

# Measuring, Monitoring and Comparing SDG Indicators; New and Integrated Indicators? *Need for an Infrastructure*

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**CSDILA**

THE CENTRE FOR SPATIAL  
DATA INFRASTRUCTURES  
& LAND ADMINISTRATION



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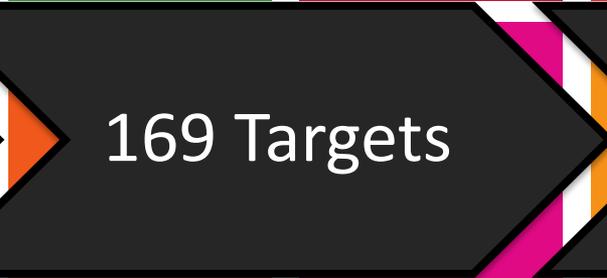
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31 July 2017, New York

# SDGs: Targets and Indicators



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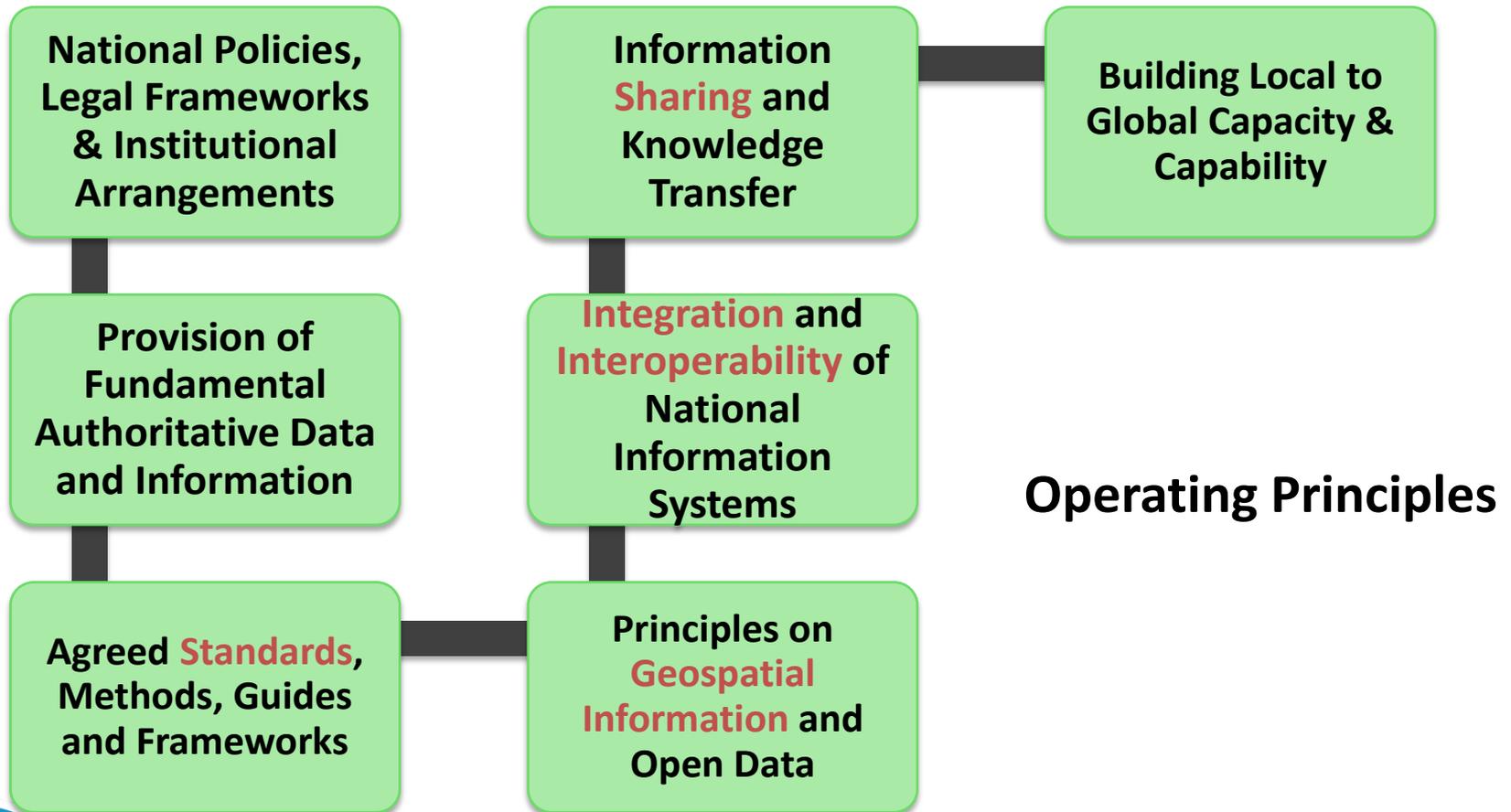
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# UN-GGIM 2017-2021 Strategic Framework

**Vision:** Positioning Geospatial Information to Address Global Challenges



# Data Requirements

- Development of **data standards** and best practices in parallel with available technology and users' needs
- New data sources and technologies for data **collection** and **integration** of different sources of data

- Development of **open data** frameworks to ensure citizen-governance and user participation among citizens and users

- New **open data** frameworks and civil society participation to ensure transparency and accountability and contribute to achieving the SDGs

- Modernization of **data governance** and quality frameworks
- The **integration of geospatial information** and statistical data

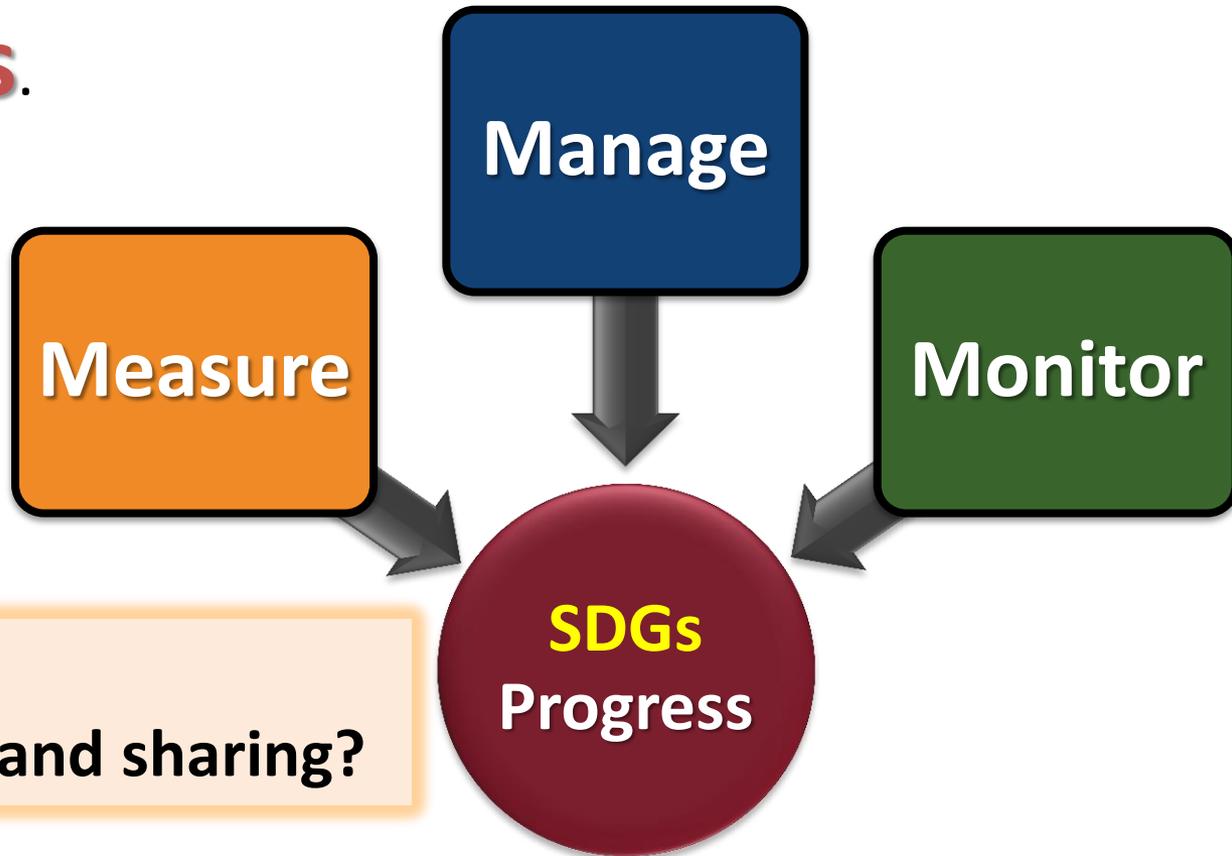
**UN-GGIM Forum on the 2030 Agenda for Sustainable Development “Where is the Data?”**

**Tomorrow, Conference Room 3**



# SDGs Indicators

The Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) has developed a **global indicator framework** of **232 indicators**.



How can we facilitate indicator registration and sharing?



# UADI-Urban Digital Data Infrastructure

A digital data **infrastructure** that intends to enable the **integration**, **harmonization**, **connectivity** and **scalability** of **multi-source urban datasets**.

The infrastructure aims to develop a **new ontological framework** and a **dictionary** to underpin the **next generation** of **data driven modeling** and **decision-support tools** to enable **smart, sustainable, productive**, and **resilient** cities.



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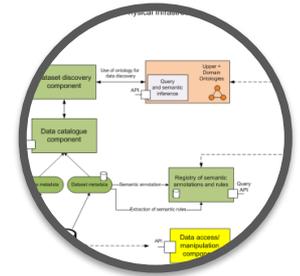
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# UADI-Objectives

1 To provide an underlying **framework** for **harmonisation** and **integration** of urban data by adopting the ISO 37120 and ISO 19115 standards.



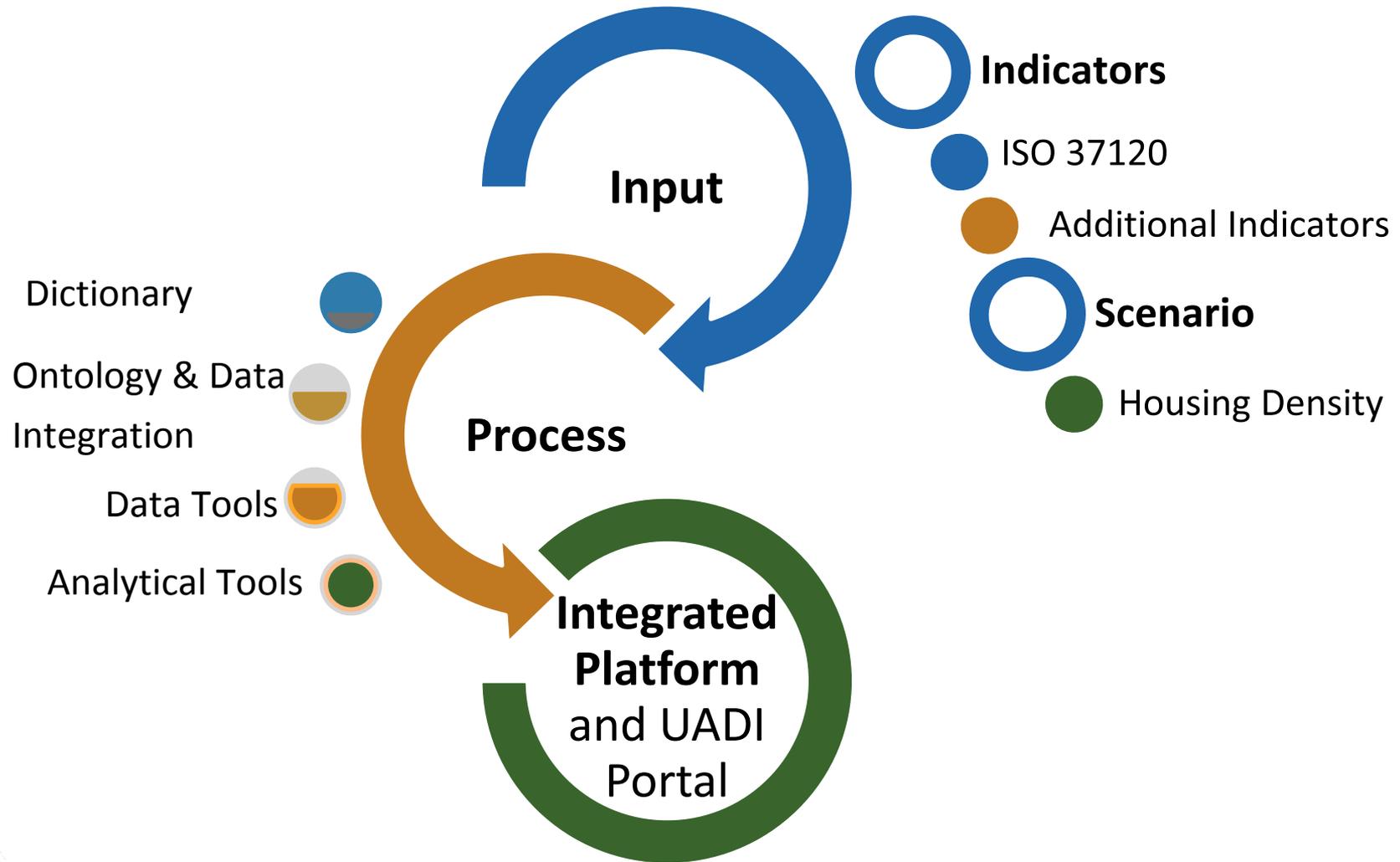
2 To develop **data tools**, including data access, **registry**, **integration** and metadata API through adoption of OGC standards.

Status	Health	Operation Name	Database Name	Type
14	✓	DPHD	UOH	WFS
19	✓	CMI	CLIE	WFS
23	✓	DHS	DHS	WFS
28	✓	Health	Health	WFS
32	✓	VicRoads	VicRoads	WFS
33	✓	EPA	EPA	WFS
40	✓	UACI	UACI-Geo	WFS
41	✓	VESC	VESC	WFS
42	✓	UOH	UACI_Database	WFS
43	✓	VicPolice	VicPolice	WFS
44	✓	VICPOL	VICPOL	WFS
45	✓	VICPD	DBECO	WFS

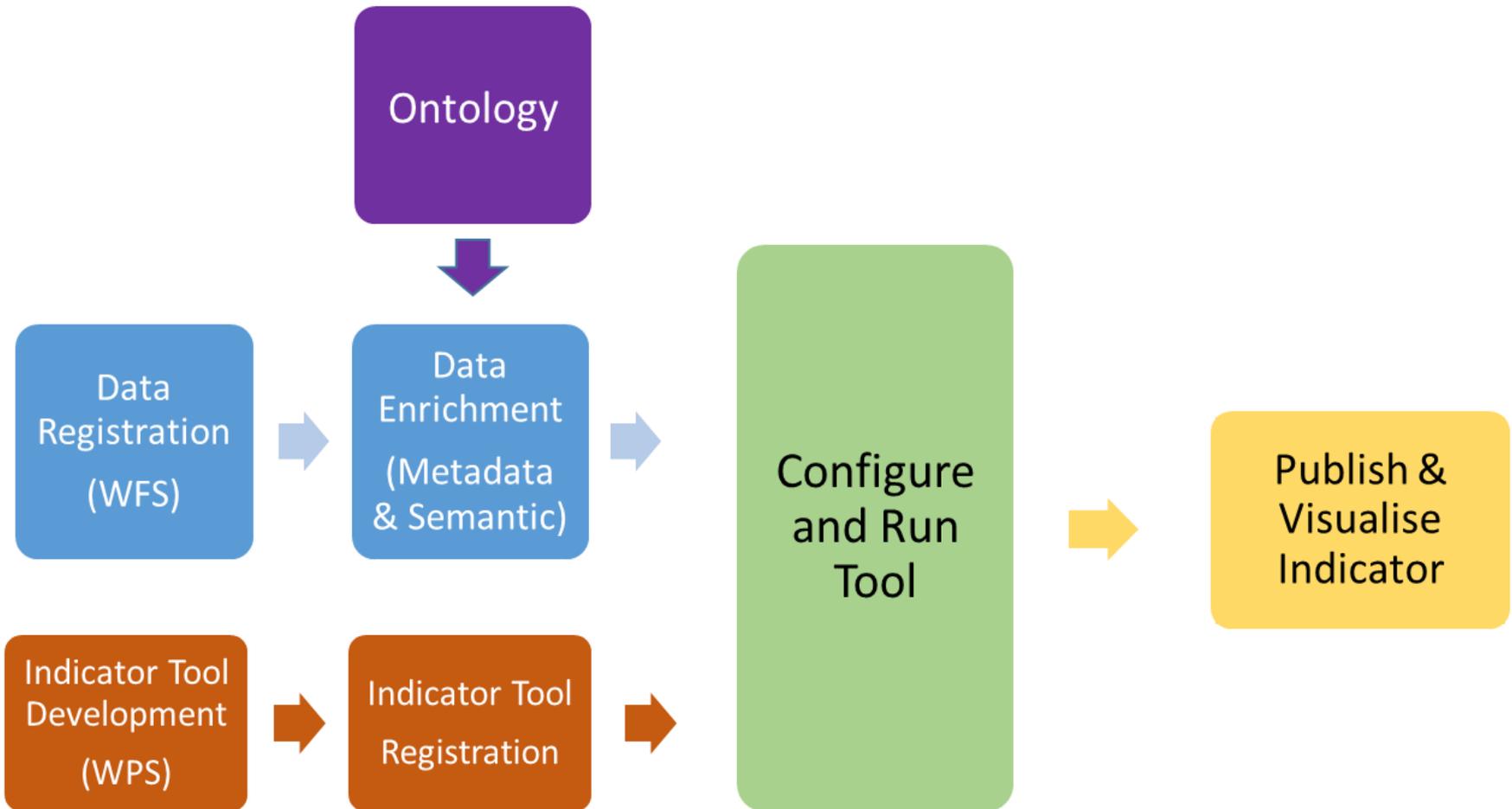
3 To develop an **integrated platform** and web-portal to visualise and evaluate the cross-jurisdictional and cross-domain performances.



# UADI-Workflow



# Development Components

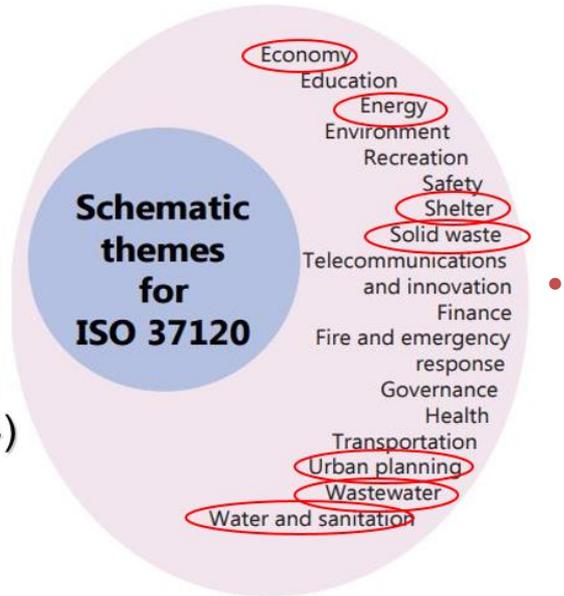


# Input

- Selection of ISO 37120 City Indicators

(38 Core and Supporting Indicators)

- Economy (5.1 – 5.7)
- Energy (7.1, 7.2, 7.4 – 7.5)
- Shelter (15.2)
- Solid Waste (16.1 – 16.10)
- Urban Planning (19.1 -19.4)
- Wastewater (20.1 – 20.5)
- Water and Sanitation (21.1 – 21.7)

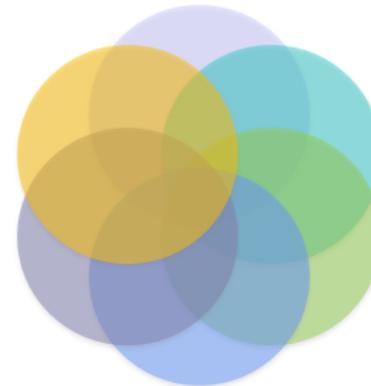


- Housing size, type, and diversity
- Housing/Rental affordability

- Transportation**
- Accessibility to job and labour
  - Kilometres of bicycle paths and lanes
  - Kilometres of high capacity public transport system

- Additional Indicators and Housing Density Scenario

- Population**
- Relation of housing type and household size
  - Ratio of active age cohort to employment ratio



- Economic**
- Locational variation of property price
  - Number of jobs/full-time employment

- Environmental**
- Energy consumption and carbon emission in central cities
  - Urban Heat Island (UHI) Measures

- Infrastructure**
- Residential electrical energy use per unit of dwelling per year
  - Water consumption per capita/household/dwelling units (litres/day)



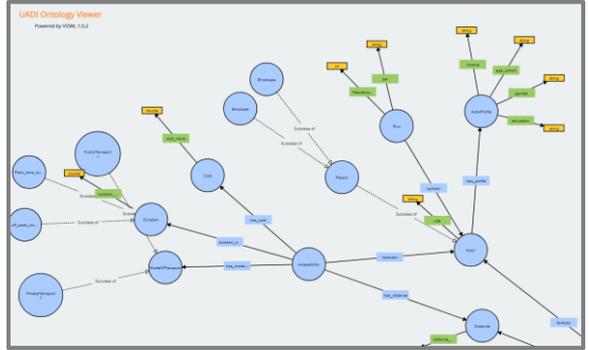
# Indicator Infrastructure - Technical Features

## Development Environment

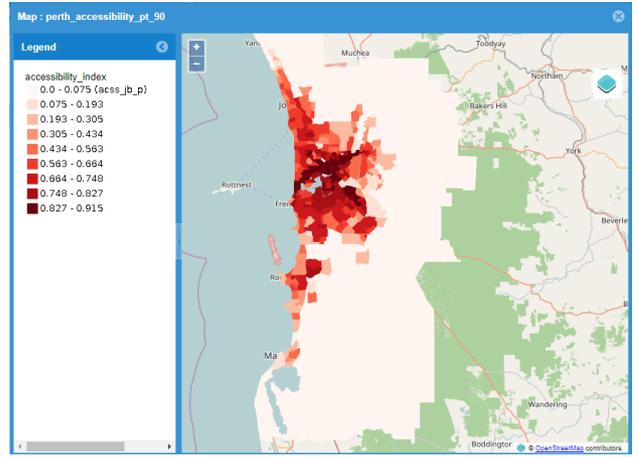
### Data Registration

ID	Datasource Name	Organisation Name	WFS URL	Action
95	UADI_ENVIRONME	UC	http://115.146.88.57:8080/geoserver/UADI_EN...	
93	Nationalmap	AURIN	https://map.aurin.org.au/geoserver/vfs/reques...	
91	UADI_UTILITY	UOW	http://115.146.88.57:8080/geoserver/UADI_EN...	
86	AURIN Geoserver	AURIN	https://geoserver.aurin.org.au/vfs/reques...e...	
80	UADI_POP	CSDILA	http://144.6.224.184:8080/geoserver/UADI_PO...	
84	UADI_POP	CSDILA	http://144.6.224.184:8080/geoserver/UADI_PO...	
81	UADI_POP	CSDILA	http://144.6.224.184:8080/geoserver/UADI_PO...	
69	Trans-new	UWA	http://144.6.224.184:8080/geoserver/UADI-es-u...	
49	UADI-DS	UOM	http://144.6.224.184:8080/geoserver/UADI/vfs...	

### Ontology Registration



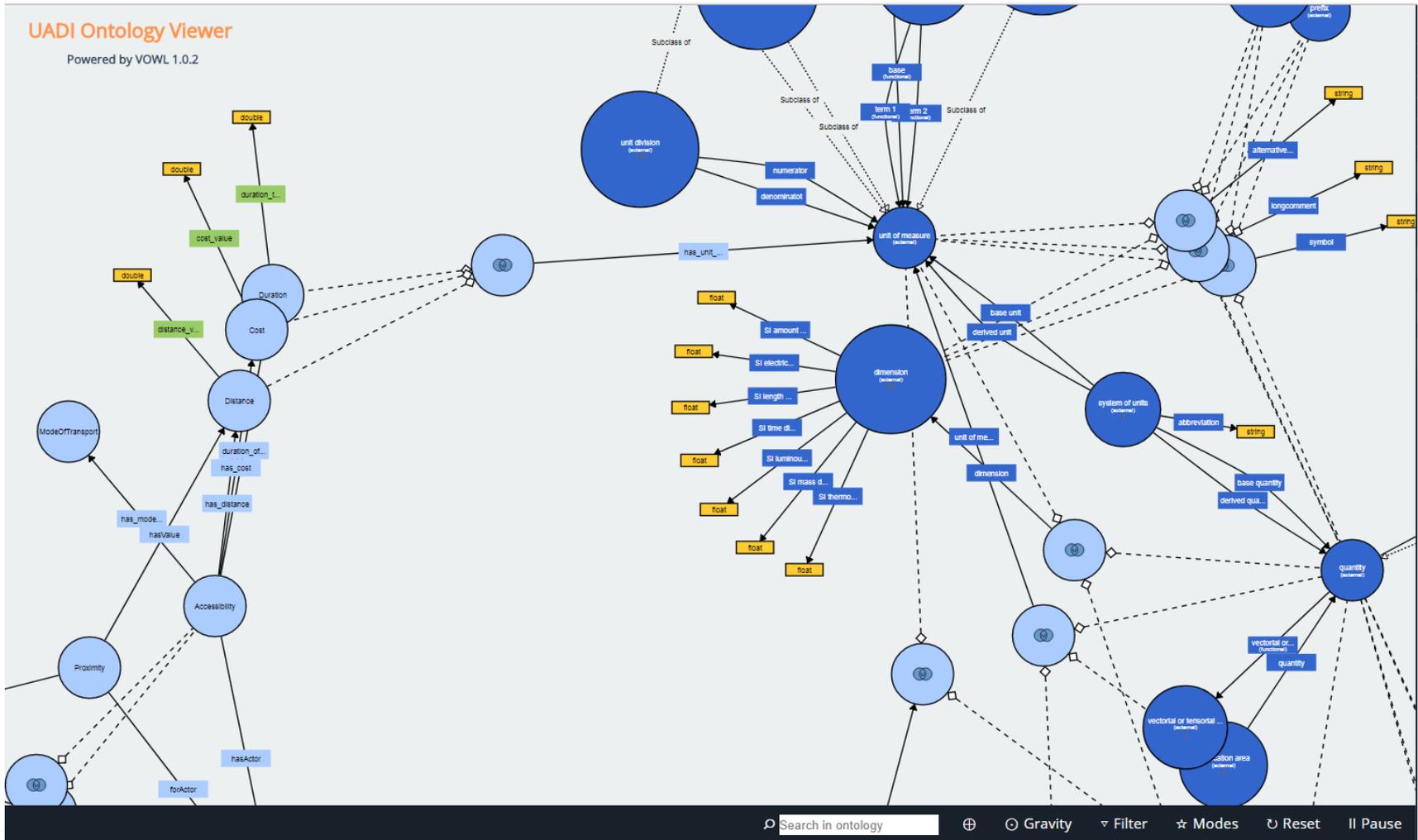
### Comparative Tool: Registration and Indicator Publishing



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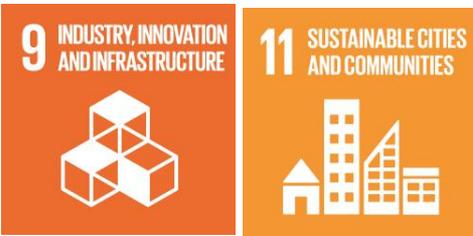
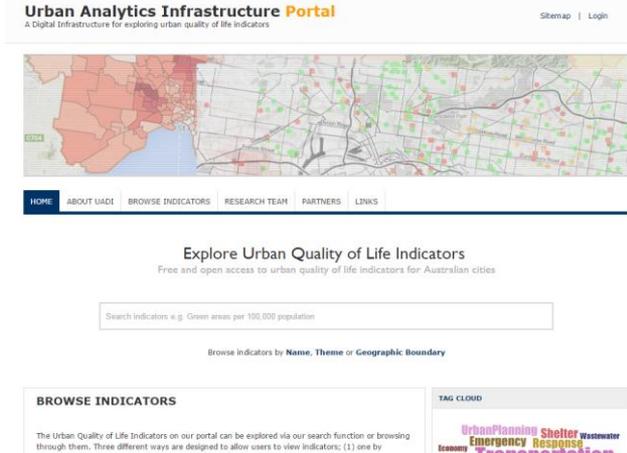
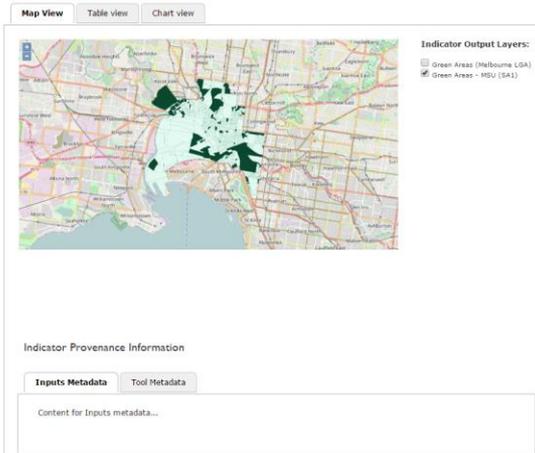
# Ontology Management



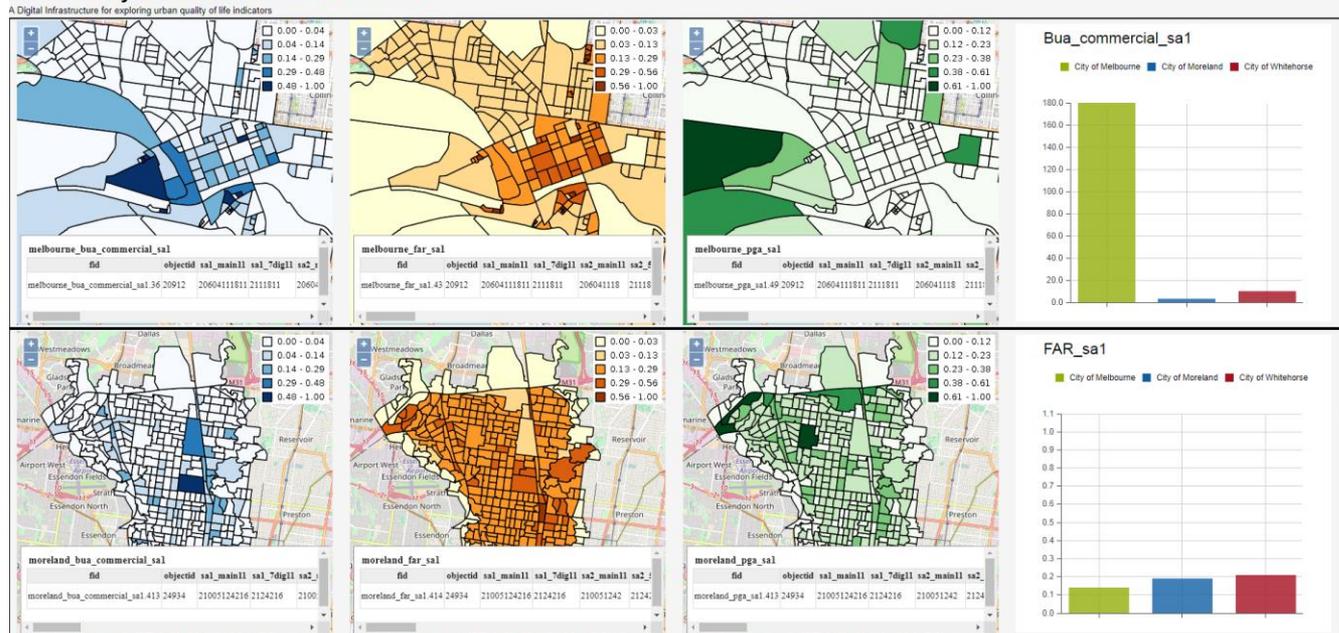
# Portal

## Urban Indicators

- Discovery
- Visualisations
- Comparisons
- Sharing



## Urban Analytics Infrastructure Dashboard



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# Indicator Visualisation and Comparison

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION

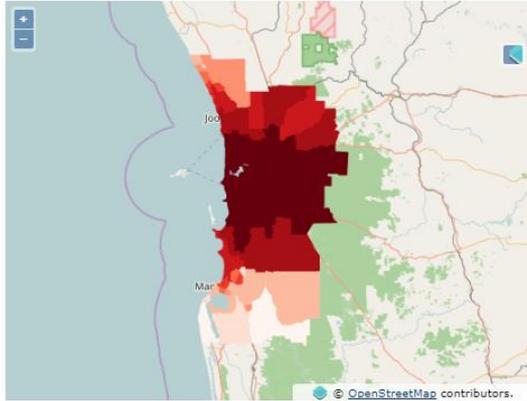


15 LIFE ON LAND



Map View Charts

Interactive Map



Download Indicator Outputs:

- **accessibility\_index** ([geoJSON](#), [ShapeFile](#), [GML 3](#))

Indicator Provenance Information

Inputs Metadata Tool Metadata

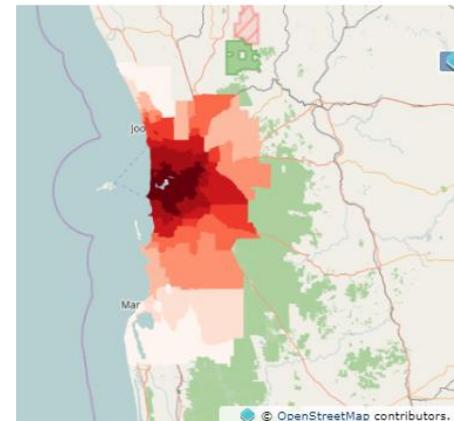
The followings are the inputs of the tool that was used to derive the indicator. You can download the metadata or - if the permission is provided - the data itself for further exploration:

Input 1

Input name: jobuid (string)

Charts

Map



Indicator Outputs:

- **y\_index** ([geoJSON](#), [ShapeFile](#), [GML 3](#))

Indicator Provenance Information

Inputs Metadata Tool Metadata

The inputs of the tool used for deriving this indicator are as follows:

**custom:execIndicatorAccessibility**

calculates the accessible jobs and labour force for each zone and according to the mode of

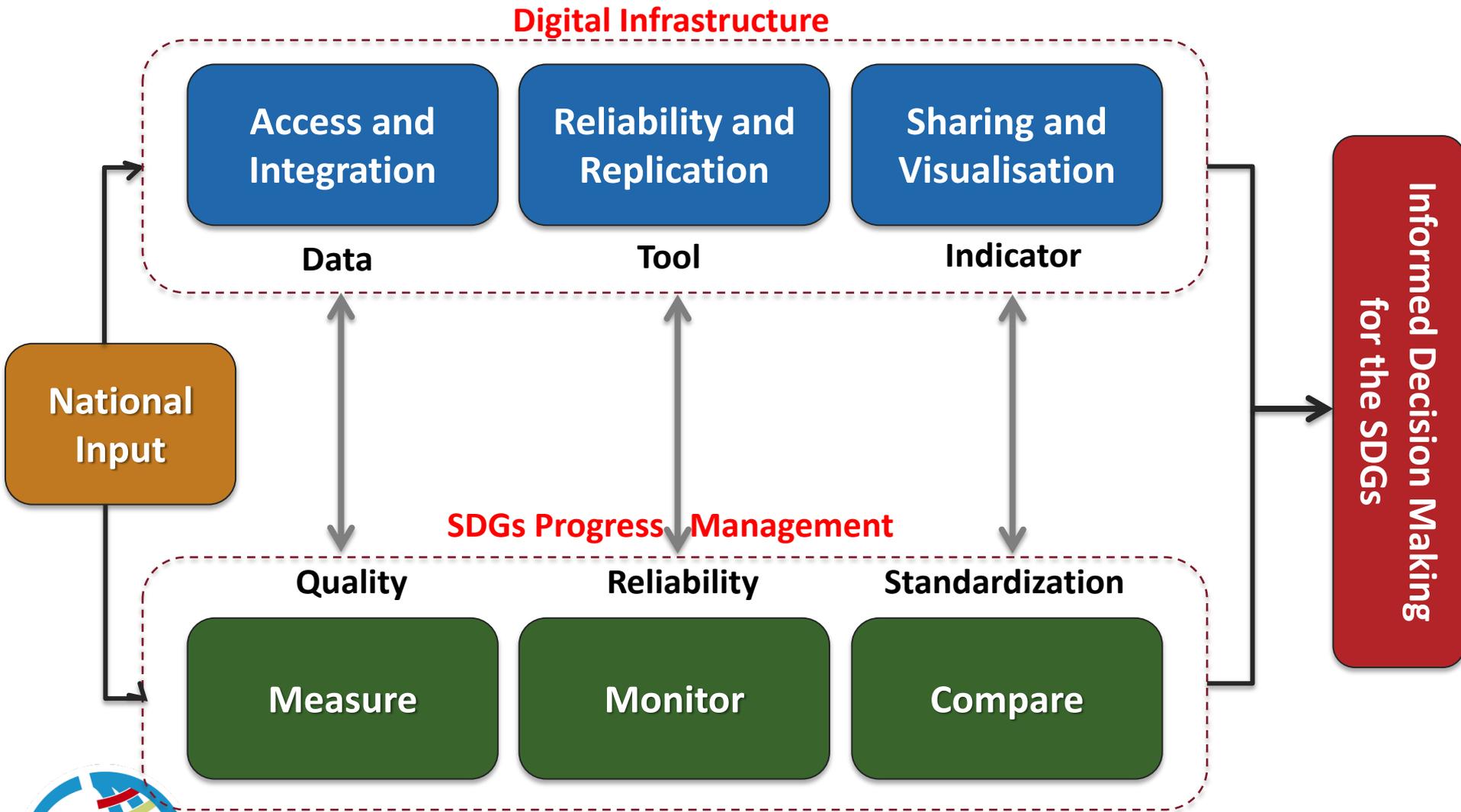
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# Potential Contribution To **SDGs**



# Takeaway Message

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The development of **National Indicators** for the **SDGs** requires an **Infrastructure** that can facilitate the **Registration** and **sharing** of indicators **Globally**.

The **UN-GGIM** can facilitate the development of an **Infrastructure** for Member States to register new indicators related to **land administration, disaster risk reduction, food security**, and the **implementation of standards** in order to measure and monitor the **inclusive** progress of the **SDGs**.



**Thank you!**

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