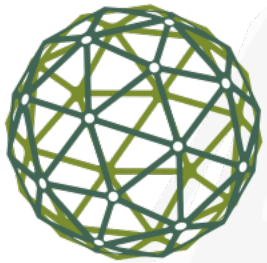


8th International Conference on BIG DATA & Data Science for Official Statistics

BILBAO 2024

Informing Climate Change and Sustainable Development Policies with Integrated Data

BILBAO. SPAIN | 10-14 JUNE 2024 | #UNBigData2024

UN-Habitat's Approach to Data science and **SDG Localization**

Robert Ndugwa

United Nations BigData

EUSKO JAURLARITZA GOBIERNO VASCO

GOBIERNO DE ESPAÑA MINISTERIO DE ASUNTOS EXTERIORES, UNIÓN EUROPEA Y COOPERACIÓN

BC3 BASQUE CENTRE FOR CLIMATE CHANGE Klima Aldaketa Ikergai

EXCELENCIA MARÍA DE MAEZTU 2023-2027

INE Instituto Nacional de Estadística

Eustat EUSKAL ESTATISTIKA ERAKUNDEA INSTITUTO VASCO DE ESTADÍSTICA

2030 Agenda and Local Action

Agenda 2030 is an intergovernmental process endorsed by Member States BUT **national governments** alone **cannot achieve the SDGs**

DECADE OF ACTION

Common Agenda

HLAB
HIGH-LEVEL ADVISORY BOARD ON EFFECTIVE MULTILATERALISM

Global action

Local action

People action

“Cities, local authorities and specifically VLRs are key actors and processes to advance sustainable development and inclusive multilateralism”

UNSG Advisory Group on Local And Regional Governments

"Localization — used here to mean the process of including and resourcing local authorities — should be explicitly part of national commitments on Agenda 2030."

HLAB Recommendation 2

HIGH-LEVEL MEETING ON THE IMPLEMENTATION OF THE NEW URBAN AGENDA
28TH APRIL 2022

G20 ITALIA 2021

G7 GERMANY

UN-Habitat and SDG Localization: Mandate

UN-Habitat Executive Board 2021

Decision HSP/EB.2021/22
It reviewed the normative and operational activities of UN-Habitat on SDG localization and recommended the Executive Director to "actively advance the localization of the Sustainable Development Goals in support of the Decade of Action for the Sustainable Development Goals through normative guidance, technical assistance, strategic partnerships and harmonized data collection"

UN-Habitat's Priorities 2022-2023

Along with Adequate Housing, Climate Change, and Post-conflict recovery, the Executive Director identified Localizing the SDGs as one of the **Agency's priorities for 2022-23.**

2nd United Nations Habitat Assembly

Localizing the SDGs and multilevel governance as one of the key topics **thematic areas** of discussion

Resolution on Localizing the SDGs raised by Brazil

UN-Habitat's work on SDG Localization and LRGs

Milestones of the work on **SDG localization**

Dialogues on localizing the Post 2015 Agenda

Research: Roadmap for Localizing the SDGs
Capacity Building: SDG Localization Training Modules
Workshops and advocacy (LRGs constituency)

Intergovernmental Processes
Regional Forums
HLPF
UN Habitat Assembly

Comprehensive Approach
VLRs
SDG Cities
Global Urban Monitoring Framework
Multilevel Governance

Global Portfolio

Milestones of the work on **Local and Regional Governments**

World Assembly of Local and Regional Governments
1996

UN Advisory Committee on Local Authorities
1999

Local and Regional Governments Forum
2018

UN Task Force on the Future of Cities
2021

UNSG Advisory Group on Local and Regional Governments
2022-23

Local 2030 Coalition

Our comprehensive approach

The Global Urban Monitoring Framework	VOLUNTARY LOCAL REVIEWS	SDG Cities Global Initiative	MLG MULTILEVEL GOVERNANCE	LOCAL 2030 LOCALIZING THE SDGS

Our support

Technical cooperation	**Strategic Partnership**	**Knowledge development and research**	**Learning and capacity building**	**Advocacy and visibility**

Where do we work?

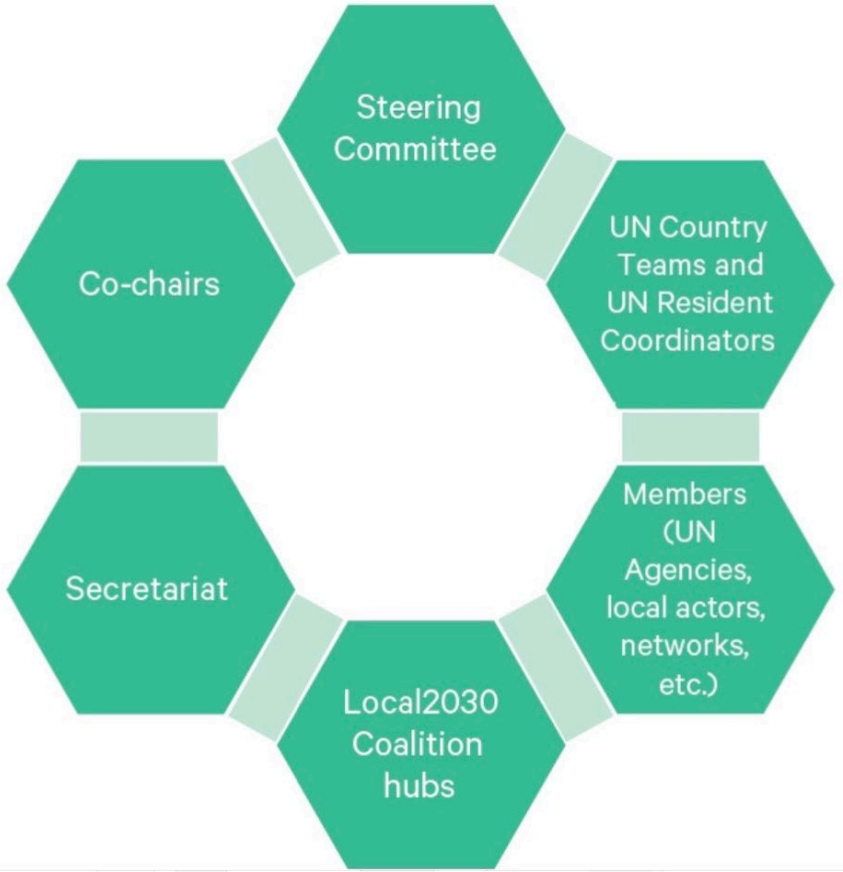
Local2030 Coalition

The Local2030 Coalition is the **UN System-wide platform and network for supporting and accelerating the localization of the 2030 Agenda** for Sustainable Development. The goal is to foster collaboration, incubate innovation, share solutions, and implement strategies to support local stakeholders in achieving the 2030 Agenda everywhere.

LOCAL 2030
LOCALIZING THE SDGS

Priorities:

- **ADVOCACY:** Increase awareness and enhance bottom-up and inclusive processes to engage local stakeholders on the 2030 Agenda to address interlocking crises and development challenges.
- **ACTION:** Build and nurture a support platform to advance an effective multi-level governance system for SDG localization as well as increase and channel financing to multi-stakeholder initiatives.
- **MONITORING:** Increase monitoring and reporting by subnational and local actors and opportunities for them to exchange knowledge and perspectives and contribute to national frameworks.



The role of data science in SDG localization

Data-Driven Insights

Data science provides valuable insights to help cities and communities identify needs, allocate resources, and measure progress towards the SDGs.

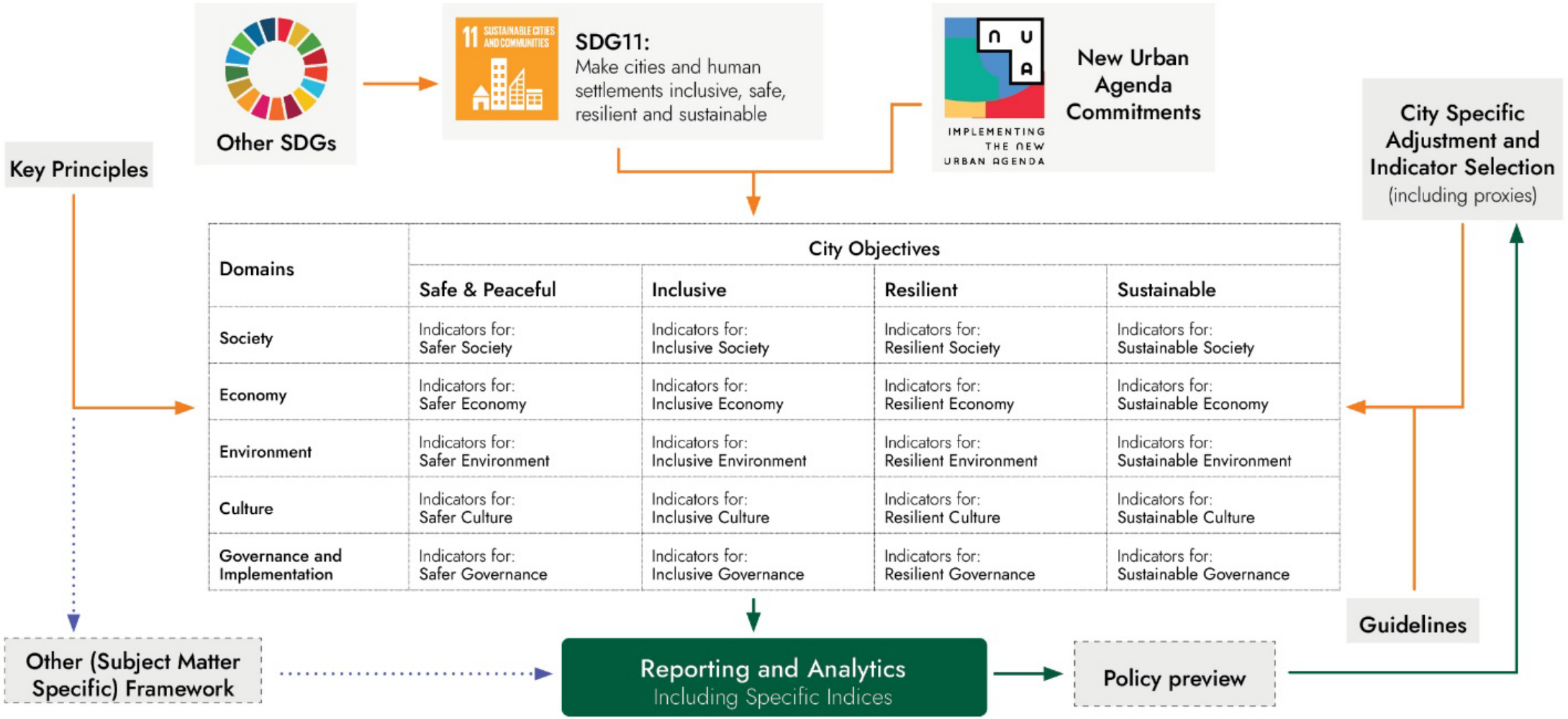
Predictive Analytics

Predictive models can anticipate challenges and inform evidence-based decision-making to achieve the SDGs more effectively.

Citizen Engagement

Data science empowers citizen participation by collecting and incorporating local knowledge into SDG implementation.

The Global Urban Monitoring Framework (UMF) is a good platform for tracking and translating urban data to policies



Domains	City Objectives			
	Safe & Peaceful	Inclusive	Resilient	Sustainable
Society	Indicators for: Safer Society	Indicators for: Inclusive Society	Indicators for: Resilient Society	Indicators for: Sustainable Society
Economy	Indicators for: Safer Economy	Indicators for: Inclusive Economy	Indicators for: Resilient Economy	Indicators for: Sustainable Economy
Environment	Indicators for: Safer Environment	Indicators for: Inclusive Environment	Indicators for: Resilient Environment	Indicators for: Sustainable Environment
Culture	Indicators for: Safer Culture	Indicators for: Inclusive Culture	Indicators for: Resilient Culture	Indicators for: Sustainable Culture
Governance and Implementation	Indicators for: Safer Governance	Indicators for: Inclusive Governance	Indicators for: Resilient Governance	Indicators for: Sustainable Governance

Systematizing SDG monitoring in Cities

Data Track

Global Urban Monitoring Framework

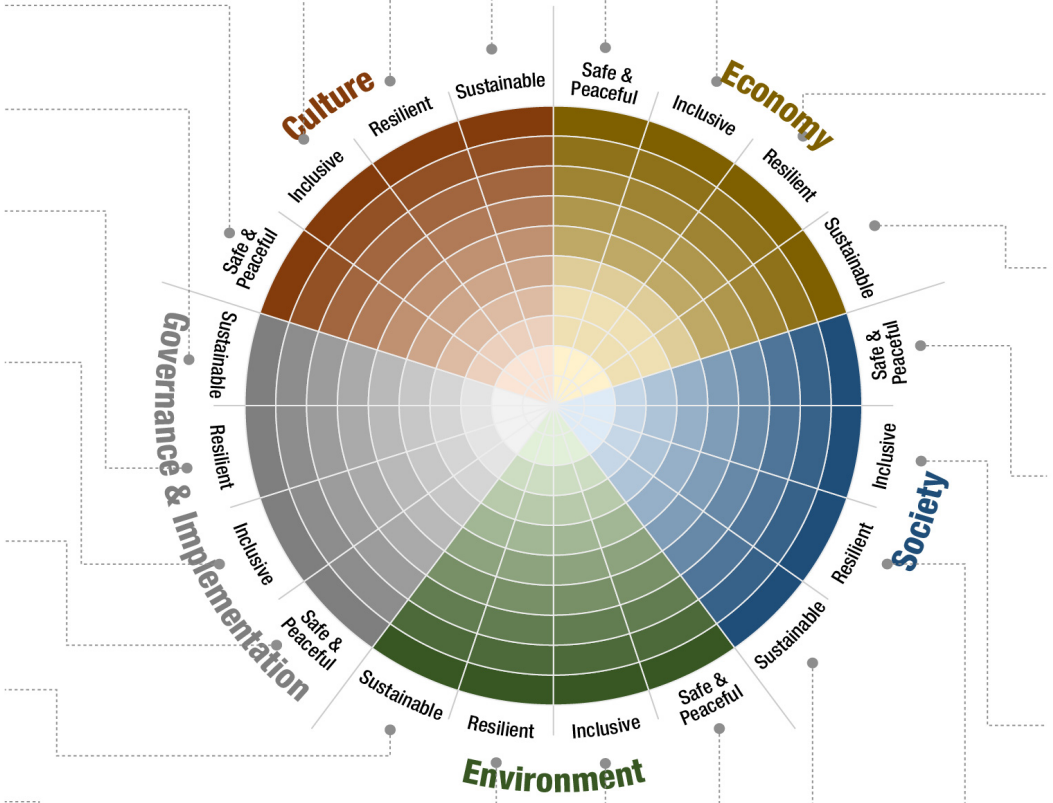
To ensure a simple but effective approach to monitoring the performance of cities against the Sustainable Development Goals, the New Urban Agenda and the Paris Climate Agreement, the **Global Urban Monitoring Framework** identifies 72 indicators that are most relevant to cities and clusters them within 20 attributes. It is designed to be efficient, effective and harmonized.

DOMAINS	CITY OBJECTIVES			
	Safe & Peaceful	**Inclusive**	**Resilient**	**Sustainable**
SOCIETY	Indicators for: Safer Society	Indicators for: Inclusive Society	Indicators for: Resilient Society	Indicators for: Sustainable Society
ECONOMY	Indicators for: Safer Economy	Indicators for: Inclusive Economy	Indicators for: Resilient Economy	Indicators for: Sustainable Economy
ENVIRONMENT	Indicators for: Safer Environment	Indicators for: Inclusive Environment	Indicators for: Resilient Environment	Indicators for: Sustainable Environment
CULTURE	Indicators for: Safer Culture	Indicators for: Inclusive Culture	Indicators for: Resilient Culture	Indicators for: Sustainable Culture
GOVERNANCE AND IMPLEMENTATION	Indicators for: Safer Governance	Indicators for: Inclusive Governance	Indicators for: Resilient Governance	Indicators for: Sustainable Governance

The **Global Urban Monitoring Framework** is constructed on the basis of 4 City Objectives: **Safe & Peaceful, Inclusive, Resilient and Sustainable,** as captured in SDG 11 and reflected across several other SDGs, and 5 domains of sustainable development: **Society, Economy, Environment, Culture, Governance and Implementation.**

These axes intersect to create 20 attributes, to which indicators are attached from the SDGs, NUA and other global agendas.

The UMF Wheel Diagram



4.4.1 Sustainable management of heritage
4.4.2 Climate adaptation and resilience
4.4.3 Open space for culture

4.3.1 Cultural employment
4.3.2 Expenditure on heritage

4.2.1 Access to culture
4.2.2 Cultural participation

4.1.1. Culture for social cohesion
4.1.2. Cultural Knowledge

5.4.1. Registered births
5.4.2 National urban policies/regional development plans
5.4.3 Governance of culture

5.3.1 Own Revenue Collection
5.3.2 Financial autonomy
5.3.3. Local disaster risk reduction strategies

5.2.1 Participation in Urban planning and Management
5.2.2. Utilization of E-Governance and Digital Governance Tools
5.2.3 Proportion of seats held by women in sub-national/ local governments
5.2.4 Legal frameworks for equality
5.2.5. Efficiency in urban governance

5.1.1 Victims of Intentional Homicide
5.1.2. Victims of Physical and Sexual Violence
5.1.3 Intimate partner violence
5.1.4 Reporting of Violence
5.1.5 Bribery

3.4.1. Total greenhouse gas emissions per year
3.4.2. Efficient land use
3.4.3. Budget on Climate Change Mitigation and Adaption

3.3.1. Renewable energy share
3.3.2. Green area per capita
3.3.3. Change in tree cover
3.3.4. Protected Natural Areas

3.2.1. Access to Open Public Spaces
3.2.2. Education for Sustainable Development

3.1.1. Wastewater safely treated
3.1.2. Solid Waste Collection and Disposal
3.1.3. Air quality
3.1.4. Hazardous waste

2.1.1 Children engaged in child labor
2.1.2 Time spent on unpaid domestic and care work

2.2.1 Unemployment Rate
2.2.2 Youth not in education, employment or training (NEET)
2.2.3 Use of Public transport
2.2.4 Internet use

2.3.1. City Product (GDP) per Capita (PPP)
2.3.2 Youth and adults in formal and non-formal education and training
2.3.3 Adult population with a qualification from a recognized tertiary education institution
2.3.4 Fixed Internet broadband subscriptions
2.3.5 Small-scale industries in total industry value added
2.3.6 Days to start a business
2.3.7 Patent application

2.4.1 Sub-national debt
2.4.2 Mean household income

1.1.1 Under-5 mortality rate
1.1.2 Safely managed drinking water services
1.1.3 Safely managed sanitation services
1.1.4 Safely managed hand-washing facility with soap and water
1.1.5 Proportion of births in all health facilities
1.1.6 Neighborhood safety
1.1.7 Adolescent birth rate
1.1.8 Traffic fatalities

1.2.1 Basic services
1.2.2 Access to public transport
1.2.3 Education completion rate
1.2.4 Secure tenure rights to land
1.2.5a Prevalence of malnutrition (Overweight) in children under 5
1.2.5b Prevalence of malnutrition (Wasting) in children under 5
1.2.6 Proportion of vaccinated children
1.2.7 Welfare of migrants
1.2.8 Multilingual education

1.3.1 Life expectancy at birth
1.3.2 Mortality rate (diseases)
1.3.3 Suicide mortality rate
1.3.4 Population affected by hazardous events
1.3.5 Mortgage debt relative to GDP
1.3.6. Food Insecurity

1.4.1 Slum population
1.4.2 Gini coefficient

77 Indicators in 4 City Objectives and 5 Domains

Challenges in SDG data collection and monitoring

1

Data Gaps

Many communities lack comprehensive data on key SDG indicators, hindering effective monitoring and progress tracking.

2

Data Quality

Ensuring the reliability, accuracy, and timeliness of SDG data is crucial but often challenging.

3

Resource Constraints

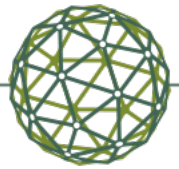
Limited financial and technical resources can impede data collection and analysis efforts in many parts of the world.

4

Coordination Challenges

Integrating data from multiple sources and aligning stakeholders can be complex for comprehensive SDG monitoring.

Leveraging geospatial data and analytics for SDG implementation



Spatial Analysis

Geospatial data and GIS tools can identify spatial patterns, target interventions, and track progress at the local level.

Remote Sensing

Satellite imagery and remote sensing provide valuable data for monitoring urban growth, environmental changes, and infrastructure development.

Community Mapping

Engaging citizens to map their local communities can enhance data collection and support grassroots SDG initiatives.

Spatial Analysis

Combining geospatial data with other datasets enables advanced analytics to inform strategic decision-making for the SDGs.

Capacity building and partnerships for data-driven SDG localization

Technical Training

Providing training and tools to build local data collection, analysis, and visualization capabilities.

Data Sharing Platforms

Developing collaborative platforms to facilitate the exchange of SDG-related data and best practices.

Multi-Stakeholder Collaboration

Fostering partnerships between governments, academia, civil society, and the private sector for data-driven SDG implementation.

Advocacy and Awareness

Promoting the importance of data-driven decision-making and citizen engagement for sustainable development.

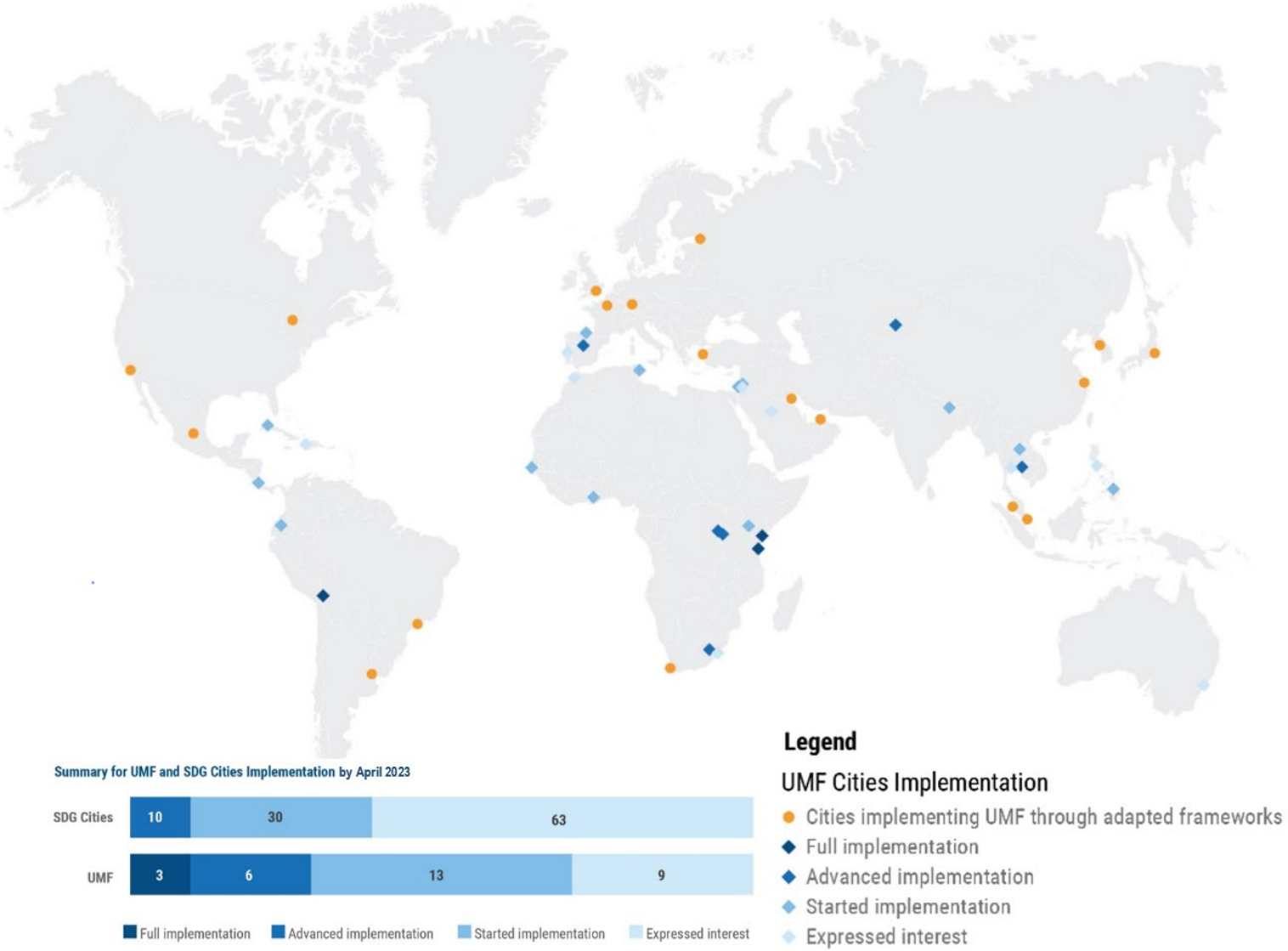
Case studies: Applying data science to SDG challenges

City	SDG Challenge	Data Science Approach	Impact
Nairobi, Kenya	Access to clean water	Geospatial analysis, predictive modeling	Improved targeting of water infrastructure investments
Medellin, Colombia	Sustainable mobility	Citizen-generated data, spatial analytics	Optimized public transportation routes and schedules
Durban, South Africa	Climate resilience	Remote sensing, machine learning	Enhanced early warning systems and disaster response

Many cities are currently implementing UMF directly with several expressing interest

The interest in the framework has been increasing in the past few months with over 70 cities registering their interest to implement the UMF.

Various UMF adaptations are also ongoing to monitor thematic areas of urbanization.



Voluntary Local Reviews

217 VLRS HAVE BEEN PUBLISHED SINCE 2016

175 LOCAL AND REGIONAL GOVERNMENTS

44 COUNTRIES HAVE PRODUCED AT LEAST ONE VLR

Africa: 11 VLRs (5%)
Asia: 42 VLRs (19%)
Europe: 78 VLRs (36%)
Latin America & the Caribbean: 72 VLRs (33%)
North America: 12 VLRs (6%)
Oceania: 2 VLRs from (1%)

Benefits of an Action-oriented VLR

1. Strategic planning
2. Participation and inclusion
3. Multilevel governance
4. Data environments
5. International positioning

Methodology for an Action-oriented VLR

PHASE 01 — INCEPTION

PHASE 02 — SITUATION ANALYSIS

PHASE 03 — REVIEW AND STRATEGY

PHASE 04 — FINALIZATION

PHASE 05 — BEYOND THE VLR

DATA TRACK

STAKEHOLDER ENGAGEMENT TRACK

STRATEGIC ACTION TRACK

MULTILEVEL GOVERNANCE TRACK

CAPACITY BUILDING TRACK

ADVOCACY AND VISIBILITY TRACK

SDG Cities Theory of Change

Data

Strategic Planning

Updated local plans and regulations

Project Development, Financing and Implementation

SDG IMPACT

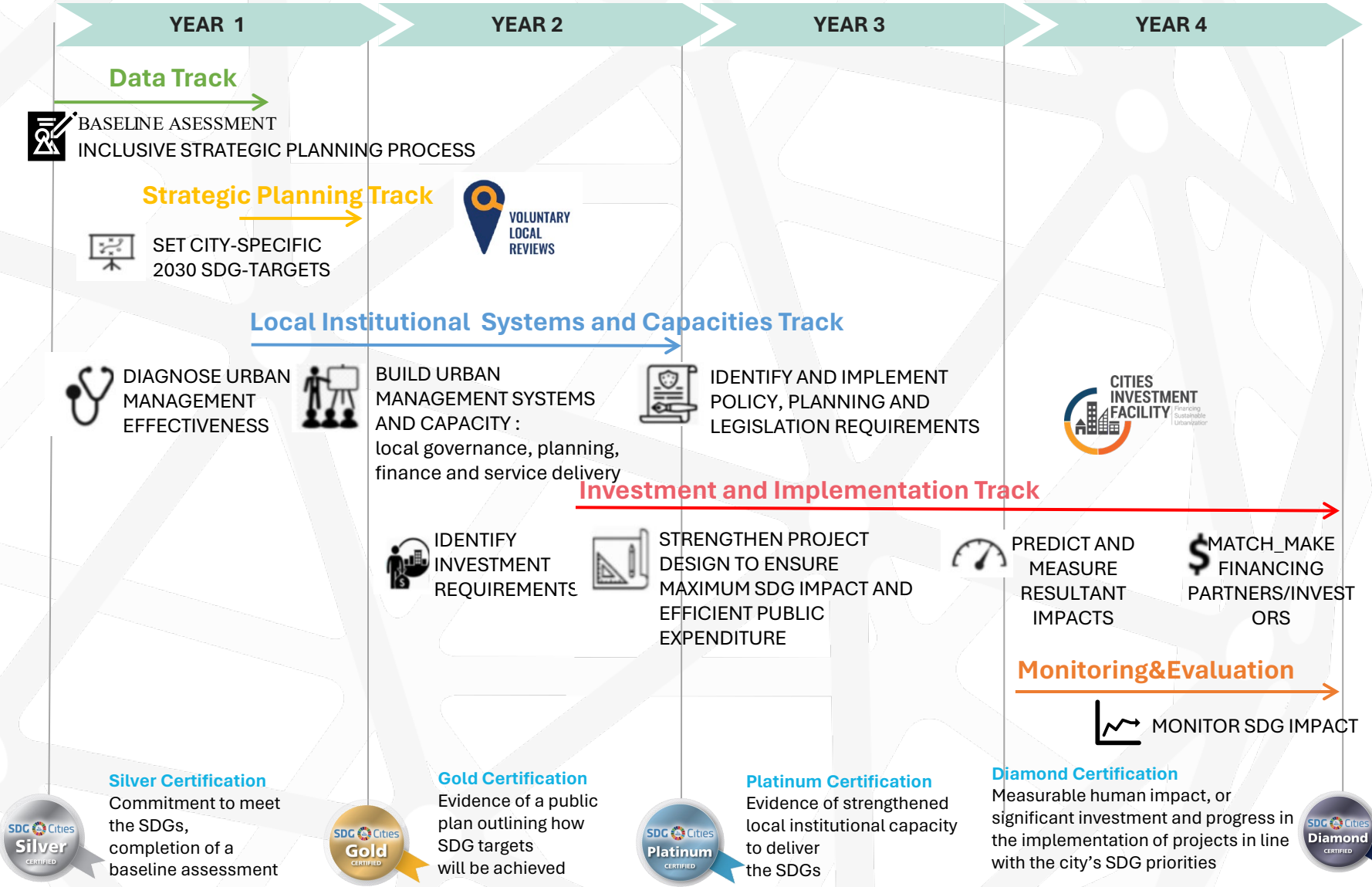
SDG Cities Global Initiative

Strengthened institutional capacity

- inclusive governance
- planning
- municipal finance
- service delivery
  - - solid waste management
  - - Water and sanitation
  - - mobility

SDG Cities Value Chain

SDG Cities is a **cyclical process** and is adaptable to existing planning and election cycles of city authorities. The initiative aims at reaching **1000 cities and 1 billion lives**



Multilevel Governance for SDG Localization

UN-HABITAT

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Phase 1

arco RESEARCH THAT MAKES THE DIFFERENCE

UCLG United Cities and Local Governments

LSE Cities

THE NELSON MANDELA SCHOOL of Public Governance

UNIVERSITY OF CAPE TOWN

Phase 2

Tool Development
GIZ/BMZ – UN-Habitat Workshop (June 22)

Advocacy
HLPF

Piloting

Capacity Building

Case-studies and pilots

Argentina

Ghana

Jordan

Italy

Philippines

For more information on UN-Habitat's comprehensive SDG Localization approach visit

UN-Habitat
SDG Localization Platform

www.sdglocalization.org

DATA AND ANALYTICS
KNOWLEDGE AND INNOVATION BRANCH

UN-HABITAT

Thank You

Robert Ndugwa
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