCITY ALERTSDEV. CONTROLINFORMAL LAND SURVEYAC

Data Library

Explore the various datasets as collected by the Tanga City Council

Infrastructure, Rural & Urban development

Natural resources & Environmental conservation

Waste management & Sanitation

Education

Health, Social welfare & Nutrition services

Catchment Area

Industry, Trade & Investment

Finance, Account & Internal Audit

Legal & Procurement

Planning & Coordination

Administration & Human Resource

Agriculture, Livestock & Fisheries

ICT & Government Communicatio service

Sports, Culture & Arts

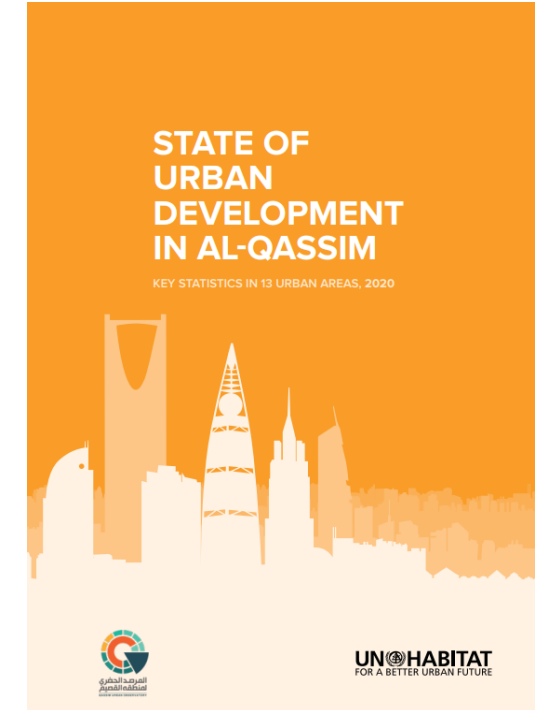
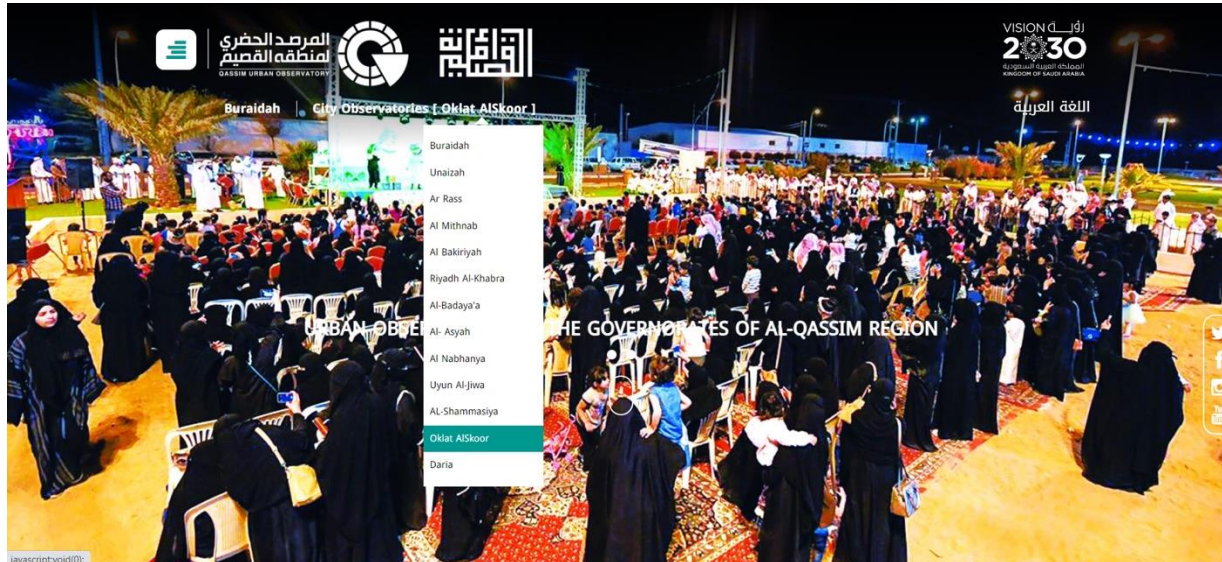
Youth & Innovations

Publications & Resources

Want to add more Datasets or Collaborate? Please

# Some examples of urban observatories

## Qassim Urban Observatories, Saudi Arabia



<https://portal.marsad-buridah.com/Pages/2/101/Hbme>

<https://alqadityaobservatory.org/>



# Some examples of urban observatories

## Perspective. Brussels, Belgium



News Diary Publications Jobs



Welcome Urban projects Urban issues Statistics and analytics Planning tools Who are we ?

Belgian presidency 2024

fr nl in

perspective.brussels

Understand, inspire and act for the Region of tomorrow

<https://tanga.cityobservatory.or.tz/>



# More information ....



<https://data.unhabitat.org/pages/urban-observatories>

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URBAN INDICATORS  
DATABASE

ABOUT

DATA BY THEME ▾RESOURCES ▾SDGs and NUA ▾

Urban Observatories

To help find creative solutions to the urban information crisis, UN-Habitat developed the urban observatory model for urban data collection and analysis, in partnership with cities around the world. Urban observatories are well-positioned to address the frequently expressed need for reliable, high resolution urban datasets specific to the cities and immediate city-regions in which they operate. They assist in strengthening data capacities at national, sub-national, and local levels, providing platforms to facilitate effective knowledge exchange and promote evidence-based governance built on a shared knowledge base.

Urban Observatories consist of five major components: a stakeholder network who help operationalize it, data, a data dissemination platform, an observatory support system and a decision support interface.

**Stakeholders network**  
Observatory managers, data producers, e.t.c.

**Data**  
Indicator framework, methods & tools, analyzed data, e.t.c.

**Data Dissemination Platform**  
Website, stand alone apps etc

**Observatory Support System**  
UN-Habitat for guidance & certification, external donors, GUO-Network

**Decision Support Interface**  
Reports, community engagement system, feedback mechanism etc

Urban Observatory

# Urban Indicator Database

Home button

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DATABASE

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## Quick links to datasets

DATA BY THEME

RESOURCES

- Urban population trends
- Access to basic services in cities and urban areas
- Economic indicators
- Housing, slums and informal settlements
- Open spaces and green areas
- Social inclusion indicators
- Spatial growth of cities and urban areas
- Urban environment and quality of life
- Urban transport

## Quick links by theme



### E-Learning resources on SDG 11 released

Countries, cities and other organizations working on urban data production continue to face challenges of many reporting requirements from the current global frameworks, which is coupled with a growing need to disaggregate data to smaller geographical units and across socio-demographic groups, in line with the leaving no one behind principle.

Through its custodianship on SDG 11 and other urban indicators, UN-Habitat has developed a diversity of learning materials to help harmonize urban data production. The latest package of resources includes self-paced audio-visual courses which present descriptive and practical step-by-step guidance on how to compute SDG 11 indicators.

Read More



Datasets



Data Visualizations



Publications



Guidance



Urban Observatories



COVID-19

Datasets

Data Visualizations

Publications

Guidance

Urban Observatories

COVID-19

Urban Monitoring Framework

Capacity Development

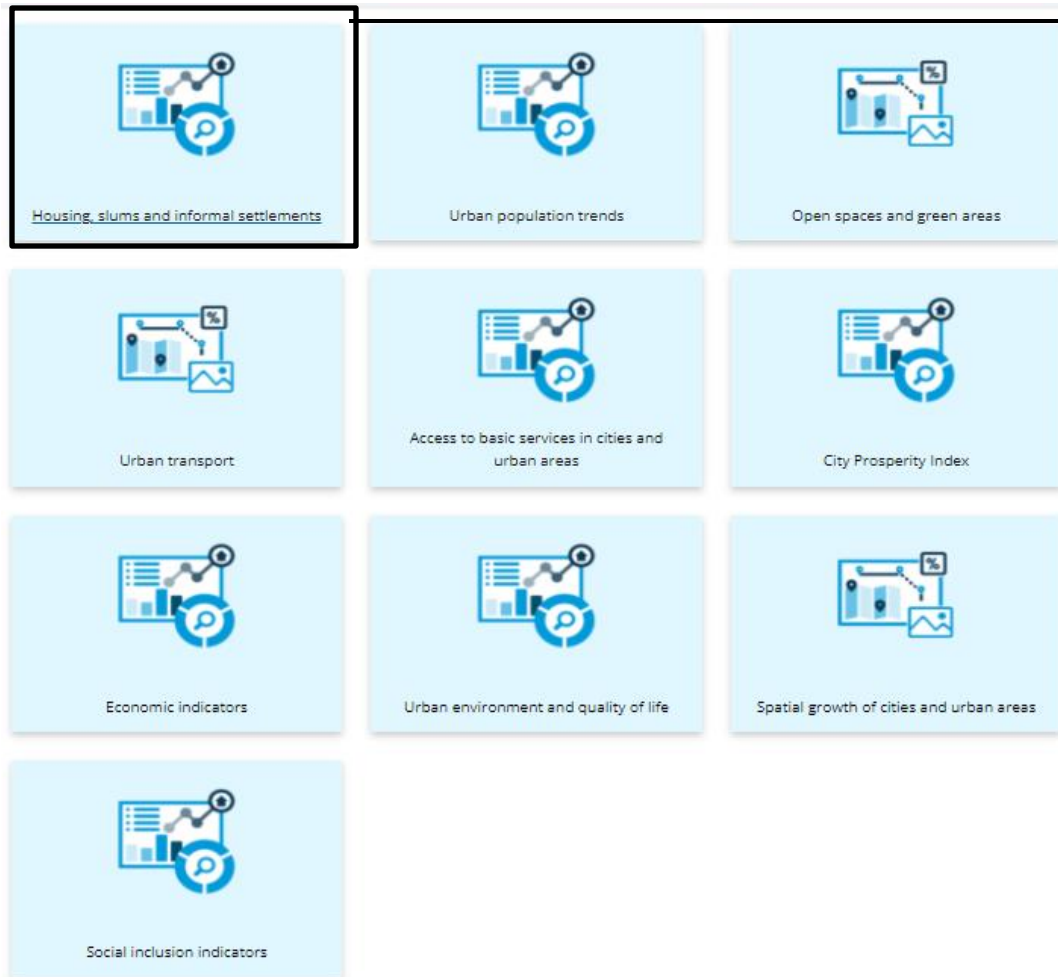
City Prosperity Index

National Sample of Cities

News and Data Stories



# The Urban Indicators Platform: Datasets



## Housing, slums and informal settlements



Download Spreadsheet	Explore Data	Indicator Title	Description
<a href="#">Download Spreadsheet</a>	<a href="#">View Dataset</a>	Urban Population Living in Slums by Country or Area 1990-2018 (Thousands)	Total estimated urban population living in slum households per country and region, based on 4 out of 5 household shelter deprivations defined by UN-Habitat as indicators of informality: lack of access to improved water, lack of access to improved sanitation, lack of sufficient living area and quality/durability of structure. Security of tenure is the fifth deprivation that is not included due to data limitations.
<a href="#">Download Spreadsheet</a>	<a href="#">View Data</a>	Proportion of Urban Population Living in Slum Households by Country or area 1990 - 2018 (Percent)	The share of urban population living in slum households per country and region, based on 4 out of 5 household shelter deprivations defined by UN-Habitat as indicators of informality: lack of access to improved water, lack of access to improved sanitation, lack of sufficient living area and quality/durability of structure. Security of tenure is the fifth deprivation that is not included due to data limitations.

## Related resources



Monitoring SDG Indicator  
11.1.1 (Urban Data Digest  
Series)



The Global Housing  
Affordability Challenge  
(Urban Data Digest Series)

# The Urban Indicators Platform: Guidance

## SDG 11+ Metadata



SDG 11.4.1: Access to basic services

[Download Metadata](#)



SDG 11.4.2: Land rights and tenure security

[Download Metadata](#)



SDG 6.3.1: Wastewater management

[Download Metadata](#)



SDG 11.2.1: Sustainable urban transport

[Download Metadata](#)



SDG 11.3.1: Demographic and spatial urbanization trends

[Download Metadata](#)



SDG 11.3.2: Participation in planning processes

[Download Metadata](#)

## SDG 11+ step by step computation resources



SDG 11 Computation E-learns

[Read more & start learning](#)



SDG 11.4.2: Land rights and tenure security

[Download Module](#)



SDG 6.3.1: Wastewater management

[Download Module](#)



SDG 11.2.1: Sustainable urban transport

[Download Module](#)



SDG 11.7.1: Open public spaces

[Download Module](#)



SDG 11.a.1: National Urban Policies

[Download Module](#)

Linkages to UN-Habitat learning platform: <https://learn.urbanagendaplatform.org/>



# The Urban Indicators Platform: SDGs and NUA

## SDG 11 progress tracking and identification of required actions / interventions

### SDG 11 targets score progress at the global level

#### SDG Target 11.1



With more than one billion people living in slums today, the world is still a long way from attaining sustainable urbanization and access to decent housing and quality of life for all. Informal settlements and slums remain the only home for millions of urban residents in developing countries, with populations lacking access to basic services such as water and sanitation. Equally, many more populations in all world regions suffer from other housing related inequities such as homelessness, unaffordability and inadequacy, all of which further make the attainment of target 11.1 a far-fetched goal.

The COVID-19 pandemic has further worsened the situation in many urban centers, and as economies recover, the urban poor, many of whom live in informal settlements continue to experience the severest of impacts and risks. Amidst this pandemic, achieving affordable and adequate housing for all by 2030 requires renewed policy focus and increased investments in the low-cost housing sector. If the concerns of the urban poor and marginalized remain ignored, then the

goal to "make cities and human settlements inclusive, safe, resilient and sustainable" will only be achieved partially, and in the process, deny millions the benefits of urbanization.

#### SDG Target 11.2



Provision and access to public transport significantly improves access to opportunities and services in cities and urban areas, with the poor being the biggest beneficiaries. Based on data from a globally representative sample of 610 cities from 95 countries, only half of the world's population is estimated to have access to a public transit stop/ station within a walking distance of 500 meters (for capacity transport systems e.g. buses, trams etc) and 1000 meters to high capacity systems (e.g. trains, metros, ferries, etc), indicating that we are at the half-mark in attainment of target 11. While all regions need to invest more in public transport, significant action is needed in Eastern and South-eastern Asia, Central and Southern Asia, Sub-Saharan Africa and Western Asia and Northern Africa, where access ranges from 33% to 38%.

Only three sub-regions recorded more than 10% convenient access to high capacity transport systems, with North America and Europe recording the highest access at 31.7%. In addition, many cities, especially those in Western Asia and Northern Africa and the Sub-Saharan Africa sub-regions have a high prevalence of informal transport systems. These

systems depict unique characteristics, some of which include unclear operational and regulatory structures, lack of clearly identifiable pickup and drop off patterns and unclear route patterns, yet they significantly contribute to access to opportunities and services in these regions.

Countries and cities have a major task ahead to put in place systems for enhancing access to safe, affordable, accessible and sustainable public transport systems, which should be integrated with other modes such as walking and cycling. The required interventions range from direct investments in the core infrastructure to formulation and

## Disseminating NUA monitoring information

### Guidance documents



NUA Indicator Framework

[Download Framework](#)



Guidelines for Reporting on the Implementation of NUA

[Download Guidelines](#)

### Related resources



[Urban Agenda Platform](#)

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The Global Public Space Programme

In the last decade, there has been a growing attention to public space as a key component of sustainable urban development. During the 23rd Session of the Governing Council of UN-Habitat in 2011, member states mandated UN-Habitat to consolidate agency-wide work on public space, to develop and promote public space policy, coordination, disseminate knowledge and directly assist cities in public space initiatives.

In 2012, UN-Habitat established the Global Public Space Programme (GPSP) to improve the quality of public spaces worldwide. The Programme is currently active in 40 countries. It helps cities become more sustainable by providing policy advice, capacity building, knowledge sharing and support for public space regeneration and improvement.

Read More ..

## Our Tools

Public space assessments

Her City

SDG 11.7.1

City-wide public space strategy

Block-by-Block

Public space upgrading

# The Urban Indicators Platform: Towards harmonization of UN-Habitat data dissemination

Global Public Space Programme

City Wide Assessment Dashboard

Accessibility Index

Selection required on one or more elements

Safety Index

Selection required on one or more elements

Inclusivity Index

Selection required on one or more elements

Comfort Index

Selection required on one or more elements

User Index

Selection required on one or more elements

Green Index

Selection required on one or more elements

Infrastructure Index

Selection required on one or more elements

Priority for Improvement

Selection required on one or more elements

Walking Distance

Name

0-5

5-10

Streets

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**THANK YOU!**

