« SMART CITIES », SDG AND NEW URBAN AGENDA : PARTNERSHIPS FOR FUNDING AND CAPACITY DEVELOPMENT
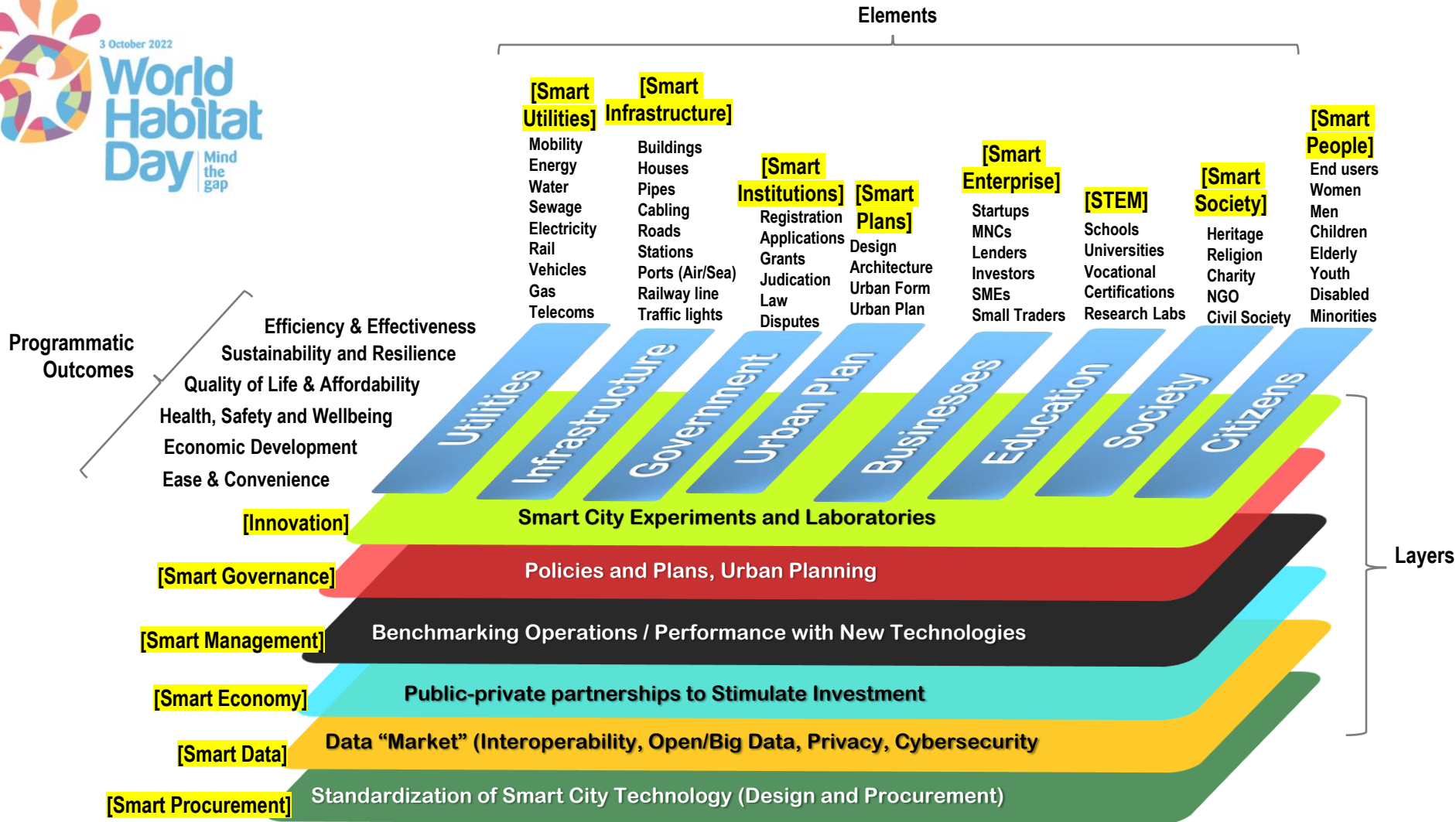
PRESENTED BY

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UN-Habitat Proposed Smart Cities Framework

Smart cities project methodology : UN-HABITAT

SITE SURVEY AND CONSULTATION

- Interviews with key officials responsible for specific SDS2030 Performance Indicators
- Interview PPP and private sector smart city initiatives, incubators, startups and technopreneurs, researchers and civil society initiatives
- Validation interviews with local citizens/residents
- Identify key sectors to measure (smart energy, smart mobility, etc)

DEVELOP FRAMEWORK

- Workshop with key officials responsible at the city-level to deliver on SDS 2030 targets to select appropriate smart city performance indicators relevant to their work program
- Research and ranking of benchmark values of each selected indicator
- Conduct research on existing national urban policies that target each smart city sector

IMPLEMENTATION

- Identify key benchmarks useful at the city level with city leaders
- Identify appropriate data collection metholodgy and ICT tools if needed
- Map, survey and collect data
- Exploratory analysis and initial results
- Focus group to examine initial results
- Conduct gap analysis with the national urban policies and what is not being covered from smart cities perspective

ANALYSIS

- Conduct gap analysis with the national urban policies and what is not being covered from smart cities perspective
- Conduct root cause analysis for reasons behind the gaps and analyse with existing policy
- Make recommendations to close the gap identified by the benchmarked indicators (e.g. ack of startups at the maturity phase due to lack of research acelerators). *Govt may need to seed acelerators through PPP*

DELIVERY

- Develop customized master plan for localizing SDS2030 through smart city approach at each city level according to each city's unique benchmarked conditions

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Sustainable Development =

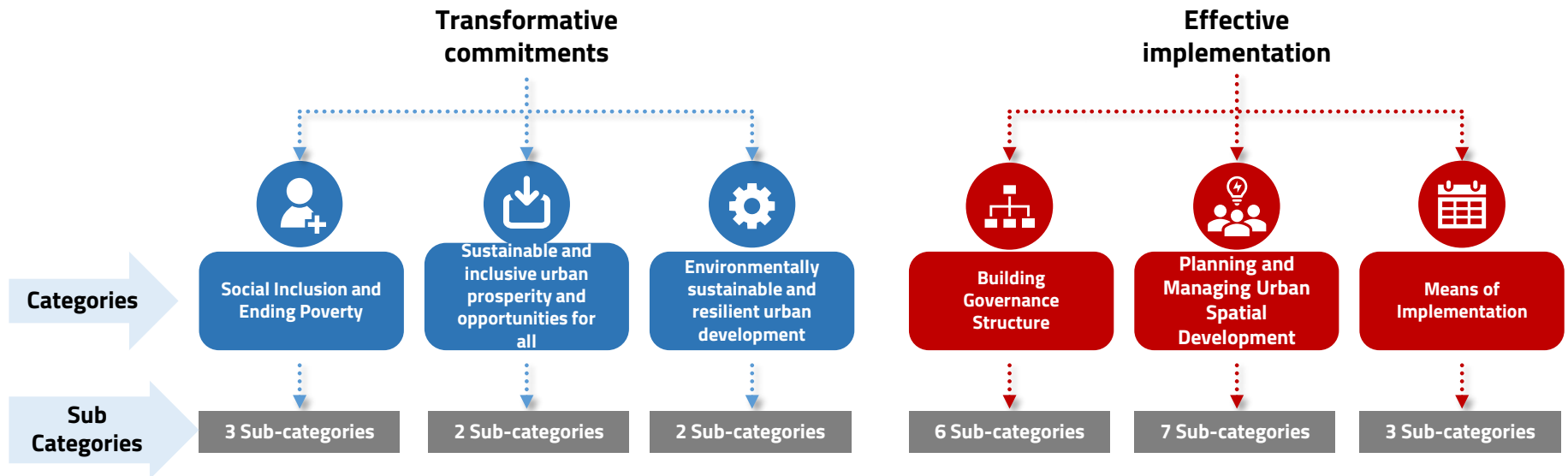Economic Growth + Social Development + Environmental Protection

SDGs + NUA

Aligning New Urban Agenda (NUA) with the urban-related SDGs, in particular SDG 11 on Sustainable Cities and Communities is essential

The New Urban Agenda monitoring framework

Transformative commitments

Effective implementation

Categories

| Social Inclusion and Ending Poverty | Sustainable and inclusive urban prosperity and opportunities for all | Environmentally sustainable and resilient urban development | Building Governance Structure | Planning and Managing Urban Spatial Development | Means of Implementation |

Sub Categories

| 3 Sub-categories | 2 Sub-categories | 2 Sub-categories | 6 Sub-categories | 7 Sub-categories | 3 Sub-categories |

a) NUA draws on many global frameworks such as SDGs

b) Total of 77 indicators in the current draft—combines quantitative and qualitative measures

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Social Inclusion and Ending Poverty

1.Social Inclusion and Ending Poverty

Eradicate poverty

1: Proportion of population below the international poverty line, by sex, age at national urban level

Address inequality in urban areas

10: Unemployment rate by sex, age, persons with disabilities and by city

33: Gini coefficient at national/ city/ urban levels;

Enhance social inclusion

4 Women's recognised legal right to property inheritance and ownership

34 Presence of national legislation forbidding discrimination in housing, access to public facilities and social services on the basis of race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status

Ensure access to public spaces

19: Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities.

35: Percentage of road length that has dedicated bike lanes (excluding motorways).

36: Percentage of road length that has dedicated sidewalks (excluding motorways).

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Social Inclusion and Ending Poverty

2.Access to Adequate Housing

Ensure access to adequate and affordable housing

31: Median amount of money spent on housing and transportation per household as a percentage of the median annual household income of tenants.

32: Ratio of the median free-market price of a dwelling unit and the median annual household income

38: Percentage of people living in affordable housing

Ensure access to sustainable housing finance options

37: Mortgage debt relative to GDP

Support security of tenure

2: Proportion of total adult population with secure tenure rights to land with (a) legally recognized documentation; and (b) who perceive their rights to land as secure, by sex and type of tenure

Establish slum upgrading programmes

39: Proportion of cities with slum upgrading programmes

40: Number of cities having annual budget allocations addressing any of the 5 slum deprivations and inclusive public spaces in known slum areas

Integrate housing into urban development plans

41 Percentage of cities that have integrated housing policies and regulations in their local development plans

42 Total investment in housing (in both formal and informal sectors in the urban area), as a percentage of gross domestic product.

43 Percentage of government budget dedicated to housing subsidies

Social Inclusion and Ending Poverty

3.Access to Basic Services

Access to safe drinking water, sanitation

5: Proportion of population using safely managed drinking water services;

6: Proportion of population using safely managed sanitation services;

18: Proportion of municipal solid waste collected and managed in controlled facilities out of total Municipal Solid Waste generated by cities.

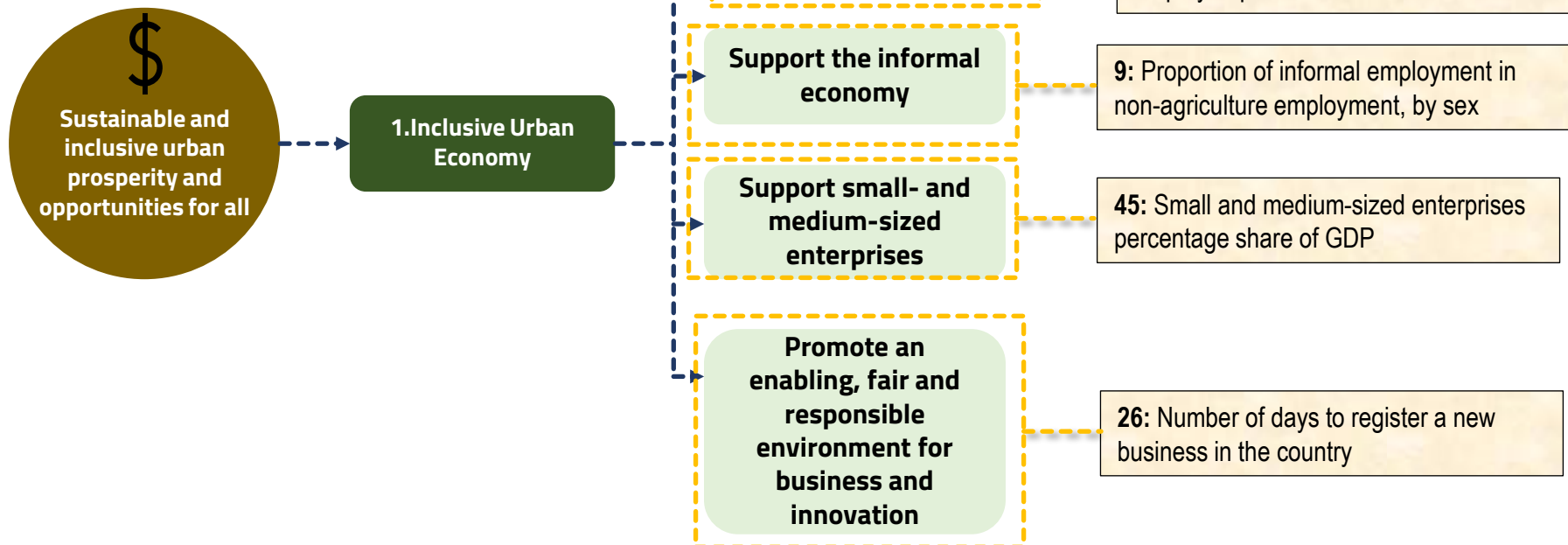**Access to safe and efficient public transport system**

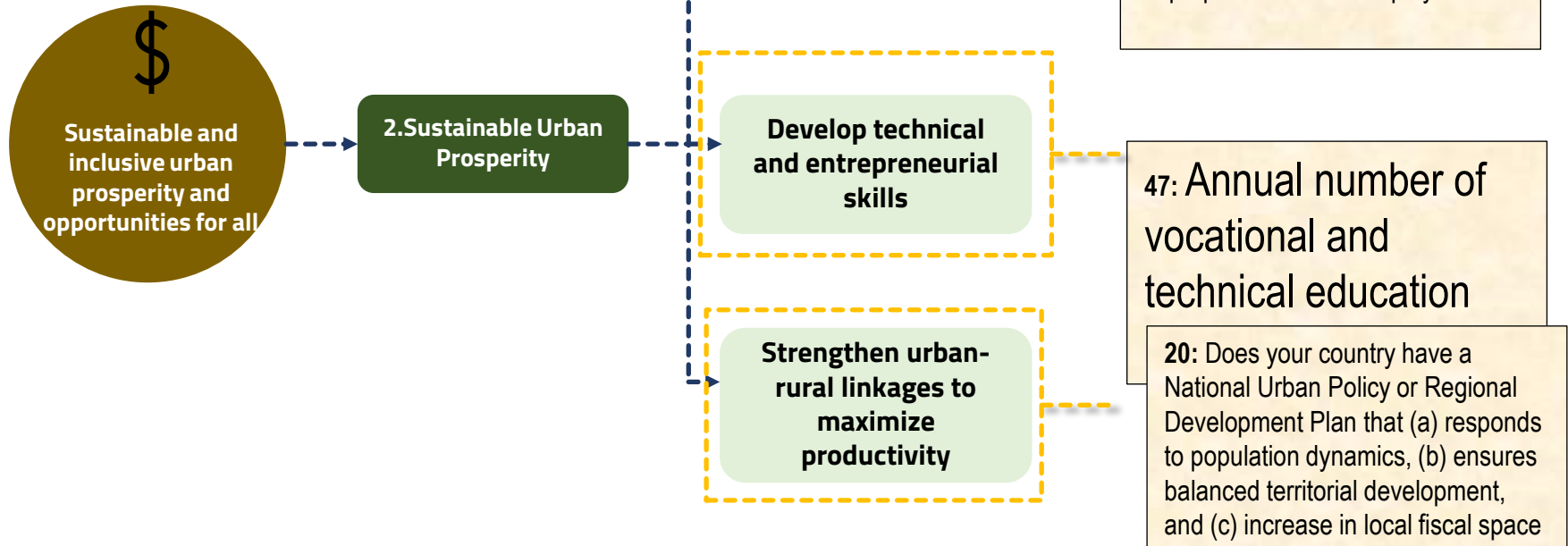**44:** Percentage of commuters using public transport

Access to modern renewable energy

7: Renewable energy share in the total final energy consumption

Access to Information Communication technology (ICT)

25: Fixed Internet broadband subscriptions per 100 inhabitants, by speed

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Sustainable and inclusive urban prosperity and opportunities for all

1.Inclusive Urban Economy

Promote productive employment for all

11: Proportion of youth (aged 15-24 years) not in education, employment or training

8: Annual growth rate of real GDP per employed person

Support the informal economy

9: Proportion of informal employment in non-agriculture employment, by sex

Support small- and medium-sized enterprises

45: Small and medium-sized enterprises percentage share of GDP

Promote an enabling, fair and responsible environment for business and innovation

26: Number of days to register a new business in the country

10

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Sustainable and inclusive urban prosperity and opportunities for all $

2.Sustainable Urban Prosperity

Support the diversification of the urban economy

Develop technical and entrepreneurial skills

Strengthen urban-rural linkages to maximize productivity

46: Employment in cultural and creative industries of as proportion of total employment

12: Manufacturing employment as proportion of total employment

47: Annual number of vocational and technical education

20: Does your country have a National Urban Policy or Regional Development Plan that (a) responds to population dynamics, (b) ensures balanced territorial development, and (c) increase in local fiscal space
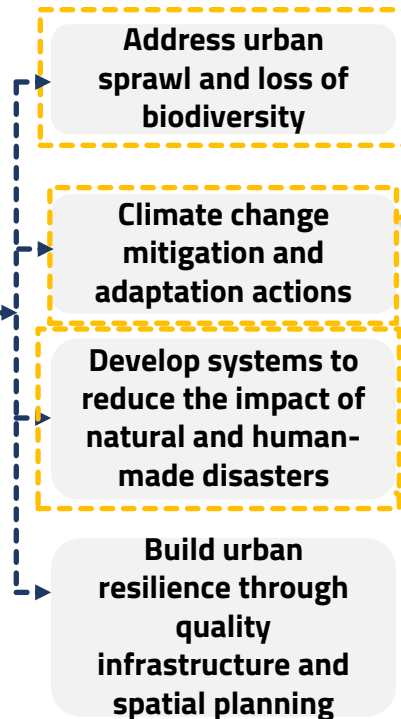
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Environmentally sustainable and resilient urban development

1.Resilience, Mitigation, and Adaption of Cities and Human Settlements

Address urban sprawl and loss of biodiversity

Climate change mitigation and adaptation actions

Develop systems to reduce the impact of natural and human-made disasters

Build urban resilience through quality infrastructure and spatial planning

15: Ratio of land consumption rate to population growth rate.

48: Percentage of land under protected natural areas.

49: Percentage of local governments that adopt and implement local disaster risk reduction strategies in line with national strategies.
50: Percentage subnational/local government with budgets dedicated to climate change mitigation and adaptation actions.
30: Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)
3: Mortality rate attributed to household and ambient air pollution

52: Does the country have a multi-hazard monitoring and forecasting system?

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54: Existence of an enforced coastal and/or land management plan.

Environmentally sustainable and resilient urban development

2.Sustainable Management and use of natural resources

Implement environmentally sound management of water resources and coastal areas

Promote resource conservation and waste reduction, reuse, and recycling

Strengthen the sustainable management of natural resources in urban areas

Adopt a smart-city approach that leverages digitization, clean energy and technologies

23: Recycling rate, tons of material recycled.

21: Material footprint, material footprint per capita, and material footprint per GDP.

22: Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP.

27: Green Area per capita

55: Percentage reduction in annual final energy consumption in homes using smart monitoring systems.

56: Share of street junction with traffic lights connected to traffic management systems .

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Building Governance Structure: Establishing a supportive Framework

Decentralization to enable subnational and local governments undertake their assigned responsibilities

Linking urban policies to finance mechanisms and budgets

Legal and policy frameworks to enhance the ability of governments to implement urban policies

Strengthen the capacity of local and subnational governments to implement local and metropolitan multilevel governance

Promote participatory, age- and gender-responsive approaches to urban policy and planning

Promote women's full participation in all fields and all levels of decision-making

57: Do local authorities exercise their authority and fulfil their responsibilities in accordance with such procedures and in such cases as provided for by the constitution or by law?

58: Percentage of the total budget that the local / sub-national government have discretion over to decide on priorities (financial autonomy)

59: Percentage of the local / sub-national government's financial resources generated from endogenous (internal) sources of revenue

59: Percentage of the local / sub-national government's financial resources generated from endogenous (internal) sources of revenue

60: Quality of law

61: Published performance delivery standards at the sub-national level

16: Proportion of cities with a direct participation structure of civil society engagement in urban planning and management, which are regular and democratic.

24: Proportions of positions (by sex, age, persons with disabilities and population groups) in public institutions (national and local legislatures, public service, and judiciary) compared to national distributions

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Planning and Managing Urban Spatial Development

- Integrated and balanced territorial development policies
- Integrate housing into urban development plans
- Inclusion of culture as a priority component of urban planning
- Planned urban extensions and infill, urban renewal and regeneration of urban areas
- Improved capacity for urban planning and design, and training for urban planners at all levels of government
- Strengthening the role of small and intermediate cities and towns
- Promote sustainable multimodal public transport systems including non-motorized options

20: Does the country have a National Urban Policy or Regional Development Plan that (a) responds to population dynamics, (b) ensures balanced territorial development, and (c) increase in local fiscal space.

62: Number of countries, regional governments, and cities in which plans and designs are publicly accessible to residents (on-line) and can be consulted at all times

13: Proportion of urban population living in slums, informal settlements or inadequate housing.

17: Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage, level of government, type of expenditure and type of private funding

28: Population Density

29: Land-use mix

63: Number and percent of new population "accommodated" in a plan or city extension

64: Number of urban planners per 100,000 persons

City challenges vs citizen interests
Cities face quite similar challenges, most of them related to sustainability

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Waste & Water Management
i.e. Sao Paulo, New Delhi, Panama

Tourism & cultural engagement
i.e. Paris, Buenos Aires, Florence

Traffic & mobility Management)
i.e. Beijing, Barcelona, Cairo

Cities interests

Business & commerce
i.e. Berlin, New York, Tokyo.

Electricity Supply
i.e. Caracas, Germany

Safety
i.e México City, Rio de Janeiro
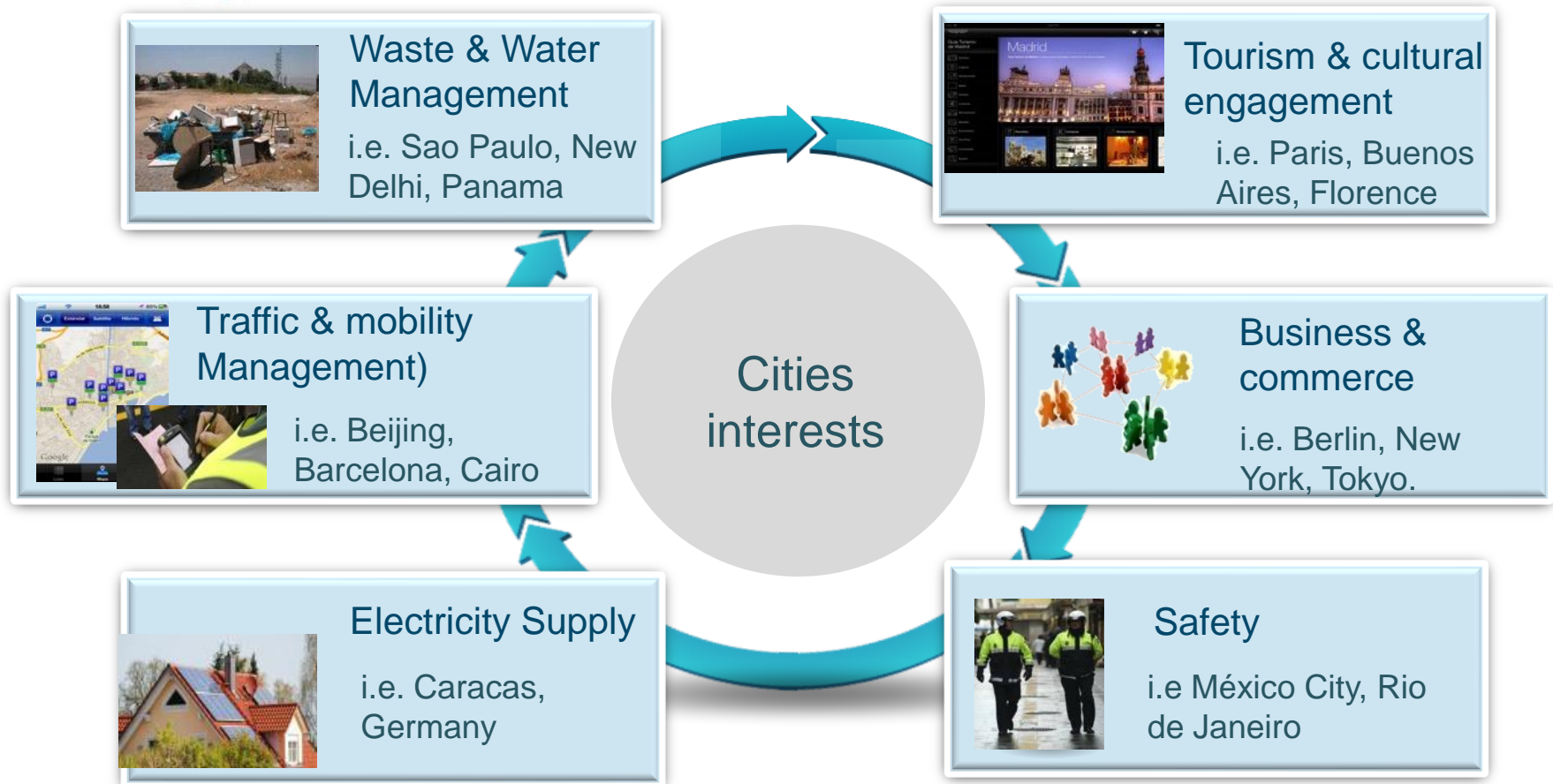
Waste Management

Waste Wise Cities & Connecting Waste Generators and Collectors

- Innovations in solid waste sector needed to combat pollution

- Discrepancy between generation of waste and collection

- UN-Habitat: Campaign and design of app to connect stakeholders

SMART CITY PROJECTS – CASE STUDY

Smart Sanitation Meters & Exhaust Vehicle Trackers – Nairobi

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60% of urban wastewater in Nairobi generated off sewage network

Half of wastewater collected in septic tanks and pit latrines

UN-Habitat: IoT solution to track fill level and trucks to avoid pollution

Affordable Air Quality Monitoring and e-Mobility- KAMPALA

Air pollution levels from vehicle exhaust rarely quantified

Pollution poses significant human and environmental health hazards

UN-Habitat: Placemaking & quantifying pollution, promoting e-transport

Air Quality database project -UNEP

In partnership with IQAir, UNEP hosts the world's largest databank for fine particulate matter PM 2.5. i.e. particulate matter with diameters that are generally 2.5 micrometers and smaller in size. This database is an example of the potential of crowdsourcing air pollution data that can advance the implementation of smart city at the city level
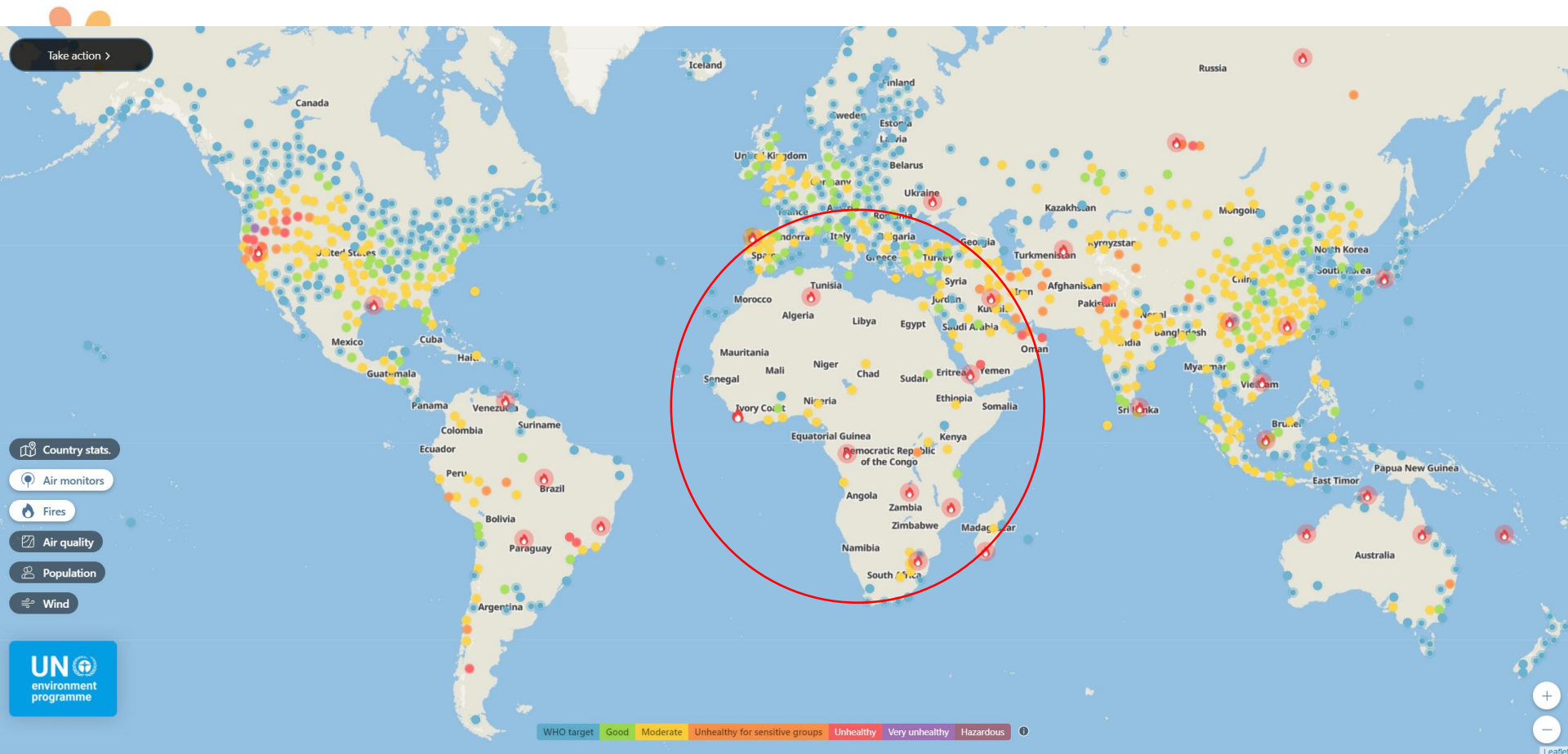
Can't measure –> Can't manage

A snapshot 18th May 2022 (evening)
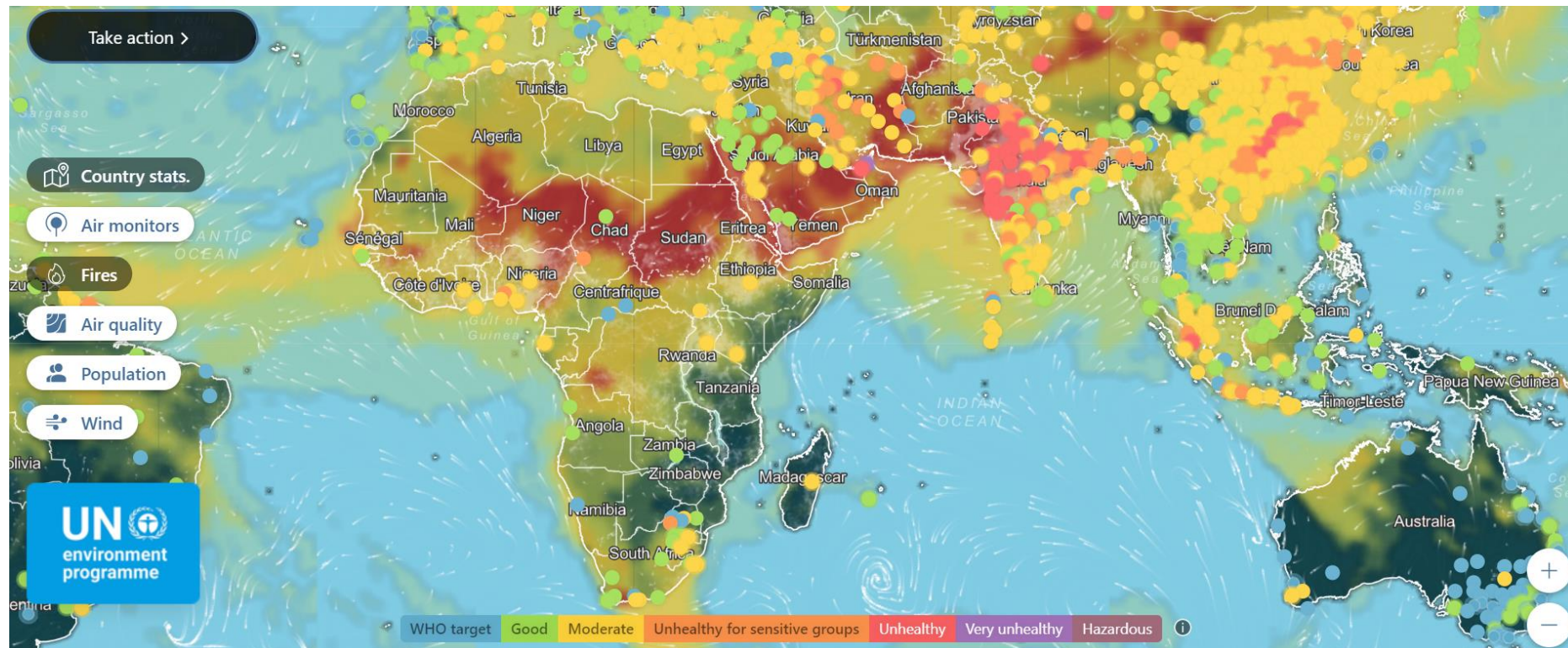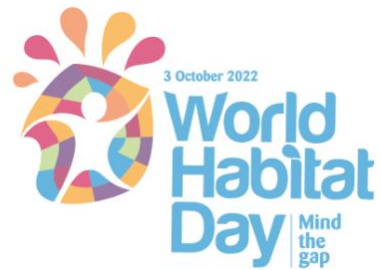
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Steps for stakeholder mobilization in Air Quality project

1) Air Quality need assessment with the county and site planning

2) Site Visit survey and identification of air quality sensor infrastructure

3) Deployment of low-cost sensor on the field

Image credit : UNEP, Nakuru County sites, 2022

Steps for stakeholder mobilization in Air Quality project

4) Air Quality data monitoring on the field

5) Calibration and colocation for quality control and assurance of the data

6) High level outreach for the involvement of strategic partners

Image credit : UNEP, 2022

Global Case – Barcelona Smart City
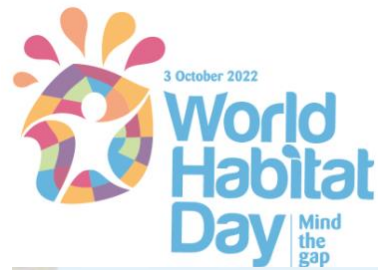
Commenced in 2000, Barcelona Smart City implements the key project in the city's southeast part, an old industrial zone (「22@ district」). The scale of business is over 180 Million EU worth and currently smart grid , smart communication, local heating, smart waste management are under construction.
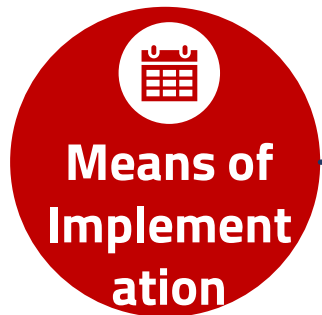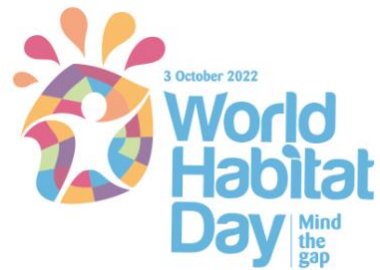
Global Case – Glasgow, UK

Glasgow, UK is the first city selected for the UK's future city project that aims to integrate urban infra. and improvement of living quality through communication network. The project is currently under progress with government's support of 50000 £ per each key sector, totaling 24,000,000 £ .

Means of Implementation

Mobilization of Financial Resources

Capacity Development

STRATEGIC PARTNERSHIPS

Mobilization of financial resources

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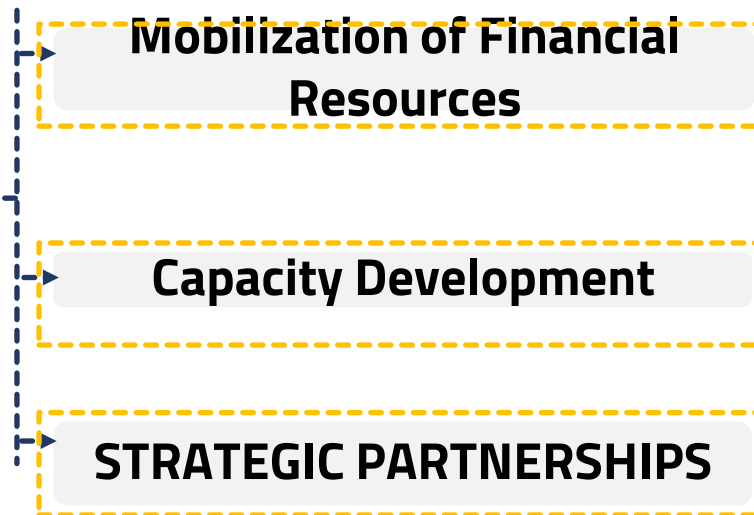
1.Mobilization of financial resources

Develop financing frameworks for implementing the NUA at all levels of government

65: Existence of structure or office or committee or taskforce for implementing the New Urban Agenda

Mobilize endogenous (internal) sources of finance and expand the revenue base of subnational and local governments

58: Percentage of the total budget that the local / sub-national government have discretion over to decide on priorities (financial autonomy)
59: Percentage of the local / sub-national government's financial resources generated from endogenous (internal) sources of revenue

Promote sound systems of financial transfers from national to subnational and local governments based on needs, priorities and functions

66: Stable existence of **"transfer formula"** in the last 5 years, without major changes, meaning reductions of more than 10%.

Mobilize and establish financial intermediaries (multilateral institutions, regional development banks, subnational and local development funds; pooled financing mechanisms etc.) for urban financing

67: Existence of at least one finance or infrastructure fund available for local governments.

68: Percentage of the local / sub-national government's financial resources generated from financial intermediaries such as multilateral institutions, regional development banks, subnational and local development funds, or pooled financing mechanisms.

THANK YOU FOR YOUR ATTENTION