

**11 SUSTAINABLE CITIES  
AND COMMUNITIES**



**Tracking Progress Towards Inclusive, Safe, Resilient  
and Sustainable Cities and Human Settlements**

**SDG 11 SYNTHESIS REPORT • HIGH LEVEL POLITICAL FORUM 2018**



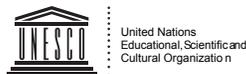
**UNITED NATIONS**





# Tracking Progress Towards Inclusive, Safe, Resilient and Sustainable Cities and Human Settlements

## SDG 11 SYNTHESIS REPORT HIGH LEVEL POLITICAL FORUM 2018





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# Acronyms and Abbreviations

CPI	City Prosperity Initiative
CSO	Civil Society Organizations
DAC	Development Assistance Committee
DHS	Demographic Health Surveys
DRR	Disaster Risk Reduction
EA	Enumeration Area
ECE	Economic Commission for Europe
ECA	Economic Commission for Africa
ECLAC	Economic Commission for Latin America and the Caribbean
EGM	Expert Group Meetings
ESCAP	Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for West Asia
FRA	European Union Fundamental Rights Agency
GDP	Gross Domestic Product
GIS	Geographic information systems
HLPF	High-level Political Forum
ICCS	International Classification of Crime for Statistical Purposes
LAU2	Local Administrative Units Level 2
LDCs	Least Developed Countries
MDG	Millennium Development Goals
MICS	Multiple Indicators Cluster Surveys
NASA	National Aeronautics and Space Administration
NDC	Nationally Determined Contributions
NGO's	Non-governmental organizations
NSC	National Sample of Cities
NSO	National Statistical Organizations
NSO's	Non-qualified Stock Options
NUA	New Urban Agenda
NUP	National Urban Policy
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
OWG	Open Working Group
RDP	Regional Development Plans
SANSA	South African National Space Agency
SDG	Sustainable Development Goals
UNESCO UIS	UNESCO Institute for Statistics
UITP	International Association of Public Transport (Union Internationale des Transports Publics)
UN DESA	United Nations Department of Economic and Social Affairs
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNODC	United Nations Office on Drugs and Crime
UNPFA	United Nations Population Fund
UNISDR	United Nations Office for Disaster Risk Reduction
VNR	Voluntary National Reporting
WHO	World Health Organization
WUF	World Urban Forum



# Foreword



The Sustainable Development Goals (SDGs) are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. Goal 11, one of the 17 SDGs, is about all of these dimensions, with a specific focus on urban areas and settings. This synthesis report is the first publication showing the progress, challenges and opportunities of global monitoring of this Sustainable Development Goal.

This report complements the 2018 Secretary-General's Progress Report on SDGs which shows progress in the form of storylines, and the 2018 Secretary-General's first quadrennial report on progress made in the implementation of the New Urban Agenda.

The SDG 11 synthesis report and the quadrennial report were developed under the coordination of UN-Habitat, a focal point for sustainable urbanization and human settlements, with the participation and support from several UN custodian agencies, UN regional Economic and Social Commissions, civil society, academia, the European Commission, United Cities and Local Governments and various other stakeholders and partners.

Given the complementary and interlinked nature of the 2030 Agenda for Sustainable Development, the Paris Declaration, the New Urban Agenda, the Sendai Framework for Disaster Risk Reduction, and other global agendas and frameworks relevant to sustainable urbanization and human settlements, the two reports should be discussed in a concurrent manner.

As highlighted by this synthesis report, the global challenges and opportunities for sustainable development are intimately interlinked. This report places special emphasis on the added value of sustainable urbanization as an enabler for achieving global prosperity and sustainability. The report identifies these connections and interlinkages, particularly the positive and negative associations between urban-related SDG targets with other targets, and with various global and regional agendas and initiatives.

This synthesis report acknowledges the many existing and cross-cutting opportunities to achieve development goals through the transformative force that urbanization represents. However, in order to maximize this potential, there is a need to overcome various methodological challenges, for instance: the need to adopt a global definition for cities and urban areas for purposes of global monitoring, developing qualitative, quantitative and spatial analysis tools and approaches for monitoring the city, its neighbourhoods and places to ensure that no one is left behind; establishing new partnerships at the local, subnational, national and global levels to reinforce monitoring and finally, reporting mechanisms.

This synthesis report presents progress made in the methodology. It also discusses the elaboration of targets, baselines and overall progress for selected indicators, placing special emphasis on partnership arrangement and opportunities for financing and scaling up activities and programmes.

The findings in this synthesis report are based on data and information collected through a rigorous process led by many custodian agencies and their partners and informed by inputs from Member States through their Voluntary National Reviews, and the participation of other development partners.

Reading this synthesis report, it is possible to identify the efforts deployed by many countries in setting up systems for data collection and analysis, including investing in Geographical Information Systems needed to support urban monitoring and spatial data collection. Selected countries are now reporting on various Goal 11 indicators as evidenced in the Voluntary National Review reports; yet, some of these countries are constrained by the lack of human resources and systems to support the collection of information and data for these technologically driven indicators. Additional constraints identified in this synthesis report include the limited coordination mechanisms among key stakeholders within countries, mainly at the national and local levels. Indeed, enabling political, legal and institutional

frameworks as well as financial support are instrumental for the achievement of SDG 11.

The report presents fresh data and new findings that help us understand our urban transitions and trends in these early years of the SDGs. For instance, it shows that more than 55 per cent of households in sub-Saharan Africa spend more than 30 per cent of their income on housing costs, amidst the growing number of people living in slum-like conditions. It also notes the dismal level of participation of civil society in urban affairs, despite its known value for nurturing and strengthening good governance, diversity, social cohesion, intercultural and interreligious dialogue, gender equality, innovation, inclusion, safety, etc. The synthesis report also shows with compelling evidence that cities are spatially expanding at a faster rate than that of population growth, raising various questions and impacts on urban related disasters, climate change, urban planning and policies. The report further notes that the share of land allocated to open spaces in most cities is insufficient, and the raising concerns for crime and

safety in public spaces that affects quality of life in some urban areas.

I recommend to a wide global audience the in-depth review of the findings and issues surrounding the implementation of Goal 11- at local, subnational national and global levels - as presented in this report. I encourage Member States and all stakeholders to leverage all the opportunities highlighted in this report, scale up and implement all the key recommendations to jointly address existing gaps, strengthen partnerships and collaborations and support resource mobilization for the effective implementation of SDG 11 and other related global goals.

I would like to take this opportunity to thank all our partners and stakeholders who contributed to this synthesis report. I am also grateful to the Regional Government of Andalucía as a co-sponsor for various working sessions that led to the production of this important document. It is only together that we can make cities and human settlements “inclusive, safe, resilient and sustainable.”

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# Acknowledgements

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UNESCO: Jyoti Hosagrahar, Karalyn Monteil, and Jose Pessoa, (Indicator 11.4.1)

UNISDR: Ritsuko Honda and Julio SERJE (Indicators 11.5.1, 11.5.2, 11b.1 and 11b.2)

WHO: Pierpaolo Mudu and Sophie Gummy (Indicator 11.6.2)

UNODC: Enrico Bisogno (Indicator 11.7.2)

UNEP: Martina Otto and Jillian Campbell (Indicator 11.6.1)

UNSD: Reena Shah (11.6.1)

## Contributions from other UN Agencies and UN Regional Commissions

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City Leadership Lab, University College London: Carla-Leanne Washbourne

KTH Royal Institute of Technology in Stockholm, Sweden: Yifang Ban

## Administrative Support

Mary Dibo, Anne Idukitta, Jacqueline Macha

## Financial Support:

Andalusian Agency for International Cooperation for Development for funding the Expert Group Workshop: Nairobi, Kenya (28 – 30 May 2018)

## Design and Layout: Peter Cheseret

## Suggested citation:

*DG 11 Synthesis Report 2018: Tracking progress towards Inclusive, Safe, Resilient and Sustainable Cities and Human Settlements, Nairobi, Kenya*





# Overview

## SUSTAINABLE DEVELOPMENT GOALS



**17**  
Sustainable Development Goals



**169**  
Global targets



**234**  
Indicators

### GOAL 11

**11** SUSTAINABLE CITIES AND COMMUNITIES



**10**  
Targets



**15**  
Indicators

## Background to SDG 11 Reporting

With the 2030 Agenda for Sustainable Development, Member States agreed on 17 Sustainable Development Goals (SDGs) with 169 global targets, and nearly 234 indicators that will be monitored for the period 2015–2030. The targets are designed to be integrated and indivisible and to balance the social, economic and environmental dimensions of sustainable development. The 2030 Agenda further seeks to realize the human rights of all, and to achieve gender equality and empowerment of all women and girls. Unlike the Millennium Development Goals (MDGs), the Sustainable Development Goals (SDGs) is an ambitious agenda that is indivisible and supposed to be implemented universally by all countries in a collaborative partnership. Under Article 47 of the 2030 Agenda, “governments have the primary responsibility for follow-up and review, at the sub-national and national levels, in relation to the progress made in implementing the Goals and targets<sup>1</sup>”. As such, countries are expected to establish regular and inclusive review processes and develop new systems for ensuring high quality, accessible, timely and reliable

disaggregated data to measure progress at the national and sub-national levels. Regional bodies and international agencies were given the responsibility for regional and global follow-ups and reviews.

In July 2018, Goal 11 will be reviewed for the first time as part of the United Nations High-level Political Forum on Sustainable Development (HLPF) –the global platform for follow-up and review of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs). The forum aims at *“improving cooperation and coordination within the United Nations system on sustainable development programmes and policies, promoting the sharing of best practices and experiences relating to the implementation of sustainable development and, on a voluntary basis, facilitating sharing of experiences, including successes, challenges and lessons learned, and promoting system-wide coherence and coordination of sustainable development policies.”*

The HLPF is organized every year under the auspices of the Economic and Social Council to provide a global space for all stakeholders (e.g. governments, local authorities, civil society, private sector,

academia, the scientific and technological community, etc.) to share and exchange their experiences on implementing the 2030 Agenda at national and global levels, identifying gaps and in fostering action, and every four years under the auspices of the United Nations General Assembly. The theme of each HLPF, and a subset of goals to be reviewed, is agreed in advance. Member States present national reports, which are reviewed together with reports and contributions from other major stakeholders (United Nations, Department of Economic and Social Affairs, etc).

The 2018 HLPF will also review other goals (6 - Clean water and sanitation, 7 – Affordable and clean energy, 12 - Responsible consumption and production, and 15 – Life on land), while for Goal 17 – Partnerships for the goals) with the overarching theme being *“Transformation towards sustainable and resilient societies.”*

At the regional levels, the United Nations Regional Commissions have a significant role to play in promoting sustainable development in their respective regions by promoting peer learning and cooperation, including South-South and triangular cooperation and effective linkage among global, regional, sub-regional and national processes to advance sustainable development.

Annually UN regional commissions convene regional Forums for Sustainable Development (RFSDs) that serve as the main regional platforms for coordinated implementation of the 2030 Agenda and for supporting Member states preparations and inputs to the HLPF.

Partners working on the urban related SDGs have produced this synthesis report with more detailed information on the baselines, challenges and opportunities



**SUSTAINABLE  
DEVELOPMENT  
GOALS**

***SDG targets are designed to be integrated, indivisible and to balance the social, economic and environmental dimensions of sustainable development. Governments have the primary responsibility for follow-up and review, at the sub-national and national levels, in relation to the progress made in implementing the Goals and targets***



**In addition, to sharing overall progress on Goal 11, this synthesis report is expected to raise awareness on emerging critical issues on “urban” as a cross-cutting area**



#### Part 1:

Provides a review on the importance of urban in the 2030 Agenda



#### Part 2:

Focuses on the progress made in implementation, monitoring and reporting on SDG 11



#### Part 3:

Examines outcomes/results of these efforts; and a conclusion section that provides recommendations for monitoring and reporting on SDG 11

for urban monitoring, including a summary analysis of the interlinkages with other global agendas that contribute to sustainable urban development. It also features an in-depth review of the efforts and issues surrounding the implementation of Goal 11- at local, national and international levels, sharing challenges and opportunities, and providing key recommendations for governments, private sector, civil society and the UN on how to jointly address existing gaps, strengthen partnerships and collaborations and support resource mobilization for effective implementation of the SDGs in cities.

The body of evidence in this report draws on primary and secondary data analysis (qualitative and quantitative) and triangulation including data available for the 15 SDG 11 indicators that track progress towards the 10 targets under this goal. In addition, the report draws on evidence derived from various other sources including some voluntary national review reports from the countries reporting progress at the 2018 HLPF, reports from NSOs, urban observatories, cities, other UN agencies, NGOs, private sector, academia, local governments, Global Sample of cities database<sup>1</sup>, and

geospatial data from selected cities. The report provides an introduction that lays out the context and purpose of the report, followed by the three main parts: Part 1: provides a review on the importance of urban in the 2030 Agenda; Part 2: focuses on the progress made in implementation, monitoring and reporting on SDG 11; and Part 3: examines outcomes/results of these efforts; and a conclusion section that provides recommendations for monitoring and reporting on SDG 11. In addition, to sharing overall progress on Goal 11, this synthesis report is expected to raise awareness on emerging critical issues on “urban” as a cross-cutting area, and provide insights for building effective partnerships for addressing the data collection and monitoring needs of all related indicators.

### **A renewed focus on urbanization**

The adoption by the international community of Sustainable Development Goals, which includes the standalone urban goal— (SDG 11) to make cities safe, inclusive, resilient, and sustainable, the Sendai Framework, and the New Urban Agenda (NUA) firmly places urbanization

at the forefront of international development policy. This recognition goes beyond viewing urbanization as simply a demographic phenomenon, but a transformative process capable of galvanizing momentum for many aspects of global development. Today, cities are well recognized as centers of innovation, investment, and play a priority role in driving industrialization and economic growth in both developed and developing countries alike. Urbanization plays a critical role in facilitating and ensuring that rural-urban connections that support a balanced territorial development are in place. Urban areas are the strings that connect all SDGs; more than half of the SDG targets have an urban component<sup>2</sup>. Furthermore, the connection between cities and culture is recognized in SDG 11.4 and in several articles within the outcome document of the New Urban Agenda as a key driver and enabler for achieving several city and urban related SDG targets and requires mainstreaming across several SDG indicators.

Cities are therefore well positioned to take the lead in addressing many of the persistent global challenges including pollution, climate change, resilience and environmental degradation, road safety,



urban mobility, traffic management, poverty, inequality, unemployment, crimes and security, etc. Cities are also key to finding solutions for new and emerging challenges, which the world is facing, from stemming the rise of plastic waste in our oceans to the introduction of new technologies as part of the Fourth Industrial Revolution.

The New Urban Agenda (NUA) -adopted in 2016 in Quito- complemented and reinforced the urban related SDG targets<sup>3</sup>. NUA's effective implementation contributes directly to the achievements of many other global agendas such as the Paris agreement, the Sendai

Framework for Disaster Risk Reduction, etc. The NUA addresses more specifically the means and approaches on how cities need to be planned, designed, managed, governed and financed to achieve sustainable development goals, focusing on the three transformative commitments: Social Inclusion and Ending Poverty; Sustainable and Inclusive Urban Prosperity and Opportunities for All; and Environmentally Sustainable and Resilient Urban Development. In addition, the 2018 Kuala Lumpur Declaration on Cities 2030 adopted at the 9<sup>th</sup> Session of the World Urban Forum (WUF) reaffirmed the power of cities in achieving and contributing to the success of the Agenda 2030 and NUA

targets. Cities of the UNESCO Creative Cities Network, currently have 180 cities across 72 countries, that are committed to the implementation of the 2030 Agenda and the New Urban Agenda integrating culture and creativity across a number of their goals and targets. It is worth noting that the NUA does not have a standalone framework for monitoring the targets, but serves as a framework for the means of implementation for global agendas in cities. Therefore, it relies heavily on the urban monitoring systems that are already in place such as the SDGs monitoring framework and the comprehensive City Prosperity Initiative (CPI) tools developed by UN-Habitat<sup>ii</sup>.

## How prepared are we for urban data collection and monitoring?

For global monitoring of the SDGs, a significant level of responsibility was given to Member States. For example, national governments through their national statistical systems are responsible for “follow up and review” of progress towards achieving SDGs at national, regional and subnational levels. This task requires building systems and creating capacities and an enabling environment for facilitating the monitoring and reporting by national systems on all the various goals. For some SDGs indicators, such systems were established during the MDGs era e.g the SDG11.1.1 housing indicator was derived from MDG 7 target 11, but for several urban related indicators such as those that depend on spatial data systems, new systems for reporting need to be set up. Through the SDGs collaborative frameworks, many custodian

agencies who are largely UN agencies and other multilateral partners are responsible for developing the methodologies for monitoring the SDGs targets and associated indicators. This role also includes providing technical support and capacity building for selected countries on application of new methodologies and concepts to allow them to undertake timely data collection and analysis, compilation and verification of data, and development and maintenance of SDG national databases. The custodian agencies are also responsible for provision of internationally comparable estimates for global monitoring and reporting.

For Goal 11, UN-Habitat along with other custodian agencies (UNISDR, UNESCO, WHO, UNODC, UNEP) and various stakeholders have supported several methodological activities and directly worked with countries on establishing systems for qualitative and quantitative data collection, including developing

guides for use of geospatial information technology, big data analytics and community-based data as additional sources of data at local, and national levels. For example, UNESCO organized two major expert meetings with the engagement of a large number of experts leading to the development of a complementary framework and suite of thematic indicators for culture in the SDGs and Goal 11 in particular. Monitoring and reporting at the city level requires defining new concepts, in addition to developing functional definitions of what constitutes a city or urban or rural areas as distinct units for purposes of global monitoring. With more than 7 targets under SDG 11 requiring collecting data at the local level prior to producing national level aggregates, new partnerships and structural and institutional data production and processing systems are needed. These and many other challenges and opportunities are further discussed in this synthesis report.



### Notes

- 1 <http://www.atlasofurbanexpansion.org/data>
- 2 Based on UN-Habitat's analysis of all SDGs indicators.
- 3 Member States, UN-Habitat and other UN agencies, civil society, communities, the private sector, professionals, the scientific and academic community all contributed to the development and focus of the New Urban Agenda.
  - i. United Nations General Assembly (2015). Transforming our world: the 2030 Agenda for Sustainable Development. Resolution adopted by the General Assembly on 25 September 2015. Seventieth session Agenda items 15 and 116. pp 11
  - ii. City Prosperity Initiative (<http://cpi.unhabitat.org>).

# Urbanization is an unstoppable phenomenon

► **The world is rapidly urbanising**

*The world's population living in cities or urban centres has risen steadily over the years*



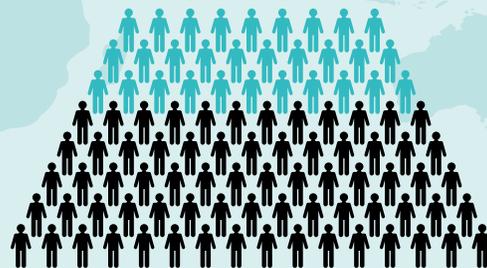
Since 2007  
over  
**50%**



By 2030  
about  
**60%**



By 2050  
approximately  
**66%**



From 2010 to 2050  
**2.5 to 3 billion people**  
will be added to the urban  
population worldwide

**Cities contribute to**

**80%**  
of global GDP

**70%**  
of global energy  
consumption

**70%**  
percent of global  
carbon emissions



***Urban areas will be increasingly critical for achieving all SDGs and integrating the social, economic and environmental goals set forth in the 2030 Agenda***

# Chapter 1

## Importance of the “Urban” in the 2030 Agenda

***Sustainable urban development is a fundamental precondition for sustainable development***

## 1.1 Introduction

Since 2007, more than half the world's population live in cities or urban centers. Estimates show that by 2030, cities will be home to 60% of the global population, a share that will further increase to about 68.4% by 2050.<sup>i</sup> Between 2010 and 2050, it is estimated that between 2.5 to 3 billion people will be added to the urban population worldwide; with the highest growth projected to be in less developed regions such as East Asia, South Asia, and sub-Saharan Africa.<sup>ii</sup> From MDGs to SDGs, the global community has in the last twenty years witnessed the emergence of urbanization as a key development trend.

The importance of urbanization for attainment of collective and inclusive progress features prominently in the post 2015 development agenda - "Transforming our world: the 2030 Agenda for sustainable development," through the endorsement of a goal on cities (Goal 11), known as the 'urban SDG' - *"make cities and human settlements inclusive, safe, resilient and sustainable"*. Cities drive innovation, consumption and investment worldwide, making them a positive and potent force for addressing sustainable economic growth, urban development and prosperity. Today, cities are powerhouses of economic growth contributing about 80 percent of global GDP, and functioning as catalysts for inclusion and innovation. However, cities also account for about 70 percent of global energy consumption and 70 percent of global carbon emissions<sup>iii</sup>, as well as over 70% of resource use, and within the context of unplanned or poorly governed urbanization, cities are often characterized by stark socio-economic inequalities, social exclusion, extreme poverty, high unemployment, slums, unaffordable and inadequate housing, and poor environment conditions as well as unsustainable environmental

footprints beyond the city boundaries. These interrelations are important to formulate integrated policies and plans needed to achieve sustainable urban development. With Goal 11, the global community acknowledged well-planned urban development as a key driver for sustainable development, recognizing that beyond the development challenges brought about by urbanization, cities offer formidable opportunities and alternatives for achieving development worldwide.

## 1.2 Sustainable Development Goal 11 in the 2030 Agenda: Targets and Indicators

The agreement on a standalone goal in SDGs on cities and human settlements was monumental and reflects the increased attention on "urban" as a development theme at the global level. Goal 11 is not the only goal in the 2030 Agenda where urban or human settlements issues are addressed. Goals such as Goal 1 (poverty and security of tenure), Goal 3 (Health), Goal 6 (water and sanitation), Goal 7 (Clean energy), SDG 12 (sustainable consumption and production, etc cover targets addressing human settlements and urbanization challenges.

Goal 11 seeks to "make cities and human settlement inclusive, safe, resilient and sustainable" through eliminating slum-like conditions, providing accessible and affordable transport systems, reducing urban sprawl, increasing participation in urban governance, enhancing cultural and heritage preservation, addressing urban resilience and climate change challenges, better management of urban environments (pollution and waste management), providing access to safe and secure public spaces for all, and improving urban management through better urban policies

and regulations. Goal 11 consists of 10 targets and 15 related indicators, majority of which are to be measured at the local city level and progress reported at the national level. (Table 1).

Issues of urban poverty and inequalities, urban planning, pollution, environmental degradation and climate change, etc that are linked to sustainable urbanization challenges can be found in several other goals such as Goals 1, 3, 6, 7, 17, etc (Figure 1).

## 1.3 Goal 11 interlinkages with other Sustainable Development Goals

As noted earlier, the adoption of the 2030 Agenda for Sustainable Development, the New Urban Agenda, the Paris Agreement, the Addis Ababa Action Agenda on Financing for Development and the Sendai Framework for Disaster Risk Reduction by Member States is an indication of the political will to end poverty, protect the environment, improve partnerships, health, education, gender equality, sustainable urbanization, consumption, production, etc. These agendas and frameworks are particularly complementary and will require coordinated actions at local, national and global levels to achieve.

The 2030 Agenda for Sustainable Development and its associated goals and targets are very comprehensive and address themselves to many global challenges and other agendas in an integrated manner. For example, the embedding of a stand-alone goal on cities and human settlements (Goal 11) in the SDGs is a recognition of this complimentary and re-enforcing nexus. Poorly managed urbanization constitutes a major threat to achieving the SDGs

**Table 1. SDG 11 targets and indicators**

Targets	Current Indicators
<b>SDG Target 11.1</b> By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	<b>11.1.1</b> Proportion of urban population living in slums, informal settlements or inadequate housing. [Tier I]
<b>SDG Target 11.2</b> By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.	<b>11.2.1</b> Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities. [Tier II]
<b>SDG Target 11.3</b> By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.	<b>11.3.1</b> Ratio of land consumption rate to population growth rate [Tier II] <b>11.3.2</b> Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically [Tier III]
<b>SDG Target 11.4</b> Strengthen efforts to protect and safeguard the world's cultural and natural heritage	<b>11.4.1</b> Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship). [Tier III]
<b>SDG Target 11.5</b> By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	<b>11.5.1</b> Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population [Tier II] <b>11.5.2</b> Direct disaster economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters [Tier I]
<b>SDG Target 11.6</b> By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	<b>11.6.1</b> Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities. [Tier II] <b>11.6.2</b> Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted). [Tier I]
<b>SDG Target 11.7</b> By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	<b>11.7.1</b> 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. [Tier III] <b>11.7.2</b> Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months. [Tier III]
<b>SDG Target 11.a</b> Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.	<b>11.a.1</b> Proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city [Tier III]
<b>SDG Target 11.b</b> By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.	<b>11.b.1</b> Number of countries that adopt and implement national disaster in line with the Sendai Framework for Disaster Risk Reduction 2015-2030a. [Tier I] <b>11.b.2</b> Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies [Tier II]
<b>SDG Target 11.c</b> Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials.	<b>11.c.1</b> Proportion of financial support to the least developed countries that is allocated to the construction and retrofitting of sustainable, resilient and resource-efficient buildings utilizing local materials. [Tier III]

**Tier 1:** Indicator is conceptually clear, has an internationally established methodology and standards are available, and data are regularly produced by countries for at least 50 per cent of countries and of the population in every region where the indicator is relevant.

**Tier 2:** Indicator is conceptually clear, has an internationally established methodology and standards are available, but data are not regularly produced by countries.

**Tier 3:** No internationally established methodology or standards are yet available for the indicator, but methodology/standards are being (or will be) developed or tested.

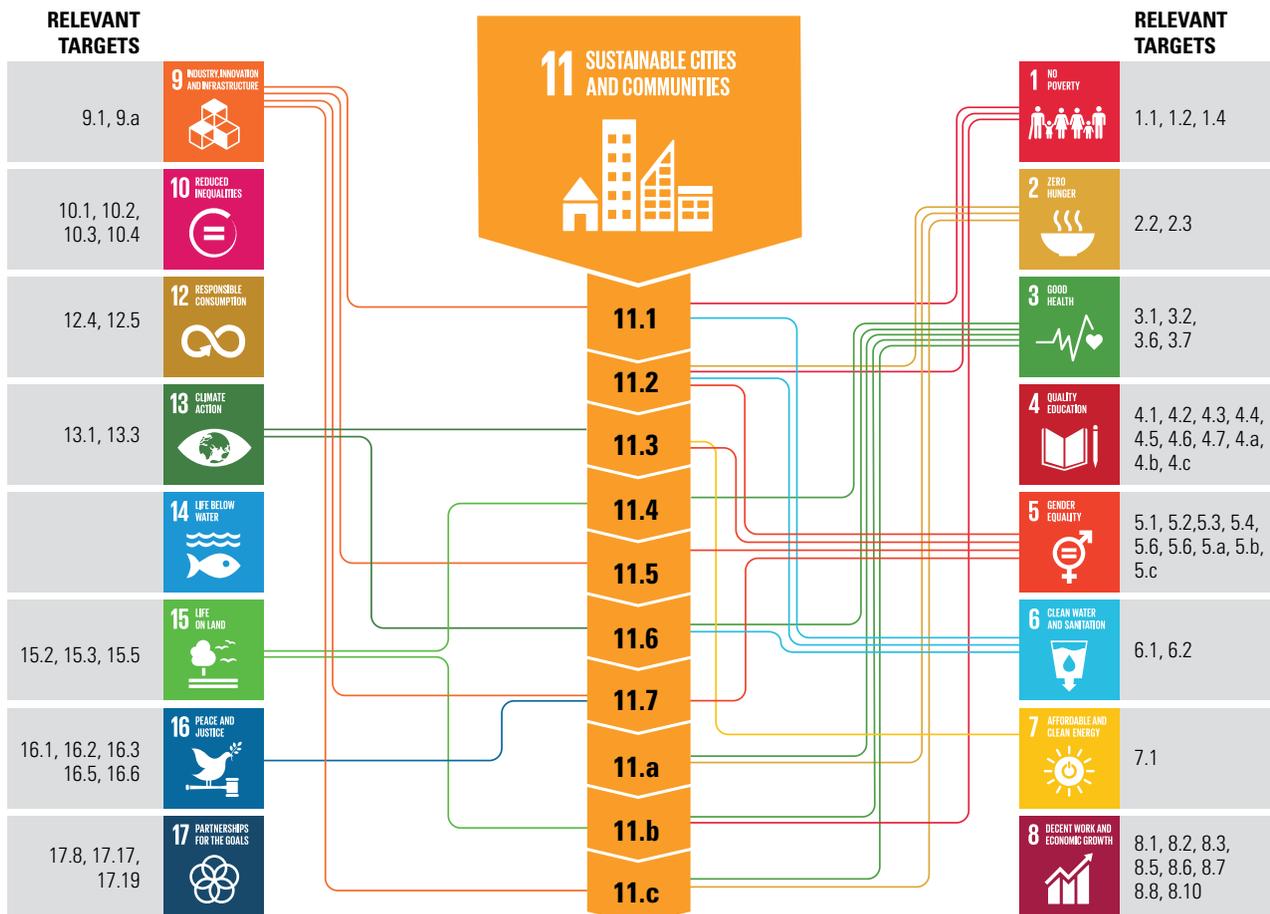
either through its direct or indirect effects on climate change, ecosystems, energy security, waste management, housing, urban mobility, etc. Some of the links between the SDGs 11 targets and other SDGs are clear e.g with SDG 1 on poverty or access to basic services, SDG 3 on health, SDG 4 on education, SDG 5 on gender equality, Goal 9 on building resilient infrastructure and promoting sustainable industrialization, Goal 12 on ensuring sustainable consumption and production patterns, SDG 16 on good governance, and SDG17 on partnerships and means of implementation, etc. Other targets such as those linked to climate change, financing, sustainable production and

consumption, inequalities, infrastructure and basic services, gender-based violence, food security and nutrition, and migration are inextricably linked to many targets of goal 11. Where positive connections are established, relevant policies must be integrated and reinforced to support these linkages. In instances where the interlinkages create negative externalities or trade-offs, existing policies must play a facilitative role to lower the undesired impacts. Achieving sustainable development requires addressing several development challenges in cities such as - poverty, inadequate infrastructure, poor health institutions, increased slum dwellings, negative environmental

impacts, inadequate transport and safe water access. Addressing such challenges goes beyond the Goal 11 targets, and requires working across and simultaneously on several agendas and goals within the SDGs.

Most SDGs are connected in one way or the other, and their implementation should be synchronized for attainment of sustainable development at the local, national and global levels. SDG 11 is directly linked to targets and indicators in at least eleven other SDGs (Figure 1). In addition, about one third of the 234 indicators that are part of the global monitoring framework for SDGs can be

**Figure 1. Interlinkages between SDG 11 and other SDGs**



measured at the local urban level, making the city an important unit for action and tracking progress towards sustainable development. Below is a detailed analysis of the various linkages between the urban targets under Goal 11 and targets in other goals.



### **SDG 1 – Ending poverty in all its forms**

The aim of the 2030 Agenda is to improve the lives of people in all human settlements around the world, increase prosperity and tackle planetary issues such as climate change, etc. The people centric aspect of the New Urban Agenda, correlates with various challenges and goals, such as the need to tackle food insecurity, poverty and health. SDG 1, on poverty eradication, is closely linked to SDG 11 as trends indicate that with humanity becoming increasingly urban, poverty is also becoming increasingly urban and often represented by rise of slum dwellers in cities across developing countries who lack access to basic services and adequate housing. It also captures security of land tenure which is key in urban areas for provision of services, but also offers a foundation for access to a basic means of production—land (Box 1).



### **SDG 2 – Zero hunger**

SDG 2 (food security) is linked to several goal 11 targets such as 11.3 and 11.5

### **Box 1. The link between Land, Cities and Human Settlements**

Responsible land governance including secure tenure is a key factor that will greatly influence achievement of inclusive, safe, resilient and sustainable cities and human settlement as reflected in SDG 11. The growth and development of Cities cannot be delinked from the anchor of its foundation-- the land in which it's planned, built and developed. Access to secure tenure rights to land and property remains one of major challenges facing most cities in the world, especially in developing countries. When tenure rights are safeguarded and promoted in cities, such a practice serves as an incentive for durable and sustainable economic development for all including small business enterprises to mega projects. Development of cities and human settlements that apply integrated land planning, management and governance policies where land rights for all (women, children, men, disabled) are secure is a global practice that guarantees peaceful co-existence, generates high returns on land-based taxations and other levies that leverage other sources of finances for city development; and increase conditions for access to adequate and affordable housing from capital investment.

The global importance of land in achieving the SDGs is explicitly acknowledged in **SDG 1: No Poverty**. The SDGs further provide us with a specific Target 1.4 and indicator 1.4.2: *Proportion of total adult population with secure tenure rights to land, with (1) legally recognized documentation and (2) who perceive their rights to land as secure, by sex and by type of tenure*

Indicator 1.4.2 focuses on people – all people, regardless of their place of residence in urban or rural areas, livelihood, wealth, ethnicity, sex, etc.”. This indicator requires national systems to document tenure security for of all adult population with legally recognized documents (e.g. Title, leases etc to their land and property) but also understand perception of tenure rights of those with legally documented rights and those living in informal settlement.

Through this indicator, local authorities (including cities) need to contribute to global monitoring of land tenure security in both rural and urban settings, as the foundation of inclusiveness and leaving no one behind. The combination of land tenure security indicator 1.4.2 and goal 11 targets, contribute immensely in the urban monitoring of poverty, social inclusion, women's empowerment, urban sprawl and rights to the city. Teams working on these related indicators i.e UN-Habitat and World Bank and Global Land Tool Network through the Global Land Indicators Initiative (GLII) and the Global Donor Working Group on Land, have undertaken joint methodological developments, capacity development for statistical systems with the spirit of ensuring that monitoring of land governance issues including tenure security is better coordinated.

and covers issues surrounding nutrition, agriculture and food production, rural-urban linkages, food waste, productivity impacts from pollution associated with cities as well as consumption patterns. Sustainable urbanization, which considers land requirements for agriculture is a requirement for attaining SDG 2. Increasing food security and nutrition for the poor through inclusive

participation deals with nutrition and agricultural challenges for those in urban and rural areas. Shortages of agricultural land for urban areas constrains social welfare and development within cities. The presence of cultivatable land for farming provides food for the urban areas and can support agricultural productivity whilst improving the livelihoods of rural populations.



### SDG 3 – Good health and wellbeing

SDG 3 promotes good health and well-being for all. Good health, safe road traffic and cities are greatly interlinked as health is often affected by “place.” Indeed, inclusive cities through integrated urban planning, access to basic services, decent and affordable housing (Targets 11.1, 11.2, 11.3, 11.7, 11.6) reduce non-communicable diseases and limit environmental hazards such as air pollution and dangerous traffic, contributing to better health. Indeed, poorly designed cities exacerbate health challenges leading to instability of cities and affecting the well-being of communities, through air pollution, congestion, spread of diseases and reduced labor productivity. Rapid and unplanned urbanization lead to increase in road traffic accidents, environmental and health hazards that greatly affect the health of city dwellers. Thus, cities and infrastructure play an important role in public health and well-being, and are at the nexus of poverty, health and environment.



### SDG-4. Quality education

Achieving SDG 4, i.e. *Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all* - will contribute to making cities inclusive and sustainable through better access to education by the urban poor and those facing vulnerability who often

live in slums. Inclusive and equitable education may help slum dwellers have adequate skills for decent jobs, which in turn will contribute to improving their living conditions. Furthermore, ending all forms of discrimination and eradicating discrimination for women and girls in terms of education is crucial to the achievement of inclusive cities for sustainable development worldwide.



### SDG 5 – Gender equality

SDG 5 calls for the achievement of gender equality and empowerment of all women and girls, which is linked to SDG 11 through access to and safety in public spaces, access and use of basic infrastructure, and participation in local governance and decision-making (Targets 11.2, 11.3, 11.7). Mainstreaming issues of gender in efforts to achieve SDG 11 targets will promote inclusion and empowerment of women (including by providing women with greater access to resource and productivity in cities), and help ensure inclusive and sustainable cities.



### SDG 6 – Clean Water and Sanitation

SDG 6 promotes the availability and sustainable management of water and sanitation for all. As such, it is connected to SDG 11 through Target 11.6 which calls for reduction of per

capita environmental impact of cities, through reduction of air pollution and better management of waste generated by cities. Effective urban planning and urban waste management systems are crucial to ensuring access to safe drinking water, sanitation and hygiene, and to improving the quality and sustainability of water resources worldwide. In turn, achieving SDG 6 will help in promoting better housing and slum upgrading (Target 11.1) but also in reducing the number of people affected by water pollution (Target 11.5). Cities account for much of human and urban solid waste, which is directly linked to several other targets under SDG6 and SDG11, and hence our joint efforts for the two goals are crucial in ensuring the kind of cities and world we build.



### SDG 7 – Affordable and Clean energy

SDG 7 calls for access to affordable, reliable, sustainable, and modern energy for all. Given the role of energy in addressing the economic, social and environmental dimensions underlined by the SDGs, SDG 7 is connected to many other goals including SDG 11. Access to clean and efficient energy systems is critical for the development of safe, resilient, inclusive and sustainable human settlements, allowing them to grow and perform efficiently. In turn, SDG 11 creates the condition for achieving SDG 7 through access to more sustainable transport, housing, urban planning, reduced pollution and mitigation of climate change<sup>iv</sup>. However, unsustainable patterns of consumption in urban areas may

contribute to environmental degradation in various forms, including direct energy consumption as well as embedded energy in goods and services.



### **SDG 8 – Decent work and economic growth**

SDG 8 promotes sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. Cities are positive and potent force for addressing sustainable economic growth, and prosperity as they drive innovation, consumption and investment. Indeed, cities contribute to 80 percent of global GDP worldwide.<sup>v</sup> As such, inclusive and sustainable cities are key to achieving SDG 8 through innovation, entrepreneurship, job creation and greater productivity. In turn, inclusive and sustainable economic growth will promote inclusive and resilient cities (better housing, urban planning, access to basic services).



### **SDG 9 – Industry, innovation and infrastructure**

Investment in infrastructure and the application of innovative technologies, such as Intelligent Transport Systems (ITS) are critical factors for achieving urban development. As such, SDG 9 - Build resilient infrastructure, promote inclusive and sustainable

industrialization and foster innovation – is strongly connected to SDG 11 (Targets 11.2, 11.3, 11.7, and 11.6). Investment in infrastructure, industrialization and innovation are key to making cities safe and sustainable at the latter involves investment in smart infrastructure for public and non-motorised transport, clean energy systems such as modern district energy for heating and cooling, creating green and blue public spaces, and improving urban planning and management in a way that is both participatory and inclusive. Infrastructural development and the application of innovative technologies, such as ITS, can help leapfrog technology, innovation and industrial diversification leading to resilient, sustainable and inclusive cities.



### **SDG 10 - Reduced inequalities**

Inequalities are very prevalent in cities and come in many complex ways, but cities are also best positioned to address prevailing inequalities through better opportunities for employment, fixing affordable housing challenges, providing better spaces for inclusion, accessible transport, etc. Therefore, there is need for SDG11 efforts to tightly link with other goals such as SDG 10 to address social, political, economic, ethnic, racial, and other inequalities playing out in urban areas. Exclusion and marginalization that are also experienced by people with disabilities, refugees and migrants play out in complex ways in cities; and poor urban planning, design and governance can exacerbate these, or in fact offer

viable solutions for addressing these challenges. At the same time, the focus on cities in SDG 11 and other SDG targets focusing on rural inequalities will help ensure that such inequities are not hidden behind national averages.



### **SDG 12 - Responsible consumption and production**

Cities are key to achieving sustainable patterns of production and consumption given their prominent roles as producers and consumers worldwide. Cities account for over 70% of GHG emissions as well as use of natural resources. SDG 11 contributes to achieving SDG 12 through efficient management of natural resources, safe disposal and treatment of toxic waste and pollutants (Targets 11.6, 11.b).

Cities that use their resources efficiently in an innovative manner increase their productivity and reduce their environmental impacts, offering their residents greater consumption choices and sustainable lifestyles.<sup>vi</sup> Particularly, integrated city planning that reduces sprawl can improve sustainable consumption patterns. Standards for buildings, energy and transport can help reduce embedded energy as well as reduced material footprint<sup>1</sup>. In turn, sustainable consumption and sustainable patterns promote inclusive, resilient and sustainable cities by reducing latent stressors. However, the interlinkages can also be negative in instances where unsustainable patterns of consumption or production in urban areas contribute to environmental degradation.



Water pollution, Bagmati River in Kathmandu, Nepal © Shutterstock/ Maksym Gorpenyuk



### **SDG 13 – Climate action**

Cities are particularly vulnerable to climate change and impacts from natural disasters. Today Hundreds of millions of urban dwellers are at risk from the direct and indirect impacts of current and likely future climate change—for instance, from more severe or frequent storms, floods and heatwaves, constraints on fresh water and food supplies, and higher risks from a range of water-borne, food-borne and vector-borne diseases. Cities are also contributors to climate change, accounting for between 60 and 80% of energy consumption, large amounts of solid waste and responsible for nearly 70 % of all greenhouse gases emissions. As such, SDG 13 - “Take urgent action to

combat climate change and its impacts” is a key for achieving sustainability elements of SDG 11. In turn, Goal 11 offers many opportunities to develop mitigation and adaptation strategies to address climate change especially through environmentally sustainable and resilient urban development (Targets 11.2, 11.5, 11.b, 11.c.), as well as ensuring responsible urban development plans and policies through target 11a.



### **SDG 14 – Life below water**

Goal 14 calls for conservation and sustainable use of oceans, seas and marine resources for sustainable development. Achievement of SDG

11 has direct positive impact on achieving Goal 14 through proper management of waste generated by cities that can pollute oceans. Coastal cities and human settlements often increase pressure on the environment. Indeed, pollution in oceans is often caused by pollution from cities. At the same time, achieving SDG 14 also reinforces sustainable urban planning and resilient settlements, given that urban development often occurs along coasts due to economic advantages and opportunities presented by coastal areas. The inter-linkages between SDG 11 on one hand and SDG 14 on the other are clear through the need to conserve our biodiversity. The way we perceive urbanization has large implications for how its likely future influence on food and farming is perceived. Urbanization brings major changes in demand for agricultural products both from increases in urban populations and from

changes in their diets and demands. This has brought and continues to bring major changes in how demands are met and in the farmers, companies, corporations, and local and national economies who benefit from it.



### **SDG 15 – Life on land**

SDG 15 calls for the conservation and restoration of the use of terrestrial ecosystems such as forests, wetlands, drylands and mountains. Ecosystems and biodiversity are important for human life as they facilitate access to basic services and provide conditions for human production, consumption and habitation worldwide. Sustenance and livelihoods of humanity hinges on the earth and the ocean. As such, SDG 11 contributes to achieving SDG 15 by promoting sustainable urbanization (Target 11.3), better urban planning (Targets 11.2, 11.b, 11.c), development of green infrastructures (Target 11.7), safe management and treatment of waste (Target 11.6), protection of the world's natural heritage (Target 11.4). In turn, SDG 15 contributes to developing sustainable cities and human settlements through advocating for nature-based solutions and disaster risk reduction.

On the negative side, uncontrolled sprawling can have negative impacts on SDG 15. Urban sprawling, low-density development are linked to loss of valuable agricultural land, and natural ecosystem, environmental degradation and the exacerbation of the effects of extreme climate events.



### **SDG 16 – Peace, justice and strong institutions**

Finally, like all the other SDGs, SDG 11 will only be achieved if there is peace and effective governance (SDG 16) and financial and institutional resources for implementation. As humanity becomes increasingly urban, the kind of urban societies we build will greatly shape our progress towards 2030. The urban dimensions of crime, violence and insecurity will need to feature in efforts to achieve both SDG 11 and SDG 16 targets. Corruption and illicit financial flows are increasingly conducted in cities and connected to many urban development efforts. Peaceful, inclusive and sustainable cities require more than careful urban planning; they rely on the kind of institutions we build in cities, and on how we govern our cities and the process of urbanization itself.



### **SDG 17 - Partnerships for the goals**

Goal 11 will only succeed if there are strong partnerships within and across with all other goals. Partnerships for sustainable urban development involve a wide network of actors, including international organizations, member states, international and regional associations of cities, NGOs, the private sector, specialized funding bodies, goodwill ambassadors and civil societies, and National Commissions

plus Category 2 Centers in the case of UNESCO. There are several ongoing partnerships such as ongoing work led by UN-HABITAT, UNISDR, WHO, UNEP, UNESCO, other UN agencies and intergovernmental organizations to better coordinate activities on the targets and agree on frameworks for action. For example, UNESCO and UN Habitat renewed their cooperation in 2017 with a commitment to work jointly towards the integration of culture in Goal 11 and to integrate culture within the City Prosperity Index (CPI) of UN Habitat. An MOU has also been signed between UNESCO and The World Bank (2011), concerning their cooperation on heritage preservation, and UNESCO and the United Nations World Tourism Organization (2013) to strengthen cooperation towards sustainable approaches to heritage management and tourism.

UN Habitat and UNEP have a longstanding cooperation agreement—the Greener Cities Partnership. At present both agencies are further deepening this through a more integrated approach to urban infrastructure and a landscape/nature-based solutions lens. Other collaborative partnerships on SDGs 11 include joint work methodological reviews with FAO, World Bank, OECD, European Commission, New York University and UN-Habitat on the development of urban(cities) and rural definitions to support global monitoring. In the context of the Sendai Framework for Disaster Risk Reduction (DRR), there strong partnerships between UNISDR, UNESCO, World Bank and UNDP to build a culturally-sensitive approach to DRR, while drawing on culture to strengthen resilience. These partnerships seek to provide technical and operational guidance for post-

disaster city reconstruction and recovery programmes, and to develop tools to assess capacity at the national level for DRR in the culture sector.

## 1.4 Goal 11 interlinkages with other Global and regional Agendas

Achieving sustainable development requires reinforcing and complementing the global agendas to maximize efficiencies and build synergies. The 2030 Agenda has interlinkages with other global agendas including the New Urban Agenda, the Paris Climate Change Agreement, the Sendai Framework for Disaster Risk Reduction 2015 - 2030, among others. Implementing SDG 11 is linked to the achievement of these agendas that portend important urban dimensions.



### i. The New Urban Agenda

The New Urban Agenda (NUA) is the first internationally agreed document detailing implementation of the urban dimension of the SDGs. It builds on SDG 11, focusing on what needs to be done to ensure cities and human settlements as vehicles of development. There are therefore substantive

linkages between SDG 11 and NUA. However, the NUA goes beyond Goal 11 to address a wide range of actions necessary for making cities spatially effective for sustainable development and details strategic actions necessary for ensuring that cities and human settlements support and facilitate the implementation of SDGs. For example, the NUA clearly articulates strategic spatial and governance frameworks such as national urban policies, legislation, spatial planning and local finances, which create form the means of implementation for SDG 11. Indeed, the NUA addresses ways in which cities are planned, designed, managed, governed and financed to achieve sustainable development goals; making it a complimentary driver for the achievement of all the SDGs. SDGs are well connected and linked with the three transformative commitments of the NUA i.e

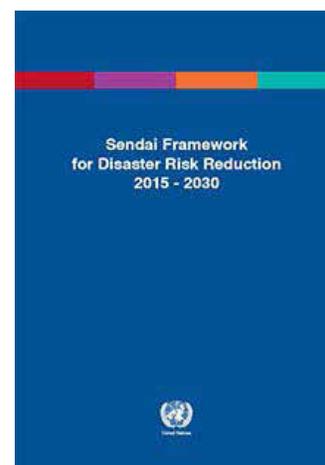
a) **Leave no one behind**, by ending poverty, ensuring public participation, equal rights and opportunities, socioeconomic and cultural diversity, and integration in the urban space, enhancing livability, education, food security, health, ending the epidemics of AIDS, tuberculosis and malaria, promoting safety and eliminating discrimination and all forms of violence, providing equal access for all to physical and social infrastructure and basic services, as well as adequate and affordable housing;

b) **Ensure sustainable and inclusive urban economies** by leveraging the agglomeration benefits of well-planned urbanization, productivity, competitiveness, innovation, by promoting full and productive employment, equal access for all to economic and productive resources and opportunities, preventing land speculation, promoting secure land

tenure and managing urban shrinking, where appropriate;

### c) **Ensure environmental sustainability by promoting clean energy and sustainable use of land and resources**

in urban development, by protecting ecosystems and biodiversity, including adopting healthy lifestyles in harmony with nature, by promoting sustainable consumption and production patterns, by building urban resilience, by reducing disaster risks and by mitigating and adapting to climate change. Mechanisms of how effectively we advance the NUA will have implications for achievement of the 2030 Agenda, and hence requiring close alignment in the implementation of both agendas.



### ii. Sendai Framework for Disaster Risk Reduction 2015 - 2030

The international community recognized the role of disaster risk reduction in realizing the transformative potential of the 2030 Agenda for Sustainable Development, by adopting several targets directly or indirectly linked to disaster risk reduction across the 17 SDGs. Specifically, there are two targets related to disaster risk reduction under SDG 11 – Target 11.5 and Target 11.b. Sustainable development

cannot be achieved if disasters continue to destabilize countries and undermine economic and social progress. The Rio+20 conference stressed the need for stakeholders to consider disasters as they can have a depressing effect on SDGs. The Sendai Framework for Disaster Risk Reduction 2015-2030 complements the 2030 Agenda as it includes seven global targets and a whole set of guiding principles for disaster risk management, prevention and reduction and resilience strengthening. Specifically, it indicates that to increase urban resilience, disaster risk assessments should be integrated into land-use policies, urban planning, and land degradation assessments. All the Sendai Framework's targets are critical for the achievement of the SDGs, whose progress in turn is key to building and strengthening resilience against disasters. Both the Sendai Framework and target 5 of goal 11 use a similar set of indicators, meaning that they can both be tracked through a single measurement; while (SDG 11) target 11.b aims to directly monitor the implementation of the Sendai Framework.



### iii. Paris Agreement on Climate Change

The *Paris Agreement under the United Nations Framework Convention on Climate Change* welcomes and integrated the efforts of non-Parties including those



Climate change has caused a rise in sea level. Streets flooded by rising tide at Ho Chi Minh city, Vietnam © Shutterstock

Urbanization features in about **70%** of the submitted **Nationally Determined Contributions (113 out of 164)**, demonstrating the **linkages between urbanization and climate change actions**

of cities and sub-national authorities, and recognizes the need to strengthen knowledge, technologies, practices and efforts of local communities. Local leaders showed strong leadership and commitment under the Global Action Agenda and this links well with the global goals of SDGs and NUA targets. The threat that climate change poses to achieving sustainable development in the world informed the adoption of a stand-alone goal on climate change in the SDGs 9 and Goal 13- as well as targets related to the adaption and building resilience

to climate change in several others, including SDG 11 (9, 12, 14 and 15). The SDGs offer many opportunities to develop mitigation and adaptation strategies to address climate change especially through environmentally sustainable and resilient urban development. Specifically, Goal 11 recognizes the role cities play in climate change through several targets including Targets 11.2, 11.5, 11.b, 11.c. Latest data indicates that cities are major contributors to climate change as they account for between 60 and 80% of energy consumption and generate more than 70% of all greenhouse gases emissions, waste and air pollution but they are also highly vulnerable to natural disasters.<sup>vii</sup> The Paris Agreement reinforces the need for tackling climate change as an integral part of the 2030

Agenda with strong linkages between the SDGs and the Agreement's Nationally Determined Contributions (NDC). The NDCs place an emphasis on climate actions that are mainly connected to urban planning, transportation and early-warning systems. In total, 82% of all NDCs include urbanization-related climate activities, and each of the SDG 11 targets is related to at least one NDC activity, with the most prominent being Targets 11.2 and 11.5. In general, urbanization features in about 70% of the submitted NDCs (113 out of 164), demonstrating the linkages between urbanization and climate change actions.<sup>viii</sup> The strong connection between NDCs and SDG 11 is crucial for achieving the 2030 Agenda and the success of the Paris agreement, making the two initiatives inter-dependent.



#### **iv. Addis Ababa Action Agenda**

The implementation of the 2030 Agenda requires viable financing which is the aim of the Addis Ababa Action Agenda. The Addis agenda provides a foundation to support the implementation of the SDGs, with the aim of mobilizing public finance, setting appropriate policies and regulatory frameworks to unlock private

finance, trade collaborations/opportunities, science and technological development, and incentivizing changes in production and investment patterns. It recognizes that funding from all sources, public and private, bilateral and multilateral, domestic and international, as well as alternative sources will need to be tapped into to effectively exploit the benefits of cities. To make cities inclusive, safe, resiliency and sustainable, the right conditions need to be created to unlock the potential of cities, ensuring that both public and private finance is channeled in ways that contribute towards sustainable development.

#### **v. Other regional Agendas and initiatives**

Goal 11 directly addresses the urbanization agenda for all regions and acts as a framework to streamline regional level actions to global best practices, while connecting directly to the aims of the New Urban Agenda. All regional commissions are aware of the need for integrations of the regional and global urban agendas while also supporting country level engagements on SDG 11 monitoring. UN-Habitat is directly working with the regional commissions to not only support alignment of the regional urbanization agenda to both SDG 11 and the NUA, but also to deliver technical assistance and capacity development to countries. For example, the African Union (AU), in collaboration with the Economic Commission for Africa and UN-Habitat, is developing a regional framework aligned with Africa Agenda 2063, the SDGs, the Paris Agreement among others. In Europe, the 2016 regional urban agenda<sup>2</sup> has been further aligned with the global urban agendas through action plans and linked directly with the urban related SDGs targets. In Asia-Pacific, UNESCAP supported the development of the Pacific New Urban Agenda with

the Pacific Island Forum Secretariat and is facilitating the development of a Sustainable Urbanization Strategy for the Association of South East Asian Nations (ASEAN) aligned with Master plan on ASEAN Connectivity 2025, as well as the Smart Cities Network set up in 2018 under the Chairmanship of the Government of Singapore. The Regional Road Safety Goals, Targets and Indicators for Asia and the Pacific (2016-2020), with direct links to SDG 3.6 and SDG 11.2, had been adopted at the Third Session of the Ministerial Declaration on Sustainable Transport Connectivity in Asia and the Pacific in December 2016.

ECE Committee of European Statisticians is supporting the monitoring of progress towards SDGs and targets in the UNECE region through coordination and methodological work. Work in this area includes: a road map for setting up the reporting on SDGs in the UNECE region; Guidance on measuring sustainable development, and Capacity building for reporting on SDGs.<sup>3</sup> ECE-UN-Habitat joint project is supporting efforts of governments in the UNECE Region for strengthening national capacities for sustainable housing and urban development in countries with economies in transition through the development of a guidance document for data collection and evidence based policies.<sup>4</sup>

UNECE and WHO/Europe jointly administer the work on the Transport, Health and Environment Pan-European Programme with a focus on ensuring that these three sectors work together to improve the urban environment. One of the key partnerships for transport is the Sustainable Mobility for All initiative in which UNECE is the lead on both the efficiency and safety pillar. This has a significant role in developing urban transport policy.

## 1.5 How are countries reporting on urban from Voluntary National Reviews?

In the last 3 years, countries have had an opportunity to report on progress of implementation of Goal 11 targets. Many countries have reported the involvement of ministries with cross-cutting influence, such as ministries of planning or finance, and the mainstreaming of the SDGs 11 targets into sectoral/line ministries, as well as the integration of SDG targets within the country's development plans and other relevant urban strategies. Countries have also reported efforts to engage several partners including civil society, academia and private sector, in shaping policies and plans to implement the urban related SDGs. In some countries and for several targets, efforts are still at an early stage, and others are completely stalled. Urban targets require engagements at the national and sub-national/city levels. Many countries are still working on mechanisms and structures to ensure appropriate engagements and involvement of the various levels of governments. Several countries also expressed need for capacity building in areas ranging from statistics to policy-making, communication of findings, monitoring and policy reviews as immediate needs.

Urban data on the Goal 11 targets received so far, comes with large variations in quality and availability, with capital cities and large towns having more data with better quality than small towns. Closing the data gaps across cities, and harmonizing reporting systems is key. On average countries are only able to report on less than one third of the global indicators for SDG 11, and only 3 per cent reported on more than 5 indicators. What has evidently emerged, is that there are real constraints in terms of

resources or technical capacities faced by countries to enable them report on the SDG 11 indicators as referenced in Table 2 where in the last three years, only 31% of countries are reporting on at least one target under Goal 11. Many countries are still at the stage of integrating the global SDG indicators framework into national monitoring systems. The costs for localizing the monitoring requirements at various sub-national levels are not yet known, and subsequent follow-ups need to focus on examining existing financial and human resources, and developing context specific capacity development packages for cities and countries using a bottom-up approach.

There is still much work to be done to ensure availability of timely and good quality data on all the SDG 11 indicators. National Statistical Organization (NSOs) need to coordinate with local authorities

in the data collection process, including the integration of spatial information. Nearly 60% of Goal 11 indicators are to be collected locally, and this demands resources and efforts for the establishment of sound monitoring mechanisms. Strengthening national and local capacities is therefore paramount to enable and build systems that support collection, analysis and dissemination of SDGs data and information, including supporting different forms of disaggregation, accompanied by spatial analysis, and the necessary mechanisms to aggregate urban data at country level. An effective implementation structure for SDG 11 at the national and sub-national levels requires reliable and effective governance structures and supportive frameworks for financing, innovations and institutional capacity-building, with a well-connected network of stakeholders at global, regional and national levels.

**Table 2. Countries reporting Voluntary National Reviews, 2016–2018**

Regions	Total VNR countries reported from each region 2016-18	Countries reporting on SDG 11	Proportion reporting on Goal 11/Atleast one target
Oceania	1	1	100
Europe & North America	32	11	34
Australia and New Zealand	1	1	100
East & Southeast Asia	10	2	20
Central & Southern Asia	9	1	11
Western Asia & North Africa	14	7	50
Sub-Saharan Africa	17	4	24
L.A.C	19	5	26
<b>Total</b>	<b>103</b>	<b>32</b>	<b>31</b>

## 1.6 Early experiences and lessons

Goal 11 has 10 targets and 15 associated indicators that need to be reported on by cities and national governments. In addition, most of the 234 SDG indicators have a direct connection to urban policies and a clear impact on cities and human settlements, since nearly one third of indicators are being measured at the local level. Considering the above, there is an urgent need to scale up capacity building initiatives for countries, strengthen UN coordination mechanisms within and across goals, and provide more funding options and resources to build data systems that offer alignments in data collection processes, methodological development work, including addressing definitions of new urban concepts. Enhancing political, legal and institutional frameworks as well as financial support at the local (city/local governments) levels is also needed.

Other global agendas that portend strong urban dimensions reinforce and complement the 2030 Agenda and especially SDG 11. These include the New Urban Agenda (NUA), the Paris Climate Change Agreement, the Sendai Framework for Disaster Risk Reduction 2015 - 2030, the Addis Ababa Action Agenda, and several regional agendas. All these agendas have strong linkages with SDG 11 – providing a means for financing urban development (Addis Agenda), addressing a wide range of actions necessary for making cities spatially effective for sustainable development (NUA), providing a framework for disaster risk management, prevention and reduction and resilience strengthening including urban resilience (Sendai Framework), and focusing on climate actions that include urbanization-related activities (Paris Agreement). Maximizing

efficiencies and building synergies between these global agendas will be key in achieving sustainable urban development by 2030. It is also important to note that the linkages and connections between agendas and various targets can be both positive and negative, and hence these relationships versus desired outcomes or impacts need proper identification, analysis and mitigation of any associated risks.

In the context of the Sendai Framework for Disaster Risk Reduction (DRR), UNESCO developed partnerships and tools with key international partners such as the World Bank and UNDP to build a culturally-sensitive approach to DRR, while drawing on traditional knowledge of local communities and their intangible cultural heritage to strengthen resilience. These partnerships seek to provide technical and operational guidance for post-disaster city reconstruction and recovery programmes and for assessing capacity at the national level for DRR in the culture sector.

Recognizing that Culture is both a sector of activity and transversal, UNESCO has ongoing efforts to develop thematic indicators for culture in the SDGs that is complementary to the SDG framework. More than 300 cities in the World Heritage list monitor the protection of their cultural heritage, and the 180 cities of the UNESCO Creative Cities Network have committed to integrating culture and creativity in sustainable urban development strategies and other global urban agendas.

In a unique way, goal 11 monitoring and reporting presents major challenges that other SDGs do not necessarily confront. Out of the 15 urban/city related SDGs indicators under this Goal, 9 are being collected at local city level and not by routine data collection mechanisms such

as census or household surveys: 11.2 public transport; 11.3.1 land consumption; 11.3.2 civil society participation; 11.4.1 budget on cultural heritage; 11.5 disaster mortality and people affected by disasters; 11.6.1 solid waste; 11.6.2 Air quality; 11.7.1 public space. In addition, from the 15 indicators, 8 require some form of spatial data collection and analysis at local/urban level with a clear method at the urban agglomeration level: 11.1 housing and slums; 11.2 public transport; 11.3 efficient land use; 11.5 disaster mortality and people affected by disasters; 11.6 urban solid waste and air quality location; 11.7 public space. In both cases, new systems and structures of data collection must be established at the city and national levels to service the new demands for these clusters of indicators. Other emerging challenges relate to management and governance of many actors at various levels of servicing the needs of the urban indicators; development of a globally agreeable definition of a city; and weak linkages between national and city governments which hinders information flow.

Despite these challenges, many custodian agencies have finalized the work on developing methodologies needed by countries to guide the global monitoring of SDGs and other global agenda. Equally, many countries are already investing in systems for data collection for SDGs monitoring including unique GIS based systems needed for supporting urban monitoring. Many capacity building workshops have also been organized in regions (Asia, Africa, Latin America, Gulf States, etc.), and others are expected/ planned in the next two years. As a result, several countries are now reporting on various Goal 11 indicators as evidenced in the Voluntary National Review (VNRs) reports.



## Notes

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## SDG 11 was formulated to track progress in cities and human settlements across 15 indicators

- **Cities' monitoring has taken a central place in post-2015 development agendas, particularly the SDGs and the NUA**



### Key outputs produced

Metadata, data collection tools and checklists, training manuals

**All Goal 11 metadata and other guides have been disseminated to countries to guide local monitoring and reporting**

### Through consultative processes

workshops and expert group discussions



United Nations Regional Commissions

Specialized institutions

Other partners



**Monitoring progress on SDG 11 indicators is based on statistical principles and standards**

### Development of tools and methodologies

Methodological developments, technical support to Member States and global level monitoring and reporting for SDG 11 is led by:

**UN HABITAT**  
FOR A BETTER URBAN FUTURE

**UNESCO**  
United Nations Educational, Scientific and Cultural Organization

**UNFPA**

**UN environment**

**World Health Organization**

**UNODC**  
United Nations Office on Drugs and Crime

**UNISDR**  
United Nations Office for Disaster Risk Reduction

**UN Statistical Division (UNSD)**

How

## Chapter 2 Progress on SDG 11 indicators

### Monitoring and Implementation

*This chapter discusses progress made towards creation of an enabling environment for monitoring and reporting on the urban SDGs. It focuses, particularly on methodological developments over the last two years, capacity development initiatives introduced and implemented in countries by different agencies, and the diversity of tools created by custodian agencies and their partners to enhance data generation and availability. Aspects of mainstreaming features of gender, youth, persons with disability, and culture into the measurements and monitoring frameworks are also discussed, along with the emerging opportunities and challenges for urban SDGs monitoring. The chapter also highlights best practices on emerging innovations and partnerships for data collection, analysis, reporting, and information sharing.*

## 2.1 Introduction

The 2030 Agenda for Sustainable Development and the New Urban Agenda place emphasis on the integrated approach required to achieve sustainable urban development. While cities did not form a major monitoring element during the period of the MDGs, their monitoring has taken a central place in post-2015 development agendas, particularly the SDGs and the NUA. SDG 11—Make cities and human settlements inclusive, safe, resilient and sustainable—which is also referred to as the urban goal was specifically formulated to track progress in cities and human settlements across 15 indicators, each of which represents a key urban function. Most of these indicators are being monitored globally for the first time, except for indicator 11.1.1, which was partly monitored under the MDGs (MDG 7, target 7D or the slum target). Many indicators require developing and defining new concepts; piloting and refinement of their measurement methods; establishment of the appropriate monitoring systems within countries; and building new partnerships and capacities, including providing technical advisory services to State Members of the United Nations.

## 2.2 Development of tools and methodologies

Like all other SDGs, the methodological development work for monitoring progress on SDG 11 indicators is based on statistical principles and standards. At the global level, methodological developments, technical support to Member States and global level monitoring and reporting for SDG 11 is led by several custodian agencies that include; UN-Habitat; the United Nations

Educational, Scientific and Cultural Organization (UNESCO) ; the United Nations Population Fund (UNFPA); the United Nations Office for Disaster and Risk Reduction (UNISDR); World Health Organization (WHO); UN Statistical Division (UNSD), and the United Nations Office on Drugs and Crime (UNODC). Many custodian agencies are working with other partners, including United Nations Regional Commissions and other specialized institutions with particular interests or expertise on these indicators.

*The availability of these guides and tools has contributed to an increase in the number of cities and national statistical offices that understand the processes and procedures that need to be followed to monitor some of the complex urban indicators*

Since 2016, many custodian agencies, in collaboration with other organizations, have developed relevant guides, materials and clarified definitions that are needed for global monitoring. This has been achieved through consultative processes that have included workshops and expert group discussions. In addition, the custodian agencies, in partnerships with UN Regional Commissions, have led capacity development efforts across countries and offered continuous support to Member States in piloting the developed methods, or in collection of relevant data, and indicator computations.

Some of the key outputs produced include metadata, data collection tools and

checklists, as well as training manuals. The available metadata contains details of how the indicator is defined, how it is collected, and the rationale for its global monitoring. The metadata also provides detailed information on definition of concepts and method of computation, potential sources of data for the indicator and means of disaggregation, and any anticipated monitoring and reporting challenges at the national levels.<sup>1</sup>

All Goal 11 metadata and other guides have been disseminated to countries to guide local monitoring and reporting; several countries have shared feedback and comments for further refinement. The available guides are also used for capacity development by various agencies such as non-governmental organizations, civil society, universities, and national statistical offices. The availability of these guides and tools has contributed to an increase in the number of cities and national statistical offices that understand the processes and procedures that need to be followed to monitor some of the complex urban indicators.

A complete SDG 11 monitoring guide with all urban indicators is available for national and local governments to use in reporting on Goal 11 indicators.<sup>2</sup>

### 2.2.1 The scope of data collection for Goal 11 indicators is unique

One aspect that sets Goal 11 apart from most of the other SDGs, is the need to monitor and report progress for selected indicators at the local level and report progress at the national level. This requires every country to collect data for monitoring selected indicators under this Goal for all its cities, then aggregate all the city-level measures to a single national-



First technical meeting on human settlements indicators for the SDGs © Julius Mwelu/ UN-Habitat

level measure that would represent the country. This is a challenging task for most countries for two main reasons:

1. Cities are defined differently between and within countries, making global comparison difficult.
2. Some countries have many cities irrespective of how they are defined, yet they lack the required capacity to monitor them effectively.

These two challenges are critical to defining the scope of measurement for selected SDG 11 indicators, and custodian agencies together with their other partners are working to surmount these difficulties. Secondly, there is need for a universal definition as to what constitutes a city or an urban area for purposes of global monitoring. In the last two years, discussions on a global city definition have featured prominently at various urban forums, including the 2018 World Urban Forum, or during specialized urban expert group meetings organized by custodian agencies, and at the United Nations World Data Forum 2017. Discussions for addressing the challenge of large sets

of cities found in some countries zeroed down to applying a concept of “national sample of cities”. This concept is further explained later in this report.

### **2.2.1.1 Global City definition**

Many SDGs targets and indicators refer directly to cities as the unit of analysis for tracking progress. Yet countries define cities differently, based on a single or combination of criteria that includes aspects such as population size or density (or both), economic function, nature of activities (agricultural versus commercial), amount of locally generated income, as well as political and administrative measures. Without a single globally applicable definition of a city as the measurement unit for selected SDG 11 indicators, countries are likely to compute estimates using various operational concepts, which could include the city core, urban agglomeration, metropolitan area, all of which use different thresholds and methods, making global comparisons difficult.

To overcome this challenge, many partners including UN-Habitat, European Commission, World bank. OECD, FAO, New York University, etc have been

developing and testing several potential city definitions. As part of this initiative, many potential definitions being used by countries were reviewed and several global consultations and expert group meetings organized. These consultations led to narrowing down to two potential global definitions, namely:

- **City as defined by its urban extent.** Urban extent represents the total built-up area, which is itself defined as the contiguous area occupied by buildings and other impervious surfaces, classified in three levels based on the share of built-up density (urban state) in a 1-km<sup>2</sup> circle of a given point: urban built-up area (greater than 50 per cent; suburban built-up area (between 25 and 50 per cent) and rural built-up area (less than 25 per cent).<sup>i</sup>
- **City as defined by its degree of urbanization.** This approach adopts a classification that indicates the character of an area based on population size, density and contiguity of settlements in units called “Local Administrative Units Level 2 (LAU2),” distinguishing three settlement types: densely, intermediate and thinly populated areas.<sup>ii</sup>

Experts have acknowledged varied approaches adopted by the two methods and called on all partners to work towards a harmonized approach that would be easy to apply at the country level. UN-Habitat and several other partners has since been engaging with different member states, cities and civil society to pilot the approaches as part of the proof of concept, but also to learn early lessons and challenges around applying these global definitions. It should, however, be noted that the emerging city definitions are not meant to change how countries delimit their urban areas, instead the definitions will be used for global monitoring purposes only.

### **2.2.1.2 The National Sample of Cities: A model Approach to Monitoring and Reporting performance of Cities at National Level**

Data collection across all SDG 11 indicators requires a lot of resources. These vary from financial, institutional, human resources to investing in new systems. Assessments undertaken by several custodian agencies including UN-Habitat since 2016 revealed that most countries are challenged with the quality of available data systems and resources to support monitoring on all SDG 11 indicators<sup>3</sup>. However, a few countries, particularly those from developed regions, have well-established urban data collection structures, and enough resources to cover all the needs of monitoring and reporting on progress of Goal 11.

To support countries with limited resources for systematic data collection on SDG 11 indicators, UN-Habitat and other partners developed the national sample of cities (NSC) approach. The approach helps countries to select a non-biased sample of representative

cities and use these for monitoring and reporting on performance at the national level. Selection of the sample cities follows application of sound statistical and scientific methodologies based on relevant city-selection specific criteria

that captures the contexts of cities, ensuring that the sample is consistent and representative of a given country's territory, geography, size, number of cities, and history.<sup>4</sup>

## **Box 2. Goal 11 requires use of alternative methods of data generation**

Many Goal 11 indicators require collection at city level and not with routine data collection mechanisms such as censuses or household surveys. Examples include indicators on public transport (11.2.1); land consumption (11.3.1); civil society participation (11.3.2); budget on cultural heritage (11.4.1); solid waste management (11.6.1); air quality (11.6.2); and public space (11.7.1).

A common feature cutting across the non-traditional sources of data required for these (7) indicators is inclusion of a spatial component, whether as the main unit of analysis or a determinant of indicator results. Indicator 11.3.1, for example, adopts spatial metrics as one of its main units of analysis (rate at which land is consumed by urban growth) while results for indicator 11.6.2 greatly vary from one area of a city to another based on concentration of air pollution intensities. All these indicators require an understanding of the organization as well as the density of human settlements, which can be attained through spatial analysis techniques using remote sensing and geographic information systems.

Huge advances in geospatial information technology over the past few decades have, among other things, necessitated high processing power, development of alternative methods of data generation (including Earth observations, crowdsourcing and community generated data) and the establishment or involvement of many institutions specializing in spatial data generation, some with free and open data policies. These have given the necessary attention to the role of the geospatial science in global monitoring of urban development and are contributing to a wide availability of up-to-date, accurate and usable urban data. Over the past decade, several partners and United Nations agencies have embraced these technologies and brought them to the mainstream of the monitoring architecture.

The adoption of spatial monitoring standards and methods, particularly those related to urban monitoring is going to increase urban data generation, analysis, and reporting of urban trends significantly over the next 15 years. Partners working on Goal 11 have developed spatial analysis techniques with guides that countries can easily apply for generation of relevant SDG 11 data. It is anticipated that the high significance of these systems for local and global monitoring and their ease of adoption as well as integration into conventional data structures will result in their uptake at the local level. Partnerships for local support around these technologies are focused on capacity development especially for teams in developing countries.

An example of newly emerging spatial data collection resources is the Land Use Efficiency Tool, that was developed by the Joint Research Centre of the European Commission to support SDG 11.3.1 monitoring\*. The tool, which can be installed as an extension to the QGIS open source software is designed to be used with Global Human Settlement Layers on built-up area and population, but can be easily adapted to other input data.

\* <http://ghsl.jrc.ec.europa.eu/tools.php>

### Box 3. Earth observations for human settlements monitoring

Earth observations (EO) refer to monitoring the planet using sensors in, on or around the Earth. The Group on Earth Observations (GEO) is an intergovernmental partnership that provides open access to more than 400 million open EO data and information resources that are relevant for SDGs monitoring, research, policy and decision-making.

The GEO Work Programme supports global SDG monitoring through the Earth Observations in Service of the 2030 Agenda for Sustainable Development\*. Specific work on SDG 11 includes: assessing land-use efficiency, public space, climate mitigation and adaptation, and disaster risk reduction. For example, GEO Data Access for Risk Management is offering greater use of freely available satellite imagery across each phase of the disaster cycle for preparedness and prevention, as well as response and recovery.

Other activities include community efforts around the GEO Human Planet Initiative, GEO Land Degradation Neutrality, GEO Vision for Energy, and GEO Wetlands.

\* <https://www.earthobservations.org/activity.php?id=112>

### Box 4. Spatial Microsimulation Urban Metabolism (SMUM) Tool for modelling policy impacts

Urban Metabolism is a way of looking at cities and all the resources that flow within their complex networks (“material flows”) of interlocked social and physical infrastructure. It conceptualizes the city as living super-organism in which there are continuous flows of inputs and outputs and helps in the study of the patterns of movements of matter and energy. This supports cities in identifying opportunities for sustainable resource management and can be linked with infrastructure to find alternative ways of using resources sustainably.

One of the tools that UN Environment developed to address issues in cities challenged by data scarcity is the Spatial Microsimulation Urban Metabolism (SMUM) tool\*. SMUM combines two powerful approaches – spatial microsimulation (SM) and urban metabolism (UM) – to model the impact of policy around any number of resources, including water, electricity, construction materials, food, waste and others. The system can be fully adapted to suit the local requirements and policy priorities.

Using SMUM, a synthetic population may be constructed for a city-system. It can allocate consumption values to the individual groups allowing cities – including those in data scarce environments – to monitor the distribution of resource flows (where and who). This same information can be used as a scenario building tool to simulate the potential impact a policy change can have on the resource flow distribution.

\* <https://smum.readthedocs.io/en/latest/>

Adoption of the NSC in countries removes biased reporting where countries that lack resources may find it easier to report only on major cities on which data is available and omitting others where data may be scanty or missing. In addition, the approach enables countries to report on a consistent set of cities for which progress can be tracked over time in a more systematic and scientific manner. The NSC approach has been piloted in several countries including Botswana, Colombia, Ecuador, and Tunisia.

#### 2.2.2 Cross-cutting tools and concepts for Goal 11 monitoring

Over the past two decades several partners including UN-Habitat, have developed various tools for global urban monitoring, which have contributed to generation of urban data that is directly relevant for the SDG 11 monitoring and other global agendas. Many of these tools were refined and modified in readiness for supporting the global monitoring of the urban SDGs. Two of the most relevant tools include the Global

Urban Observatory model and the City Prosperity Initiative. Other United Nations bodies have developed complimentary initiatives to support SDG 11 monitoring, one of the most recent being the United for Smart Sustainable Cities Initiative.

##### 2.2.2.1 The urban observatory model: An effective mechanism for informed decision-making for cities and urban SDGs monitoring

To help find creative solutions to the urban information crisis, UN-Habitat in partnership with many stakeholders

and cities developed for the urban observatory approach for urban data monitoring, collection and analysis. Systematic guidance on setting up urban observatories was provided to many countries leading to the development of a global network of local, national and regional urban observatories<sup>5</sup>.

Urban observatories are well-positioned to meet the frequently expressed need for reliable, high resolution urban data sets specific to the cities and immediate city-regions in which they operate. They assist in strengthening data capacities at national, subnational, and local levels, providing platforms to facilitate effective knowledge exchange and

promote evidence-based governance built on a shared knowledge base. Today, UN-Habitat is overseeing and coordinating 374 urban observatories worldwide: 101 in Africa, 143 in Asia, 130 in Latin America. These local think tanks are leading the local level engagements in collecting, analyzing and interpreting data for urban indicators related to the NUA and the urban SDGs through consultative and inclusive processes. UN-Habitat channels all newly developed urban monitoring tools and guides through these local urban observatories. UN-Habitat has been working with several partners to enhance the capacities of the many urban observatories to play a continuous central role in data collection and reporting on

SDGs and NUA. This critical mass of urban observatories constitutes a very important asset for the monitoring and reporting of the international urban agendas.

**2.2.2.2 The City Prosperity Index: an efficient tool for measuring the well-being of cities**

In 2012, UN-Habitat developed the City Prosperity Index to measure the wealth and sustainability of cities as part of its efforts to support and provide technical aid to them and countries. The index is part of a broader platform, the City Prosperity Initiative, a practical framework for the formulation, implementation and monitoring of policies and practices on

**Figure 2. Linkages between CPI and SDG 11 Targets**



sustainable development to increase wealth in cities. The City Prosperity Index is a composite index based on six dimensions and over 15 subdimensions that are contextually specific and globally comparable. The dimensions are infrastructure development, productivity, quality of life, equity and social inclusion, environmental sustainability, governance, and legislation. The City Prosperity Initiative incorporates new analytical tools based on spatial indicators that facilitate a systematic disaggregation of information along with the key dimensions of urban development.

The City Prosperity Initiative (CPI) integrates indicators for urban SDGs to concentrate in a single framework the environmental, social and economic components of city prosperity and sustainability. Indeed, all 10 targets and indicators of Goal 11 are integrated in the CPI (see figure 2). The CPI has, therefore, the potential to be a global monitoring platform for Goal 11 indicators and other SDGs with an urban component. It is estimated that around one third of urban-related indicators can be measured at the local level, having a direct connection to urban policies and a clear impact on cities and human settlements. Also, 23 per cent of all SDG targets that can be measured at local level are covered by the CPI. Countries which apply the CPI can identify, quantify, evaluate, monitor and report on progress they and their cities are making in achieving Goal 11. Today, UN-Habitat has supported more than 400 cities across the world to implement the CPI. Experiences from deploying the CPI shows that countries and cities that have adopted this unified and standardized platform for SDGs monitoring and reporting of urban indicators have saved time and resources. UN-Habitat and UNESCO have agreed to develop tools for monitoring culture within the City Prosperity Initiative.

### Box 5. Regional level platforms that support multi-stakeholder engagement will accelerate SDG 11 monitoring: Example of the Urban and Cities Platform in LAC

The Forum of Ministers and High-Level Authorities on Housing and Urban Development in Latin America and the Caribbean (MINURVI) recognized the need for a regional action plan (RAP) for the implementation of the NUA in LAC and the “the exchange of knowledge and experiences for the strengthening of national policies” in the Asunción Declaration (2016). This declaration was endorsed at the XXV General Assembly of MINURVI, as well as in Habitat III with the presentation of the Regional Report.

The preparation of the RAP was to be accompanied by setting up of the “*Latin American and Caribbean Urban and Cities Platform*”, composed of two elements:

1. **A Virtual Forum:** for the analysis and discussion of urban and territorial dynamics and processes within the region
2. **An Observatory:** to compile and visualize urban and city-level information, including relevant indicators for monitoring the implementation of the NUA and the SDGs, good practice, and the analysis of relevant legislation, public policy, plans, programs and projects. This will be connected with the numerous urban and city observatories already in existence (such as those by UN-Habitat, CAF, IDB, OECD, World Bank, etc)

The main objective of the Platform will be to consolidate and present information on the national, sub-national and city level in order to provide a useful tool for the visualization of information via a user-friendly and interactive interface. It will further support implementation of RAP by acting as a tool for the improvement of local implementation capacities and act as a best practice transfer and ideas exchange portal.

The information presented in the Platform will be open for use by all actors, including decision-makers, members of academia, and civil society. It will therefore serve to support the development of public policy, plans, programs and projects; to inform academic investigations; to maintain regional inhabitants informed regarding key urban issues; and to facilitate collaborative data analysis and research agendas between international agencies and countries, as well as the reports and reviews on cities regularly developed by UN-Habitat in collaboration with other UN agencies.

The Platform responds to the need to collect and analyse information related to urban areas in the region and will provide users with an objective tool for the review and follow-up of the RAP, the NUA and the implementation of the urban dimension of the 2030 development Agenda. The active participation of member states and cities in the collection and analysis of information will be a key factor in ensuring that the Platform is maintained up to date and of relevance.

The platform would be jointly managed by ECLAC, UN-Habitat, and MINURVI in collaboration with other strategic partners (including international organizations, academia, NGOs, development banks, and the private sector).

Source: ECLAC, UN-Habitat, MINURVI (2018). *Regional Action Plan for the implementation of the New Urban Agenda in Latin America and the Caribbean 2016-2036*

### 2.2.2.3 United for Smart Sustainable Cities (U4SSC) Initiative

The United for Smart Sustainable Cities Initiative is a global platform for smart city stakeholders. It advocates for public policies to encourage the use of information and communication technology to facilitate the transition of cities towards smart and sustainable approaches to development. The U4SSC aims to generate guidelines, policies and frameworks for the integration of ICTs into urban operations, based on the SDGs, international standards, and urban key performance indicators. It also seeks to help streamline smart sustainable cities' action plans and establish best practices with feasible targets that urban development stakeholders are encouraged to meet. The U4SSC is supported by 16 United Nations agencies, programmes, funds and secretariats.<sup>6</sup> It has also developed key performance indicators for measuring progress towards achieving the objectives of smart sustainable cities.



**Key performance indicators for measuring progress towards achieving the objectives of smart sustainable cities are being implemented by**

**50 cities globally**

The indicators are fully aligned with the SDGs and support the implementation of Agenda 2030 at the local level as well as enhance evidence-based policies and measures. The key performance indicators are being implemented by 50 cities globally. Implementation includes the capacity-building of local and national authorities on data collection, financing, smart infrastructure and planning; as well as the elaboration of smart sustainable city profiles with recommendations and city action plans.<sup>7</sup>

## 2.3 Capacity development efforts in support of SDG 11 monitoring

With most of the Goal 11 indicators being monitored locally and globally for the first time, there is a significant amount of time and resources that must be invested in building and supporting the monitoring capacity of national statistical systems and other partners. A global assessment undertaken by UN-Habitat on the preparedness of countries to monitor and report on all the urban-related SDG targets accurately, reliably and in a timely manner for evidence-based policymaking showed mixed results<sup>8</sup>. Unlike a few countries that are “data rich and ready to go,” the findings indicate that most countries neither have the capacities nor the systems to support such global and local monitoring. This points to the paramount need to strengthen the capacities for many partners and member states. In addition, it acts as a call for the international community to support the countries that still need to develop the necessary monitoring and reporting mechanisms (for example, partnerships, coordination, systems).

Various custodian agencies of SDG 11 indicators have supported capacity

development activities for national statistical organizations, relevant line ministries and departments, local authorities and other levels of government involved in SDGs monitoring and localization, as well as non-traditional partners such as the private sector, academia, and civil society groups. This has been largely implemented through workshops organized in various regions and countries, as part of major conferences and global meetings. The agencies have also offered other forms of support, including provision of technical advisory services to set up local monitoring systems such as urban observatories or CPI systems, as well as strengthening global urban monitoring partnerships with national statistical offices.

Some of the main activities executed by the custodian agencies at the global level include the following:

- In 2016, UN-Habitat organized the first workshop on human settlement indicators to introduce SDG 11 indicators to countries and NSOs and disseminate materials that had been developed by then to guide the goal monitoring and reporting.<sup>iii</sup>
- In 2017, UN-Habitat, UNECA, ECE, ESCAP, ESCWA and ECLAC worked with several countries such as Albania, Botswana, Colombia, Ecuador, Georgia, Kyrgyzstan, Tunisia, Ukraine, etc to test the concept of a national sample of cities as a tool for monitoring, and report on SDG 11 and other urban-related indicators. These engagements, which form part of several initiatives, have enabled countries to learn firsthand how to a) create a multilevel coordination system for national and local monitoring and reporting; b) reinforce interlinkages of Goal 11 indicators and other SDG indicators

with an urban component, adopting a citywide approach to monitoring urban development; c) facilitate a systematic disaggregation of information along key dimensions of urban development; and d) assist in the aggregation of locally produced city indicators for regional and global monitoring and reporting. The lessons learnt from these experiences were documented and are being shared with other countries through various guides and tools and during appropriate forums such as the upcoming 2018 World Data Forum.

- UN-Habitat, together with other 10 United Nations entities are undertaking a United Nations Development Account project aimed at supporting the implementation of the SDGs in developing countries through capacity-building. Through the project, UN-Habitat worked with UNECA, ESCAP, and ESCWA to provide training to more than 50 countries on monitoring various SDG 11 indicators. Two other regional workshops are planned for late 2018, which will bring the number of countries with trained personnel to about 70. The main target for these workshops are NSOs and other partners directly involved in the SDG monitoring processes.
- Countries often request custodian agencies to provide in-country advisory missions on Goal 11 monitoring. Such missions have been conducted in Botswana, Kuwait, Saudi Arabia, Senegal, Swaziland, Tunisia and Zambia, among others. These missions have aimed to assist NSOs to domesticate urban monitoring tools for SDG reporting.
- Specific NSO targeted trainings were conducted in Africa, Asia, and Latin America, as part of regular meetings held in all the regions. Specialized training sessions were also organized

for city leaders during the Habitat III conference of 2016.

- Since 2016, UN-Habitat and all other lead custodian agencies have developed indicator-specific modules that provide step-by-step guidance on the concepts and methods of computation of several SDG 11 indicators. These modules are accessible to all countries and cities free of charge. In addition to the above capacity development initiatives, the elaborate network of urban observatories available in many regions and countries provides direct SDG-11-related capacity development. Training on setting up urban observatories have been conducted in several countries, including Botswana, Egypt, Ethiopia, India, Jordan, Kuwait, Mexico, Saudi Arabia, Tunisia, Vietnam, and Zambia. Each training resulted in the creation of new local urban observatories. Other SDG 11 custodian agencies have also been undertaking capacity development initiatives in collaboration with regional commissions. For example, in December 2017, UNISDR organized a technical workshop to launch the Sendai Framework Monitoring Process, which was attended by 170 participants from approximately 80 countries. These included representatives from NSOs, line ministries in charge of disaster management, international organizations, seven United Nations agencies and other stakeholders. These representatives learned more about the Sendai Framework's global indicators and their links with the SDGs, including various approaches to their monitoring.
- UNECE has also undertaken a number of sub-regional capacity building workshops on how to gather transport related SDG data both at the urban

and national levels, including a focus on SDG 11 data gathering activities. These workshops have been focused on South East and East European and Central Asian countries and involved Government (Ministries in charge of transport) as well as non-Government entities. In addition, The UN's Special Envoy on Road Safety along with the World Bank, ECA, UNECE, UN Habitat are planning for a capacity building workshop in Ghana on SDG target 11.2 in August 2018.

Countries that have benefitted from these capacity development initiatives are already reporting and sharing urban data on the national performance of their urban sectors. Evidence of this is in the annual report on the SDGs published by the United Nations Secretary-General, as well as the 2018 voluntary national review reports. From December 2017, 52 national statistical offices had reported on at least 1 of 8 SDG-related human settlement indicators.

## 2.4 Mainstreaming gender, youth, persons with disabilities and culture in SDG 11 monitoring

The SDG framework requires all aspects of age, gender and disability to be incorporated in the measurement of all indicators. The majority of SDG 11 indicators must be disaggregated based on these parameters, making mainstreaming of these disaggregates a monitoring requirement as opposed to an optional undertaking.

Data on these parameters is being collected and reported along with the main components of the indicators. In addition to the general requirement for



Protesters at women's march, Toronto, Canada. © Shutterstock/ Shawn Goldberg

all SDGs to disaggregate data by age, gender and persons with disability, three Goal 11 indicators include this level of disaggregation in the actual indicator phrasing (11.2.1, 11.7.1 and 11.7.2). In addition, data for some indicators such as 11.5.1 will benefit from Member States reporting disaggregated data by gender, age, persons with disability or below the national poverty line; already the online monitoring system accommodates such disaggregation options.

Some indicator monitoring guides have emphasized disaggregation, with interpretation of results also focusing on the implication of various levels of service to different groups. For example, the interpretation of indicator 11.7.1 has different implications to different groups, as outlined below:

- Indicator 11.7.1: The 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.

- A space may be open for use by all, but unsafe for women and young people.
- A space may be open for use by all by virtue of its being public, but inaccessible to persons with disability.

To deal with these issues, and in turn ensure that all elements are properly mainstreamed, the framework developed by UN-Habitat and partners is directional on mainstreaming elements. It deliberately seeks to collect data about safety, usability, affordability, for women, youth, and persons with disabilities.

Unlike aspects of gender, age and persons with disability, whose measurement must be integrated through disaggregation of data collection in various indicators, aspects of culture are considered in a stand-alone indicator. Indicator 11.4.1 seeks to measure total expenditure (public and private) per capita spent on the

preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation); level of government (national, regional and local and municipal); type of expenditure (operating expenditure and investment); and type of private funding (donations in kind, private non-profit sector and sponsorship). Measuring this indicator will thus attend to cultural issues in Goal 11. Recognizing that Culture is both a sector of activity and transversal, UNESCO in collaboration with various organizations and experts have been developing a complementary framework and suite of thematic indicators for culture in the SDGs across a number of goals and targets, with particular focus on Goal 11. More than 300 cities in the World Heritage List monitor the protection of their cultural heritage. In addition, the 180 cities of the UNESCO Creative Cities Network have committed to integrate culture and creativity in sustainable urban development strategies particularly Goal 11.

## 2.5 Emerging challenges from methodological developments

In general, monitoring and reporting on the Sustainable Development Goal 11 portends unique challenges unlike the other SDGs, even in countries with the most advanced statistical systems. As noted earlier, a concrete guidance on definitions, measurements, and unified standards is necessary to make sure that monitoring and reporting of urban agendas are undertaken using harmonized and mutually agreed concepts. For selected indicators, monitoring at the city level is key. For countries with many cities and those with limited human resources and funds, this poses a challenge of monitoring with a high demand for

building efficient and power systems to manage large volumes of data. Equally, consistency of reporting needs to be guaranteed by continuously measuring progress on the same set of cities to avoid reporting on random cities where data is easily available. To avoid this problem, member states are encouraged to adopt the concept of national sample of cities.

We present below a discussion of some of the other key challenges that are adversely affecting the implementation of urban-related SDGs.

### **2.5.1 Data disaggregation is a key principle for all SDGs**

Data disaggregation at national, subnational and local city levels is important to ensure that progress towards SDG 11 targets is inclusive, and that no one is left behind. To measure and monitor progress at all levels, detailed information about the most vulnerable populations is required. For SDG 11 and other urban-related indicators, data needs to be disaggregated in a way that is more useful than the traditional ways of data disaggregation. Data disaggregation for SDG 11 and other urban-related indicators requires a lot of methodological work; that would help develop standards, tools and protocols, and improve the quality of data disaggregates. There is thus need for coordination in data collection and triangulation that can be through a process involving all relevant stakeholders in countries. However, disaggregation has some shortcomings. Some of the most common of these include: cost implications relating to data collection and analysis at highly disaggregated units; data quality; pressure to collect more data; identifying representative sample sizes from aggregated populations; issues on confidentiality, transparency or accountability; and challenges associated

with comparability of data over time and across countries, particularly because some disaggregates are more comparable than others. It is, therefore, important that countries consult extensively with all relevant stakeholders while identifying the relevant levels of disaggregation that will help identify all the key markers of exclusion in their cities and urban centres.

### **2.5.2 The success of urban monitoring relies on strengthening capacities of cities and NSOs to track changes**

Despite their recognized importance in fostering sustainable development, cities in developing and developed countries are suffering from an acute lack of accurate, timely, and useful information. This hinders their capacity to develop sound and informed policies and actions, and to provide adequate services to their residents. To play their role effectively in sustainable development, cities require monitoring systems that can produce knowledge to assist in understanding and managing their social, environmental and economic landscapes. These systems can help to track progress towards achieving development goals, to identify setbacks to such progress and, in turn, to support formulation of better policies. Cities also require periodic assessments on their state of development, and to evaluate policy outcomes and the impact of specific plans and actions. However, according to the UN-Habitat Urban Indicators programme, over 60 per cent of local authorities recognize that they do not have appropriate means and tools to understand urban dynamics and challenges with accurate data and information. This means that in many cities around the world, planners and decision-makers are operating in an environment of uncertainty, allocating

resources to immediate and pressing issues rather than investing in progressive change over the long term. There is need to ensure that mechanisms are provided for cities to produce timely, relevant and accurate data for monitoring and reporting. This includes building the capacities of city authorities and NSOs to collect such data and enhancing the work of urban observatories.

It is likewise important for planners and decision-makers to be able to effectively pool different stakeholders' resources – including private sector's resources – for the effective management of natural and man-made hazards. Voluntary standards – by creating a common and neutral language – have been successfully used – especially at the level of cities – to leverage on the respective strengths of the business continuity, Central Statistics Offices, and administrations in the management of emergencies and in preserving the continuity of essential services.<sup>9</sup> ECE and UN-HABITAT are working with standards setting organizations in order to identify and assist cities in the implementation of existing relevant standards and in the development of comprehensive and certifiable international standards for urban resilience.<sup>10</sup>

### **2.5.3 Effective monitoring of the urban SDG demands functional links between national and local governments**

One of the key issues affecting the monitoring and implementation of urban-related SDGs at the national level is the lack of structured links and collaborative mechanisms between national and local government levels. An enabling environment focusing on the political, legal and institutional frameworks of

collaboration as well as financial support is needed for the achievement of SDG 11. A formalized coordination mechanism involving all data producers, with a clear mandate and specified role and responsibility at all levels is also required. At the city level, urban management and development processes involve many actors at different levels (political bodies, national, subnational and local). Similarly, these different stakeholders are involved in the production of data on various indicators required for monitoring progress towards SDG 11. All national statistical systems need to coordinate with local authorities and service providers to collect information at the city level, which is the unit of analysis for Goal 11.

#### **2.5.4 SDG11 monitoring requires development and adoption of institutional frameworks that integrate non-traditional data sources into mainstream statistics**

Countries are also challenged with the lack of supporting policy frameworks to guide the incorporation of newly emerging data sources into mainstream official statistics. These new sources include data generated using spatial analysis methods, citizen and civil society-generated data, as well as big data generated from various crowdsourcing platforms. Some of the new data sources generate massive amounts of urban statistics, which is sometimes almost instantaneously; for example, on air pollution, transport networks and traffic. But mechanisms for using such data as part of official statistics are constrained by the lack of understanding regarding their applicability, as well standards and analytical systems to guarantee quality controls and representativeness by reducing inherent bias in the production of data.

## **2.6 Emerging opportunities from methodological developments**

Despite the numerous challenges inherent to monitoring SDG 11, the experience so far has shown that there are many opportunities that can be leveraged for efficient monitoring in the next 12 years. Some of these opportunities include the following:

### **2.6.1 Focus on cities as an opportunity**

The shift in the world population from rural to urban over the three decades has made urban areas important drivers for the next phases of global development. Urban areas are at the centre of achievement of sustainable development goals due to the strong interlinkages with other global agendas. Development of a stand-alone goal on cities and the increased monitoring of cities as unique entities will provide, for the first time, a sound understanding of what cities offer as distinct from urban or rural areas. With global evidence tagged at the city level, many cities will have to learn best practices from others to avoid mistakes.

### **2.6.2 Commitment to methodological development for SDG 11 monitoring through partnerships**

The entire SDGs framework is built on the need to have smart partnerships with a wider reach. Goal 11 requires partnerships from international agencies, national governments, local governments and city leaders all working together. This mix also has roles for civil society, private sector, academia, NGOs, and urban dwellers. UN-Habitat and other custodian agencies are, for example, working with various

partners in the United Nations system, academia, the public as well as private sector organizations to develop and enhance methods for measuring various SDG 11 indicators.

### **2.6.3 Advances in technology and mass data generation from alternative sources**

Goal 11 targets and indicators monitoring benefit from several other global efforts (for example, the Global Human Settlement Layer, Global Urban Footprint), which are generating unprecedented amounts of urban data using new technologies such as remote sensing science. In general, advances in technology are promoting mass generation of information with fewer resources. These developments have also opened a new era of open source data – ranging from satellite imagery and mass data resources to big data, which can be quickly and easily analyzed at the city level at minimal cost. Big data, crowdsourcing and citizen participation in data generation have also made it very easy to generate usable and representative city data. Data generated from these sources are directly relevant to monitoring Goal 11 indicators, particularly the spatial indicators. The only challenge is acceptability and mainstreaming these data sources in official statistics and building the right set of skills and capacities to support their use in the most remote towns and cities in the effort to “leave no one behind”.

## **2.7 Experiences and lessons learnt**

Monitoring and reporting of SDG 11 presents major challenges that need to be tackled at global, national and local levels. Many countries acknowledge the challenges related to the implementation of SDG 11 and are requesting technical

support for effective monitoring and reporting. In the last two years, the custodian agencies have witnessed an increased demand from Member States and local governments for technical support related to building their capacities to collect, analyze and draw policy formulation from their local urban data. As a result, UN-Habitat and other custodian agencies have invested a significant amount of time and resources in supporting Member States to set up the required monitoring systems for Goal 11. Custodian agencies have developed new and relevant guides, materials and clarified definitions that are needed for global urban monitoring for SDG 11, in collaboration with various stakeholders.

A few urban-related SDG indicators require a new reporting territorial level—the city—as a unique entity of analysis. Several of the Goal 11 indicators must be collected and computed at city level although the monitoring will be done at the national level. Agreeing on an operational definition of a city from a statistical and spatial perspective has been a major preoccupation of the many expert group meetings that the

custodian agencies have organized in the last two years. This issue has also been a major factor in decisions of IAEG-SDGs on whether to reclassify some indicators from Tier III to Tier II. Following concerted rounds of discussions with partners and custodian agencies, two global definitions of cities are now available. These definitions will support the global monitoring and reporting of the performances of cities in a more systematic way. It is, however, important to note that a common definition does not mean that countries should change how they define a city or urban.

In response to the requests from Member States for advice on how to monitor numerous cities amidst a lack of resources, UN-Habitat along with other custodian agencies developed the concept of the national sample of cities. This sample is vital in ensuring that countries rely on a consistent set of cities to produce time series analysis and to measure national progress in a more structured manner.

UN-Habitat will continue working with local urban observatories worldwide

as the local interlocutors for urban data collection and feeding evidence directly into local urban polices and plans. Observatories in high- and middle-income countries have the resources, technical and financial, to sustain the roll out and implementation of SDG urban monitoring. New tools for enhancing their capacities and knowledge on SDGs monitoring have been shared. Regional workshops were organized to disseminate the new tools to urban observatories, and subsequent feedback was used to refine the tools.

The CPI (a flexible framework for the formulation, implementation and monitoring of policies and practices on sustainable development to increase prosperity levels in cities) can be leveraged for monitoring Goal 11 indicators as it integrates indicators for urban SDGs to accommodate in a single framework the environmental, social and economic components of city sustainability. Countries and cities that have adopted the CPI for SDGs monitoring and reporting of urban indicators are saving time and resources on national and global reporting demands.



## Notes

1. Available from SDG 11 metadata at: <https://unstats.un.org/sdgs/files/metadata-compilation/Metadata-Goal-11.pdf>
  2. Available from <https://unhabitat.org/wp-content/uploads/2016/02/SDG-Goal%2011%20Monitoring%20Framework%202025-02-16.pdf>
  3. Human settlements Indicators workshop on implementation of the Goal 11 indicators, UN-Habitat, 2017
  4. See national sample of cities document for more information -- <https://unhabitat.org/national-sample-of-cities/>
  5. <https://unhabitat.org/urban-knowledge/guo/>
  6. These include UNECE, ITU, CBD, FAO, UN-Women, ECA, CLAC, UNCCD, UN-Habitat, UNEP, UNEP-FI, UNFCCC, UNIDO, UNU-IAS, WMO and WTO.
  7. Available from [www.unecce.org/housing-and-land-management/united-4-smart-sustainable-cities-u4ssc.html](http://www.unecce.org/housing-and-land-management/united-4-smart-sustainable-cities-u4ssc.html)
  8. <https://unhabitat.org/bridging-the-gap-between-national-governments-partners-un-for-sdg-11/>
  9. [https://www.unecce.org/fileadmin/DAM/trade/Publications/ECE\\_TRADE\\_424\\_Standards\\_and\\_DRR.pdf](https://www.unecce.org/fileadmin/DAM/trade/Publications/ECE_TRADE_424_Standards_and_DRR.pdf)
  10. <http://www.isotc292online.org/organization/uncg/>
- i. <http://www.atlasofurbanexpansion.org/>
  - ii. <http://ghsl.jrc.ec.europa.eu/CFS.php>
  - iii. Available from: [https://drive.google.com/drive/folders/1i6BJ0Esnvazelo2fUFFZ\\_wiU-In0aY1u?usp=sharing](https://drive.google.com/drive/folders/1i6BJ0Esnvazelo2fUFFZ_wiU-In0aY1u?usp=sharing)





## Chapter 3

# Global Baseline Status of SDG 11 Targets and Indicators

*This chapter summarizes the baseline status of SDG 11 targets. Available data for each indicator, or from proxies is used to discuss the progress or lack thereof on each target. Ongoing initiatives towards monitoring SDG 11 from regional and other country-specific reports are discussed. For each of the targets, we highlight the prevailing opportunities, challenges and policy implications, as well as best practices in data collection, institutional support offered by UN-Habitat to countries and other emerging partnerships.*

### 3.1. Target 11.1: By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

**Indicator 11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing.**

#### Key messages

Three billion people will need housing by 2030.<sup>1</sup> The realization of adequate housing is part of basic human rights, and contributes to various economic, social and cultural aspects of development for individuals, households and communities. Conversely, inadequate housing impacts negatively on urban equity and inclusion, urban safety and livelihood opportunities, and cause negative health conditions. This indicator is a continuation of the MDGs with regards to the slum component that has been expanded to include informal settlements and adequate housing that is measured through housing affordability. With around 883 million urban dwellers living in slums and many others yet to be measured facing inadequate and unaffordable housing, this indicator is strongly associated with other social challenges such as low educational attainment, crime, and poor well-being.

#### Slum improvement

The proportion of the global urban population living in slums declined by 20% between 2000 and 2014.

**28%**  
IN 2000 TO  
**23%**  
IN 2014



#### Context

Housing is a basic human right recognized in many international instruments, key among them the universal declaration on human rights (article 25), the International Covenant on Economic, Social and Cultural Rights (article 11), the Convention on the Rights of the Child (article 27), the Convention on the Elimination of All Forms of Racial Discrimination (article 5), and the Convention on the Elimination of All Forms of Discrimination Against Women (article 14). The Global Strategy for Shelter to the Year 2000 and the enabling approach have dominated housing policies since Habitat II and the 1996 Habitat Agenda, which rests on two pillars: housing for all, and sustainable human settlements in an urbanizing world. Today more than 100 countries have a constitutional provision on the right to adequate housing. Inadequate housing impacts negatively on urban equity and inclusion, urban safety and livelihood opportunities, and causes negative health conditions. UN-Habitat promotes the Housing at the Center approach to improve access to adequate and affordable housing. The New Urban Agenda has prioritized the realization of this right:

***“We will foster the progressive realization of the right to adequate housing as a component of the right to an adequate standard of living ....”***

*NUA Paragraph 105*

**Data trends and Challenges**

The housing target is a continuation of the Millennium Development Goals (target 7D) with respect to slum prevention. Housing contributes to various economic, social and cultural aspects of development for individuals, households and communities.

The target is measured by the notion of deprivation in three fundamental forms: slums, informal settlements and inadequate housing. Data is available from UN-Habitat's urban indicators database, but mostly limited to the slum and housing informality components. The SDG 11.1.1 indicator adds inadequate housing to make this

indicator universal. It measures housing affordability by applying a harmonized definition based on the share of the household income that is spent on housing costs.

**The three elements of this indicator are measured as follows:****Slums**

Based on the MDGs methodology slum definition, a slum household is one in which the inhabitants suffer one or more of the following deprivations:

1. Lack of access to improved water source.
2. Lack of access to improved sanitation facilities.
3. Lack of sufficient living area.
4. Lack of housing durability.
5. Lack of security of tenure.

By extension, the term "slum dweller" refers to a person living in a household that lacks any of the above attributes (UN-Habitat, 2003a).

**Informal settlements**

Informal settlements are found in the developing and developed worlds. Similarly, informal housing units are not poverty's peculiarity, but they belong to all income levels in many contexts. Therefore, informal settlements can be defined as residential areas where:<sup>i</sup>

1. Inhabitants have no security of tenure vis-à-vis the land or dwellings they inhabit, with modalities ranging from squatting to informal rental housing.
2. The neighbourhoods usually lack, or are cut off from, basic services and formal city infrastructure.
3. The housing may not comply with current planning and building regulations, is often situated in geographically and environmentally hazardous areas, and may lack a municipal permit.

Informal settlements can result from real estate speculation practices that do not necessarily adhere to urban codes, making them poorly planned, and unauthorized. Slums are the poorest and most dilapidated form of informal settlements.

**Inadequate housing**

The United Nations Committee on Economic, Social and Cultural Rights distinguishes seven elements which constitute adequate housing:

1. Security of tenure;
2. Availability of services, materials, and infrastructure;
3. Affordability;
4. Accessibility;
5. Habitability;
6. Location;
7. Cultural adequacy. In the human rights framework, every right creates a corresponding duty on the part of the government to respect, protect, and fulfill <sup>ii</sup>

Deprivations in one or several of these elements are used to define three kinds of housing situations: slums, informal settlements and inadequate housing as summarized in table 2. These situations form the monitoring framework for tracking progress towards the SDG 11 housing target 11.1 as defined by indicator 11.1.1: *Proportion of urban population living in slums, informal settlements or inadequate housing.*

**Table 3. Criteria for defining slums, informal settlements and inadequate housing**

Evaluation criteria	Slums	Informal Settlements	Inadequate Housing
Access to water	X	X	X
Access to sanitation	X	X	X
Sufficient living area, overcrowding	X		X
Structural quality, durability and location	X	X	X
Security of tenure	X	X	X
Affordability			X
Accessibility			X
Cultural adequacy			X

For SDG indicator 11.1.1, experts have agreed that the qualifier of affordability can be used as a proxy indicator to measure the levels of adequacy of housing. In this regard, housing affordability is also a suitable means of measuring housing inadequacy in a more encompassing manner.

To avoid double or triple counting on the three elements that constitute this indicator, experts have recommended that slums and informal settlements are to be

combined into a single measurement. The element of inadequate housing would be reported separately.

### Slums

UN-Habitat latest data indicates that between 2000 and 2014 the proportion of the global urban population living in slums decreased from 28 to 23 per cent, with observed declines for all regions except Western Asia.

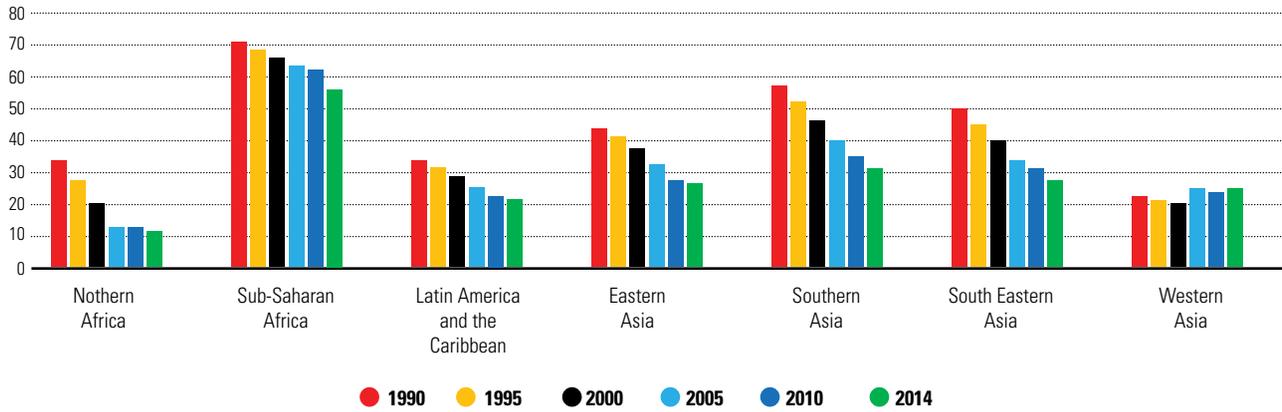
The period 1990–2015 was characterized by relatively high rates of average annual urban population change, with global averages estimated at 2.2 per cent. Except for Latin America and the Caribbean (LAC), all subregions with significant slum prevalence recorded higher slum growth than the global urban population change average, with the highest rates recorded in sub-Saharan Africa (SSA) at 3.9 per cent and South-East Asia at 3.0 per cent.<sup>iii</sup> As a result, the absolute numbers of people living in slums globally increased from an estimated 803 million in year 2000 to 883 million in 2014. As of 2018, conservative estimates place the population living in slums at 1 billion, with higher numbers recorded in the fast urbanizing subregions. For example, despite a decline in the proportion of population living in slums from 65 per cent to 56 per cent between 2000 and 2015, SSA experienced a high increase in absolute number of slum dwellers over the same period, estimated at 72 million new slum dwellers. Similar trends were observed in South-East Asia, East Asia, West Asia and South Asia. An exception to these trends were Northern Africa and LAC that recorded low annual urban population change and net decrease in the proportion of population living in slums and actual number of slum dwellers (see figure 4). In 2014, the bulk of populations living in slum-like conditions was in three major regions—Latin America and Caribbean (105 million), sub-Saharan Africa (210 million) and East and South-Eastern Asia (443 million).

## Box 6. Definition of Affordable Housing

Affordable housing is generally defined as that which is adequate in quality and location and is not so expensive that it prohibits its occupants from meeting other basic living costs or threatens their enjoyments of basic human rights. Housing affordability is affected by many factors including capital variables such as land, infrastructure and building materials; and occupational variables such as land leases, service costs and interest rates. However, when it comes to measuring affordability there are three common measures which fall into two components: housing costs and household income. These measures are house price-to-income ratio, which is calculated by dividing the median house price by the median household income. This measure shows the number of annual median salaries it takes to buy a median priced house. Countries with high land prices and construction costs tend to have high house price-to-income ratios, but also low-income countries with high housing market distortions.

The second measure under this category is calculated by dividing the median annual rent by the median annual renter household income. The World Bank and UN-Habitat have defined a cut-off point at which owner-occupied or rental housing is deemed unaffordable, which has been used for tracking housing affordability over time as part of the agency's Urban Indicators Programme. Housing is generally deemed affordable when a household spends less than 30 per cent of their income on housing-related expenses, such as mortgage repayments (owners), rent payments (renters), and direct operational expenses such as taxes, insurance and service payments.

**Figure 3. Proportion of urban population living in slums by subregion, 1990–2014**

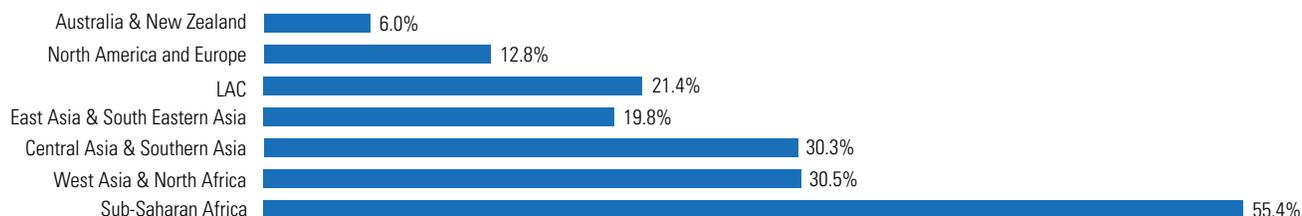


Data source: UN-Habitat, 2018

**Figure 4. Changes in slum population by region 1990-2014**



Data source: UN-Habitat, 2018

**Figure 5. Average housing affordability by region**

Source: Urban Expansion Programme, New York University, Lincoln Institute and UN-Habitat, 2016

## Inadequate housing

Housing affordability has become a global crisis affecting people in equal measures in low and high income countries. Over the past 50 years, housing prices in high-income countries increased three times more than the price of other basic services.<sup>2</sup> In Africa, urban residents pay 55 percent more for housing than in other regions.<sup>3</sup> Based on data from 145 countries,<sup>4</sup> affordability can vary across different countries and sometimes in urban areas within the same country (see Figure 5). For example, unaffordability rates in Africa range from 1.5 per cent in Mauritius to 100 per cent in Sierra Leone; while in Europe, Malta has the lowest proportion of population without access to affordable housing (1.1 per cent) compared with Greece, the highest, with 40.9 per cent.

The trends highlighted above portray high variations in interregional access to adequate and affordable housing and inter and intraregional levels of housing affordability, which affects populations differently. These variations are informed by factors such as the levels of country development status, infrastructure development and average national as well as household incomes.

UN-Habitat, UN partner agencies e.g UNEP, UNDP, Regional Commissions and other partners continue to work on aspects

related to adequate and sustainable housing. This includes advocating for the fact that ‘affordable housing’ is not opposed to ‘sustainable housing’, and that housing adequacy at times of climate change and resource scarcities needs to factor in low-emission, resource efficient and resilient buildings and construction.

### **Awareness:**

Building on the previous work done by UN-Habitat and partners under the MDG era and using the housing guidelines in various fora (for example Habitat III conference, WUF, WDF), including capacity development activities conducted in countries and cities, UN-Habitat raised awareness about this indicator. Raising awareness ensured that national statistical organizations, relevant line ministries and departments, other levels of government involved in SDG monitoring and localization—as well as non-traditional partners such as the private sector, academia, and civil society—have better knowledge on this indicator to support policy formulation.

### **Policy:**

Successful achievement of many targets in the 2030 Agenda have direct implications on the quality of life of slum dwellers, who represent an important proportion of countries’ urban population. These changes contribute to poverty

reduction and to the attainment of other economic, social and cultural benefits associated with access to adequate housing. The upgrading and prevention of slums and affordable housing are crucial components for the Agenda’s principle of “leave no one behind.” For that purpose, more effort and cooperation are needed at the global, national and local levels to collect relevant data on all elements of this indicator, which still remains a major challenge so far, particularly in the adequate housing component. It has been widely documented that people living in adequate homes have better health and higher chances to improve their human capital and seize the opportunities that urbanization offers. A housing sector that performs well acts as a “development multiplier” benefiting complementary industries, contributing to economic development, employment generation, service provision and overall poverty reduction.<sup>iv</sup> Conversely, lack of adequate housing contributes significantly to marginalization of populations and different forms of exclusion in cities. According to UN-Habitat’s City Prosperity Initiative, inadequate housing affects urban equity and inclusion, urban safety and livelihood opportunities, urban connectivity and provision of public spaces—all of which hinder a city’s prosperity.<sup>v</sup>

Housing inadequacy has also been associated with other social challenges

such as low educational attainment, crime, poor well-being, and problems of social cohesion.<sup>vi</sup> The costs incurred by bad housing and poor neighbourhoods vary greatly and, although difficult to measure, there are indications they erode the quality of life, and increase poverty and homelessness. This indicator is an expression of inequality, and stronger connection should be established with inequality measurements such as the Gini coefficient, the Palma indicator and equal access to services.

Although context specific, housing policies and strategies with an active role of government have proven to be effective in achieving the housing target. This includes the “Housing at the Centre” approach, tenure security, social housing, subsidies, rental housing, land availability, slum upgrading, sites and services. The approach, which comes to position housing at the centre of national and local urban agendas, aims to shift the focus from simply building houses to a holistic framework for housing development, orchestrated with urban planning practice and placing people and human rights at the forefront of urban sustainable development.

### **Partnerships:**

Partnerships have contributed to hastening actions and efforts at local and national levels to gather data on the indicator 11.1.1. Collaboration between several organizations and institutions including UN-Habitat, UNEP, UNDP, Regional Commissions, Cities Alliance, Slum dwellers International, and the World Bank, have been critical for its monitoring. Current efforts are improving the indicator’s measurement, its reporting mechanisms and the connection to policy dialogue at the country level. For example, UN-Habitat has partnered with universities

and research institutions to improve ways in which data on slum populations can be collected and analyzed by identifying optimal ways countries can distinguish slum from non-slum urban areas in national surveys.

### **Programmes and Projects:**

Global initiatives such as the Participatory Slum Upgrading Programme, the Global Housing Strategy and other community led projects have contributed to the crafting and testing of methodologies developed for monitoring and reporting on indicator 11.1.1. The programmes have also offered national and subnational governments opportunities to build their monitoring capacities to formulate more informed policies.

A good example is the Know Your City (KYC) Campaign, a slum profiling programme supported by Slum Dwellers International (SDI), the United Cities and Local Governments of Africa (UCLG-A) and Cities Alliance. KYC unites organized slum dwellers and local governments in partnerships anchored by community-led slum profiling, enumeration, and mapping. The campaign serves as a powerful engine for community organization, participatory local governance, partnership building, and collective action to enhance inclusive city planning and management. It also integrates programmes which encourage dialogue between the youth and decision makers about city futures. Through the campaign 7,712 slums across 224 cities in Africa, Asia and Latin America have been profiled.<sup>vii, viii</sup>

### **Financing:**

More financial resources are needed to test the new methods and build the capacities of cities and local authorities to collect data on housing and slums. These

additional funds will help expand efforts to increase the quality and quantity of data worldwide, and to ensure the proper disaggregation of information.

### **Capacity development:**

Global definitions for slums were developed and used to report to MDG target 7d for over 12 years. With the SDGs, slums are still being monitored under indicator 11.1.1 along with an affordability component to ensure this indicator is universal. Universality was introduced by adding two other components on the MDG indicator that monitor informality and inadequate housing. These two new components capture the universality of housing inadequacy in all countries. As a result, UN-Habitat, in its custodian role of this indicator, has revised and updated existing metadata used for MDG reporting and defined new concepts that cover informality and inadequate housing, which now forms part of the new metadata.<sup>5</sup> Using these tools, UN-Habitat, Regional Commissions and partners have been developing the capacity of mainly local and national governments, but also national statistical organizations, universities, research institutions, civil society teams and communities on how to measure this indicator. Taking advantage of several international fora such as Habitat III in Quito, the World Urban Forum 9 in Kuala Lumpur, the training of professionals, NGO representatives, academia, local government officials and other key stakeholders have been conducted in collecting data on this indicator. As of 2017, data on this combined indicator is available for 110 countries, mostly from developing regions that already had systems that were generating data for slums indicator during the MDGs era.

**Technology:**

Mobile phone connectivity and penetration, especially the smart version, is increasing globally, with more than 5 billion people expected to be smartphone users worldwide by 2019. Taking the opportunity of available technology and smartphones,

the Housing and Slum Upgrading Programme of UN-Habitat has developed SHERPA, an assessment tool of housing project sustainability based on data collection using mobile devices (see box 8).

Furthermore, there are ongoing initiatives to use geospatial technologies to identify

slums physically in urban areas, followed by targeted ground-truthing (**see detailed explanation in box 2**). Similarly, an increasing number of countries have used household expenditure surveys to monitor housing affordability and establish the necessary links with poverty and socioeconomic development.

### Box 7. Innovations in implementing SDG11.1 with a bottom-up and inclusive approach

SHERPA, a personal guide for sustainable development, is a tool for carrying out comprehensive assessments of the sustainability of housing projects. It assesses housing at the household, neighbourhood and territory scales, as well as the participative processes involved in the inception and design of the housing project. SHERPA then delivers a rating based on the economic, environmental, cultural and social sustainability of the project. It scores responses according to 12 indicators which are aligned to the four pillars of sustainability: social, economic, environmental and cultural. The innovative aspect of SHERPA is that it is open source, free, available in three languages, and is user friendly. Plus, it can be used by non-experts in any context via mobile devices. SHERPA can be applied to the vast bulk of informal and emergent forms of housing which are in dire need to be more sustainable, as well as can complement housing interventions in disaster recovery context. The tool gathers data and solutions from all users and will eventually be able to act as a repository for sustainable housing practices as a one-stop shop for people everywhere, for free.

### Box 8. A new way to monitor and report on slums

With the adoption of SDG 11 on cities and human settlements, Member States acknowledged the MDGs' slum monitoring efforts and agreed to continue monitoring the proportion of people who live in slums and other types of informal settlements or those facing inadequate housing for the next 15 years. This renewed mandate opens a window for improved data collection and analysis of slums and the needs of the people living in these neighbourhoods. Global monitoring of this indicator remains a key issue given that the world is increasingly urbanizing with high levels of poverty and exclusion. It is very important to make people who live in slums count. Despite technological advances slums are often invisible in official statistics, frequently featuring as blank areas on official maps and generally hidden within urban averages. Yet effective and responsive provision of urban services requires information on locations in which people live at the level of the entire city, particularly slum dwellers who face unique challenges which relate to increased social vulnerability and exposure to hazards. Differentiating urban spaces as either slum or non-slum is instrumental for identifying the specific needs of slum residents.

The heterogeneity of slums and resulting lack of a global definition of a "slum area" makes accounting for urban needs in slums difficult. With one in eight people in the world living in slums, the development of such definition or the adoption of a spatial technique is essential for progressing towards SDG11.1. This may require combining the current deprivation-based definition of a "slum household" with a spatial identification of "slum areas" by directly attaching labels to enumeration areas (EA) in national sampling frames.

Methodologically, such an approach would start with innovative digital-based satellite imagery analysis, coupled with community ground-truthing and local observation, and participatory slum mapping. Although research is still ongoing, machine-learning for automated slum area recognition has yielded promising results and in several locations participatory slum mapping approaches have churned out detailed contextual data which enabled disaggregated analyses as well as community capacity-building. This would be followed by slum mapping at the EA level, based on existing census data and the current "slum household" definition. Also, the new slum area definitions could be incorporated into the upcoming 2020 Round Census by tagging each EA as slum, non-slum or rural.

This methodological approach would be instrumental for surveys and other data collection processes in low- and middle-income countries to provide differentiated insights regarding access to basic services, housing, and multiple levels of deprivation across slum and non-slum areas. It would, thus, ultimately enhance the efficiency of service provision by, for example, tailoring health-care provision to the slum-specific context (as opposed to less deprived neighbourhoods) and improve the visibility of currently marginalized urban communities living in informal settlements.

Reference: <https://unhabitat.org/distinguishing-slum-from-non-slum-areas-to-identify-occupants-issues/>

### 3.2 Target 11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

**Indicator 11.2.1** “Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities.”

#### Key messages

A good transport system is synonymous with the growth of many urban economies and the quality of life found in cities. Sustainable transport is a key ingredient for the achievement of most SDGs, particularly those related to education, food security, health, energy, infrastructure, and environment. Sustainable transport has to do with safety, affordability, accessibility, resilience, climate resilience and efficiency (including resource efficiency and the AVOID, SHIFT, IMPROVE approach for increased environmental sustainability). Although global transport data is collected on topics such as spatial access, usage, road networks, safety, passenger and freight volumes, transport injuries, fatalities, passenger and freight volumes and frequency of transport, greater efforts are needed to measure “convenient access,” as proposed by the indicator, which is connected to the functionality and prosperity of urban centres. Data on the overall access to arterial roads, a proxy of this indicator, shows that globally about 70 per cent of the population in urban centres in 2015 had good access to this type of road. A good transport system is synonymous with the growth of many urban economies and the quality of life found in cities.



In Asia, Europe, North America, Latin America and the Caribbean the number of people using public transport between 2001 and 2014 rose by nearly 20 per cent. A good transport system is synonymous with the growth of many urban economies and the quality of life found in cities. The urban poor commute over 20 km and sometimes take 3–4 hours per day.

#### Context

The role of transport in sustainable development was first recognized at the 1992 United Nations Earth Summit and reinforced in its outcome document, Agenda 21. During the 1997 special session on the review of five years of implementation of the agenda, the United Nations General Assembly identified transport as the largest end user of energy in developed countries and the fastest growing one in most developing countries. The General Assembly also noted, “Over the next twenty years, transportation is expected to be the major driving force behind a growing world demand for energy.” Subsequent global agendas have increasingly reinforced the significance of transport to global and local development. For example, the outcome document of the 10th Anniversary of the World Summit on Sustainable Development provided different anchor points for a mobility policy from which environment and health could benefit.

World leaders at the 2012 United Nations Conference on Sustainable Development (Rio +20) noted: “The Future We Want” recognized transport and mobility as central to sustainable development and emphasized the important role of municipal governments in setting a vision for sustainable cities.<sup>ix</sup> Many countries are signatories to most of the global agendas and have domesticated

various frameworks by developing local policies and guidelines for attainment of sustainable transport-related targets.

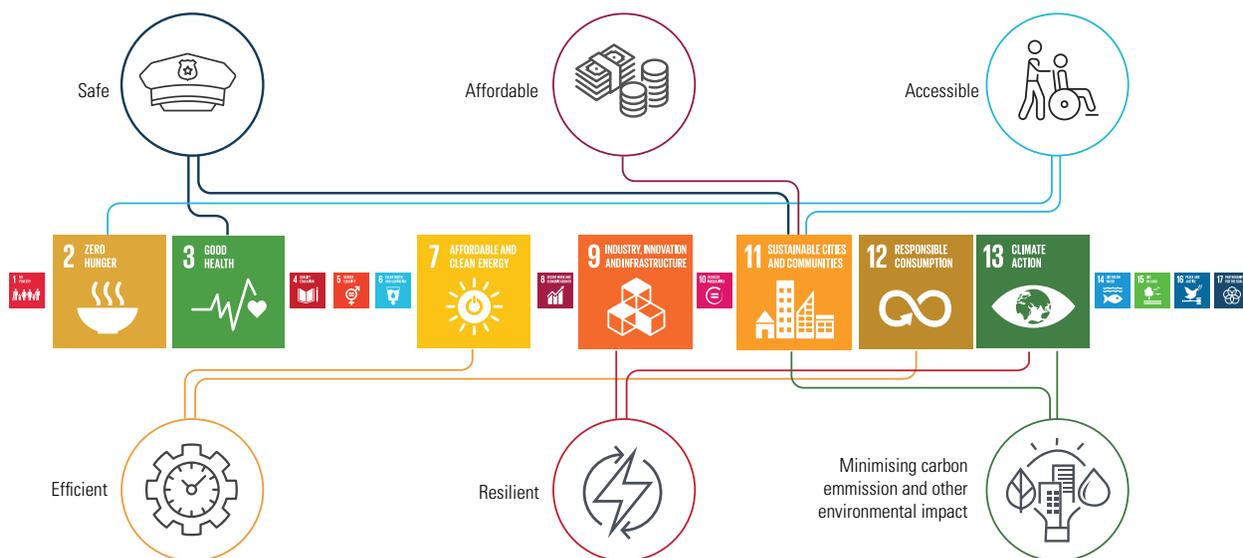
Sustainable transport is not recognized with a stand-alone goal, but is mainstreamed across at least seven SDGs, particularly those related to education, food security, health, energy, infrastructure and cities. However, for urban transport to contribute substantially to the attainment of the SDGs, it should adopt urban sustainable models which will produce social, economic and environmental benefits enjoyable by all today and for future generations. Different proposals have been made to what constitutes sustainable transport, with a great degree of agreement that it must be: safe, affordable, accessible, efficient, resilient, and climate responsive<sup>x</sup> (see figure 6). In addition, according to the 2017 global mobility report,<sup>10</sup> mobility should be equitable in access, efficient, safe, and climate responsive.

- **Universal Access** – Manifests through equity and inclusivity of the system. This requires distributional considerations and places a minimum value on everyone’s travel needs, providing all, including the vulnerable, women, young, old, and disabled, in urban and rural areas, with at least some basic level of access to transport services in a way that leaves no one behind. Issues of public-transit-related crimes are identified as key focus areas under this element, which particularly constrain women’s mobility and which, in turn, should be tackled.
- **Efficiency** – Transport demand must be met effectively and at the least possible cost. Transport efficiency applied in a macroeconomic perspective implies the optimization of resources—energy, technology, space, institutions and regulations—to generate an efficient transport system or network.

- **Safety** – There is need to improve the safety of mobility across all modes of transport by avoiding fatalities, injuries, and crashes from transport mishaps.
- **Green Mobility** - clean systems of transport must address climate change through mitigation and adaptation, and to reduce both air and noise pollution. They should promote the concepts of AVOID (good urban planning which promotes mixed use, transit oriented and compact cities), SHIFT (multi-modality, including public and non-motorised transport), and IMPROVE (use of cleaner fuels and vehicles).

For the urban goals, SDG indicator 11.2.1 under target 11.2: “Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities” focuses on convenient access. This indicator addresses all the elements of sustainable transport as a proxy by virtue of its call for provision of “convenient access to public transport”

**Figure 6. Features of sustainable transport and linkage to SDGs**



Source: Modified from the Secretary-General’s High-level Advisory Group on Sustainable Transport (2016). Mobilizing sustainable transport for development.

### Data trends and Challenges:

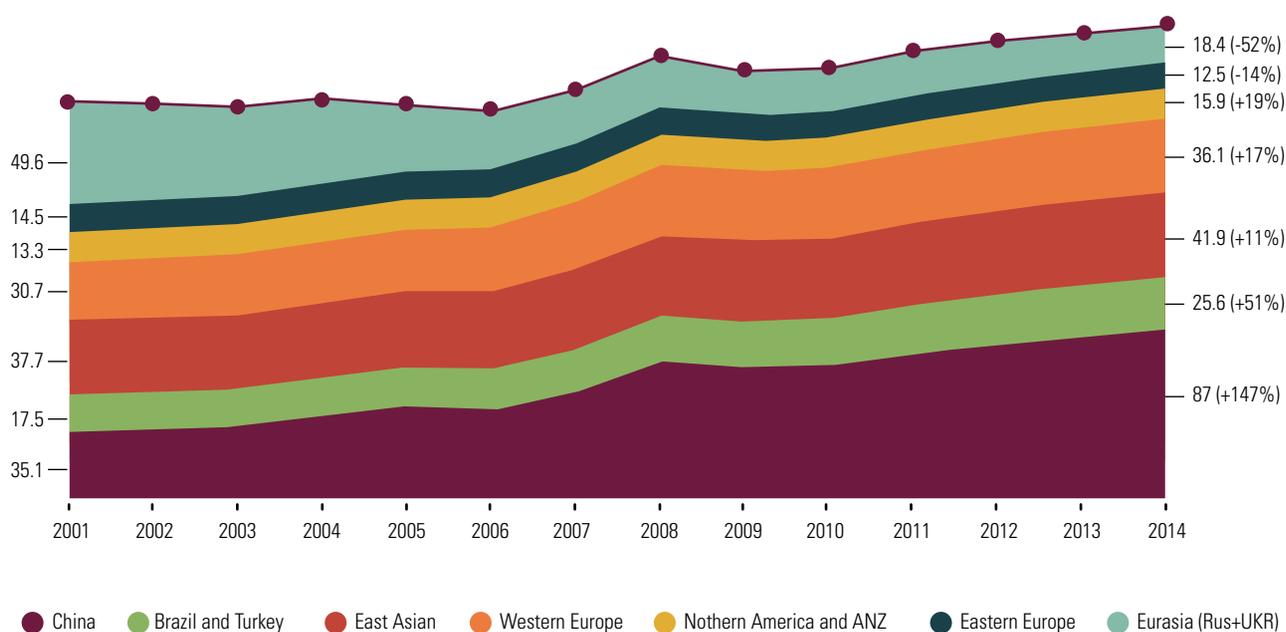
Global transport data has been collected at urban and national level for several domains ranging from spatial access, usage, road networks, safety, passenger and freight volumes, transport injuries and fatalities, to frequency of transport, indicating a rapid rate of transition in the growth and understanding of the transport sector globally. For example, it is projected that by 2030, annual global passenger traffic for all modes will exceed 80 trillion passenger-kilometres—a 50 per cent increase compared with 2015 estimates, while an additional 1.2 billion cars will be on the roads by 2030—double the total in 2017.<sup>xii</sup> Indeed, such exponential growth of transport will have significant socioeconomic impacts on the livelihoods for billions of urban dwellers, and significantly affect the urban environment. Elsewhere, data also indicates that

transport has greatly contributed to decreasing urban densities over the decades as cities accommodate motorized transport and build low density housing on the outskirts. This has resulted in increased trip distances as well as complexity of journeys, as well as increased costs associated with the development of the transport systems to connect the newly growing areas. Essentially, despite substantial investments in development of transport infrastructure, congestion has been worsening and average traffic speeds have been declining. This has harmed urban economies as well as the lives of all city dwellers. The poor, in particular, are forced to walk or to travel in crowded streets or slow-moving, overcrowded buses<sup>xiii</sup> (see box 9).

Latest data from 38 countries from Asia, Europe, LAC, and North America depict a general increase in the global public

transport demand between 2001 and 2014, estimated at nearly one fifth. Some subregions, however, recorded declining usage of public transport (see figure 7). China recorded the highest increase in the number of journeys via public transport over the period (147 per cent increase), followed by Brazil and Turkey (51 per cent). On the other hand, the Eurasian and Eastern Europe subregion recorded a net decrease in public transport journeys, estimated at 52 per cent and 14 per cent respectively. These trends are closely related to population growth dynamics as well as shifting trends in public transport modes. UN-Habitat together with the International Association of Public Transport are developing a global reporting tool that will help to gather relevant data for SDG 11.2.1. This tool will collect data on transit system performance directly from public transport authorities and operators.

**Figure 7. Evolution in the total number of public transport journeys**



The transport sector is responsible for approximately 23 per cent of energy-related greenhouse gas emissions, and 3.5 million premature deaths resulting from outdoor air pollution annually. This is linked to, among other things substandard vehicle's emissions. Nearly 1 billion people worldwide still lack adequate access to road networks, which increase isolation and marginalization and deepen social inequities.<sup>xiv, xv</sup>

The need to provide access to safe transport systems stems from a worrying global trend on transport-related fatalities. According to the 2017 global mobility report, road transport claims the bulk of transport-related fatalities worldwide: it accounts for 97 per cent of the deaths and 93 per cent of the costs and disabilities. On roads, the fatality risk for motorcyclists

is 20 times higher than for car occupants, followed by cycling and walking, with 7 to 9 times higher risk than car travel, respectively. Bus occupants are 10 times safer than those in cars. Globally, 40–50 per cent of traffic fatalities occur in urban areas. Evidence suggests that the highest fatality rates occur in cities in the developing world—the proportion of fatalities in urban areas is high and tends to be higher in low- and middle- income countries.<sup>xvi</sup>

As the “custodian agency” for SDG target 11.2 on access to public transport, UN-Habitat continues to work with stakeholders to establish an enabling environment to support the refinement of the concepts and methodology for SDG indicator 11.2.1<sup>6</sup> monitoring and reporting. Other efforts include working with

stakeholders to establish consensus on data reporting platforms, capacity-building and engagements with national statistical offices as well as national and local governments, and transport authorities.

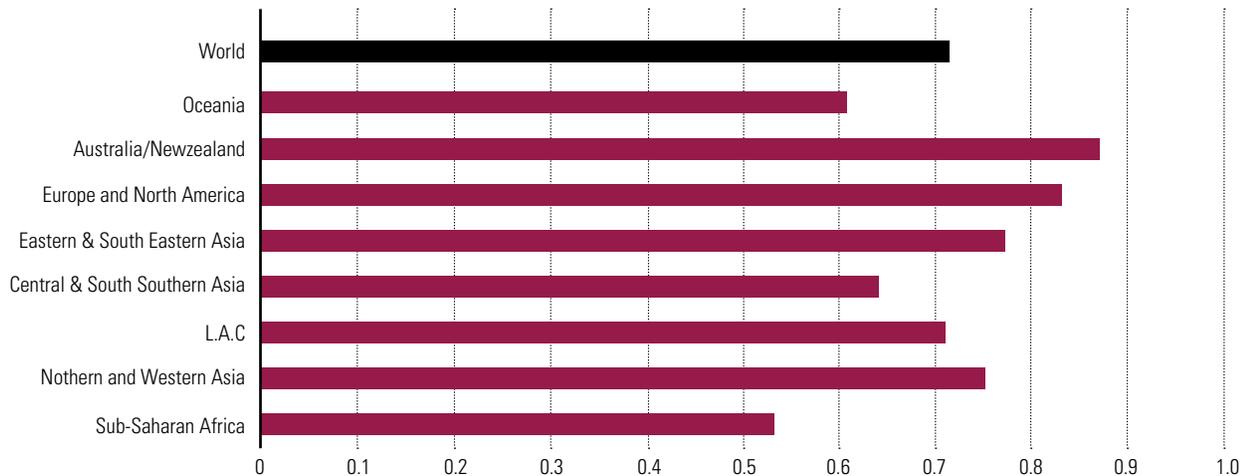
Some of the key principles on methodology agreed upon to define and operationalize “convenient access” further include the need to define coverage areas around public transport stops. Experts suggest creating a buffer or service area around the designated stop of the public transport within a 500-metre walking distance. Countries with more advanced systems of data collection may wish to conduct an entire network analysis within the same buffer, but paying attention to the street network, as part of a physical accessibility component.<sup>7</sup> They can also adapt to the transit system separating non-rapid transit (the conventional bus) from rapid transit (the metro light rail, Bus Rapid Transit -BRT, etc) at a 1.000-metre walking distance.<sup>8</sup> Experts also proposed to consider including formal and informal transport systems; yet, in many countries, there is no clear way of defining stops for informal transport.<sup>9</sup> It is also suggested to disaggregate information to the greatest extent possible when reporting,<sup>10</sup> although this requires major efforts (mainly surveys) which are still lacking in most cities.

Convenient access is a major factor that affects the functionality and prosperity of urban centres, including the environmental impacts through urban mobility pollution-related sources. The share of population with access to public transport depends on several factors. These include the number of available public transport stops and how they are distributed, the clustering of population close to stops, and the overall density and distribution of the street network. As a proxy to measure convenient access to public transport, data on overall access

## Box 9. Poverty and sustainable transport

In developing countries, a high proportion of the poor walk or use non-motorized transport, particularly for journeys less than 5–8 km. For many cities, there are few sidewalks and pedestrians have to share crowded roads with motorized traffic. Although cycling may be relatively inexpensive, it is often difficult and potentially dangerous, with few cycleways or lanes. In the parts of the city where the poor live, roads are often unpaved, poorly drained and maintained. A study in 18 African cities found that people devoted 8–15 per cent of their total household expenditure to transport, with the poor spending 4–10 per cent of income on transport. Actual spending patterns on transport are, however, complex and often localized. Travel times to and from work vary greatly between cities, averaging about one hour per day. In many cities, a substantial proportion of the poor live in suburban areas (partly because of involuntary resettlement and informal settlements). They face long and expensive journeys to work, often over 20 km and sometimes taking 3–4 hours per day commuting. Women tend to work closer to home than men. With shorter journeys, they are more likely to walk. However, women have more complex journey patterns and are at a disadvantage when living in peripheral urban areas because of the poor frequency of public transport. People with disabilities suffer a wide range of issues when travelling, including obstructed and dangerous sidewalks. They may suffer abuse and difficulties when travelling on public transport. Transport operators may refuse concessionary fares (a problem also experienced by students).

Source: Starkey, P., J. Hine (2014). *Poverty and sustainable transport: How transport affects poor people with policy implications for poverty reduction, A literature review.* UN-Habitat.

**Figure 8. Urban share of area within walking distance of all arterial roads (2015)**

Source: Global urban indicators database 2015: UN-Habitat

to arterial roads by walkability was analyzed for the period 1990–2015 and demonstrated that globally about 70 per cent of the population in urban centres in 2015 had a good access to arterial roads (see figure 8). This percentage varies from less than 30 per cent in selected cities from developing countries to over 90 per cent among cities from more developed countries. More interesting global analysis on availability (regularity of services) and affordability of transport on these arterials roads networks will help clarify questions on how convenient the public transport is in the coming years.

#### **Awareness:**

Through the guidelines and metadata developed, plus the meetings organized at various fora (such as WUF, WDF) and several capacity development activities conducted in countries, UN-Habitat and partners raised awareness about this indicator. This has ensured that national statistical organizations, relevant line ministries and departments, and other

levels of government involved in SDGs monitoring and localization, as well as non-traditional partners such as private sector, academia, and civil society, can all contribute to the efficient monitoring and reporting over the next 2–3 years. Laying this excellent foundation is key to sustaining the monitoring and reporting needs for the next 12 years.

#### **Policy:**

The growth and expansion of the transport sector is synonymous with the growth of many urban economies. Many prosperous cities have developed or transformed their transport systems from traditional to sustainable and smart systems. Sustainable transport systems offer social, economic and environmental returns that support the goals of Agenda 2030. Given that the transport system is a space where people spend significant amounts of time every day, governments and city decision makers need to consider comfort and safety issues as well as conditions of dignity for users. Leaving no-one behind

in the context of sustainable transport means that in the coming decades, transport systems that are inclusive, integrated, gender-sensitive and those that match people's wishes should be built.<sup>xvii</sup> Enhancing access to efficient transport systems to all will, therefore, contribute significantly to reducing poverty, increased incomes and productivity, encourage greater equity, enhance access to services, improved quality of life, and collective development. Increased safety will reduce injuries, deaths and economic losses from traffic accidents and increase usability of public means of transport by the most marginalized groups such as women, children, and persons with disabilities. It will also increase the safety of those working in the transport sector. Connecting marginalized communities such as the urban poor to efficient public transport will significantly increase their access to opportunities, and in turn enhance their connectivity with the rest of the city. For continued enjoyment of these benefits, (urban) transport infrastructure should be resilient to climate change.

Countries have a duty to put in place systems for enhancing access to efficient transport, such as long-term frameworks on development and policies on safety, and affordability. They also have a duty to ensure that adequate resources are allocated for development of such systems, including data collection and inclusive planning processes with a focus on road-users. Investments in the transport sector are major and last for decades, hugely informing urban patterns and interactions. This demands high levels of multi-sector engagement and understanding of prevailing conditions prior to investing in the sector. In turn, this calls for countries to invest heavily in data generation, monitoring and reporting.<sup>xviii</sup> This requires a broad coalition of stakeholders—from individuals, industry, policy and research institutes, local and national governments, and sector organizations—to engage, challenge the status quo, and push for real progress. Transport systems will need to be examined in a holistic manner, at a scale commensurate with the size of the challenges.<sup>xix</sup>

Appropriate policy interventions are urgently needed to support the roll-out of affordable, economically viable, safe, smart, socially acceptable and environmentally sound and resilient transport systems. These policy interventions need to be based on sound statistics and policy development tools. Policy incentives and investments need to be targeted at improving and expanding existing transport infrastructure, and at establishing integrated public transport systems, including bus rapid transit and light rail, particularly within and between urban areas, and facilitating mobility in rural-urban corridors. Policies need synchronizing and articulating with urban planning and design schemes and

regulatory frameworks that propose mixed-land uses, higher densities for better accessibility, proximity, and walkability/ active mobility.

#### **Partnerships:**

Over the last decade, several global initiatives on transport and mobility have been set up, which will contribute substantially to tracking progress towards indicator 11.2.1. Some of the key ones include the following:

- **The Secretary-General’s High-Level Advisory Group on Sustainable Transport** – whose role is to provide recommendations on sustainable transport actionable at global, national, local and sector levels; including identification of practical ways to unlock the potential of sustainable transport to contribute to poverty alleviation, sustainable growth and sustainable urbanization.
- **The Partnership on Sustainable, Low Carbon Transport(SLoCaT)** - a multi-stakeholder partnership of more than 90 organizations that promotes integration of sustainable transport

into global policies on sustainable development and climate change.

- **Global Partnership for Sustainable Transport** – a global, business and industry-led, multi-modal, strategic, action-oriented, multi-stakeholder platform promoting public-private partnerships for implementation of United Nations transport-related declarations, resolutions and other recommendations at national, regional and international levels.
- **Sustainability Mobility for All™** – a global network of stakeholders in the transport sector that are directly supporting collective action towards implementation of the SDGs and transformation of the transport sector. This network is supporting the collection and dissemination of data on four transport indicators, which are directly relevant to SDG 11.2.1 monitoring: universal access, efficiency, safety and green mobility. Table 3 provides a summary of the attributes used to measure each indicator.

UN-Habitat, as a custodian agency for this indicator, has organized in collaboration with partners and

### **Box 10. Investing in the Right Transport Systems**

Despite daily progress in cities across the globe investment decisions are still being made at the international, national, local, and individual levels that threaten to lock new and existing cities into unsustainable transport patterns. Because driving a car is what most policymakers experience on a daily basis, building more or wider roads is oftentimes considered as a transport solution. Examples of sprawl and congestion are numerous in the developed world. This “business as usual” approach comes at a high cost for people, economies, and the planet. Sustainable transport decisions must be scaled up and expanded so that cities do not get locked into infrastructure that pollutes, generates economic loss, limits opportunities and endangers lives. Recognizing how unsustainable transport affects urbanization, some cities are now investing heavily in mass transit and acting to limit car sales and usage.

<http://www.wri.org/blog/2013/02/unlocking-sustainable-transport-starts-cities>

stakeholders several expert group meetings to refine the methodological work and advance on systems for data production, including capacity development initiatives for this indicator. These meeting have brought together various stakeholders including national statistical offices, national and local governments, transport authorities. It has also gathered partner organizations such as the Austrian Institute of Technology, Clean Air Asia, the European Commission, the German Aerospace Centre, the Deutsche Gesellschaft für Internationale Zusammenarbeit (or GIZ), and the Institute for Transportation and Development Policy. Others mobilized are the International Association of Public Transport, the International Transport Forum, SLoCaT, WhereIsMyTransport, the World Bank, the World Resources Institute, and the Wuppertal Institute for Climate, Environment and Energy. Another major milestone agreed upon by a number of the above-mentioned partners is the need for a Joint Monitoring Framework including a collaborative workplan to support governments further in their implementation and monitoring efforts on SDG indicator 11.2.1 until year 2030. Collective action towards capacity-building on data collection and monitoring, and the development of a standardized training material are key activities of this work plan.

### **Programmes and Projects:**

Different initiatives are being implemented at different levels, with increasing coverage and reporting capabilities. To help overcome the mobility challenge, UN-Habitat offers a comprehensive package of knowledge, advocacy, and technical aid to support national governments and local authorities in the development and implementation

of sustainable urban mobility plans and investment strategies. Between 2011 and 2015, UN-Habitat in close collaboration with governments and local authorities implemented the project “Promoting Sustainable Transport Solutions for East African Cities.” This project aimed to reduce private vehicle growth, thus reducing traffic congestion and greenhouse gas emissions in three East African capitals: Addis Ababa, Kampala, and Nairobi. The International Council on Clean Transportation reviewed the existing and future energy sources, fuel type and quality, vehicle technology, and infrastructure available in each project city, helping identify the most appropriate clean bus technology from various options.

Similar initiatives have also been implemented at the regional level. For example, in Europe region, the Transport, Health and Environment Pan-European Programme has since 2002 been working on creating a sustainable urban environment through joint specific transport, environmental and health related initiatives. In addition, various tools have also been developed to promote sustainable transport at the individual, city and national government levels (box 11). To promote informed decision making, UNECE in partnership with other UN agencies and organizations has been undertaking sub-regional capacity building workshops on how to gather transport related SDG data both at the urban and national levels, including a focus on SDG 11 data gathering activities.

In the Asia and Pacific Region, the Sustainable Urban Transport Index (SUTI) has been applied to help cities measure their performance in urban transport. The tool offers cities a method and guidelines to rapidly assess and report on their transport status across 10 indicators (box 11).



### **Smart integrated transport systems**

Investing in smart and green integrated transport systems that are inclusive, safe, accessible and affordable is critical.

***To promote informed decision making, UNECE in partnership with other UN agencies and organizations has been undertaking sub-regional capacity building workshops on how to gather transport related SDG data both at the urban and national levels, including a focus on SDG 11 data gathering activities***

### Box 11. Examples of emerging tools to monitor transport and promote sustainable mobility For Future Inland Transport Systems (ForFITS) and Safe Future Inland Transport Systems (SafeFITS)

These tools have been developed by UNECE to help decision making that promotes sustainable practices in transport. The For Future Inland Transport Systems (ForFITS) tool was developed to assist users in making informed decisions about measures available for the reduction of CO<sub>2</sub> emissions in the transport sector. Users of the tool can compare the projections between a baseline scenario and scenarios where proposed transport policies are implemented and estimate the amount of emissions that can be saved. The tool has been used in a number of cities to review the effects of different policy initiatives on reducing CO<sub>2</sub> emissions.

The *Safe Future Inland Transport Systems* SafeFITS is a road safety decision-making tool for national and local governments both in developed and developing countries, based on the related scientific knowledge and data available worldwide, with emphasis on recent academic research and project results. The tool is intended to assist governments and decision makers in deciding on the most appropriate road safety policies and measures to achieve tangible results. The model is based on historical road safety data and relations between several road safety parameters, and provides information on different road safety scenarios.

### Sustainable Urban Transport Index (SUTI): an efficient tool for measuring the urban mobility

ESCAP has developed the Sustainable Urban Transport Index (SUTI)<sup>11</sup> to track and compare state of urban transport performance and achievement of SDG target 11.2 in the Asia and the Pacific region. SUTI is a framework of ten key urban transport indicators for the assessment of urban transport systems and services in a city/country. SUTI is based on 10 indicators across the social, economic, and environmental dimensions of sustainability.

Indicators	Measurement	Weight	Range	
	units		Min.	Max.
The extent to which transport plans cover public transport, intermodal facilities and infrastructure for active modes	0 - 16 scale	0.1	0	16
Modal share of active and public transport in commuting	Trips/mode share	0.1	10	90
Convenient access to public transport service	Percentage of population	0.1	20	100
Public transport quality and reliability	Percentage satisfied	0.1	30	95
Traffic fatalities per 100,000 inhabitants	Number of fatalities	0.1	35	0
Affordability – travel costs as part of income	Per cent of income	0.1	35	3.5
Operational costs of the public transport system	Cost recovery ratio	0.1	22	175
Investment in public transportation systems	Percentage of total investment	0.1	0	50
Air quality (PM10)	µg/m <sup>3</sup>	0.1	150	10
Greenhouse gas emissions from transport	CO <sub>2</sub> Eq. Tons/capita/year	0.1	2.75	0
<b>Total</b>		<b>1.00</b>		

A data collection guideline<sup>12</sup> and an Excel data sheet<sup>13</sup> have been developed to support data collection and analysis. The tool's output is a spider diagram that summarizes a city's overall state of urban transport and performance against each indicator. A high value (near the outer circle of the diagram) indicates good performance. SUTI allows comparison and ranking of performance across cities in a standardized way, and is a useful tool for evidence-based policy actions to improve urban transport systems and services.

ESCAP piloted SUTI in four Asian cities – Colombo, Greater Jakarta, Hanoi, and Kathmandu and is currently applying the tool in five more cities – Bandung, Dhaka, Ho Chi Minh City, Surabaya and Surat. ESCAP organizes workshops in the region to disseminate the results.<sup>14</sup> Based on its application in the Asia-Pacific region, SUTI can be considered as a global tool and framework to track achievement of SDG target 11.2 on a regular basis (e.g. every two years). ESCAP intends to avail the tool for global application in collecting urban transport data.

<http://www.unescap.org/publications/monograph-series-sustainable-and-inclusive-transport-assessment-urban-transport-systems>

<http://www.unescap.org/sites/default/files/SUTI%20Data%20Collection%20Guideline.pdf>

[http://www.unescap.org/sites/default/files/SUTI%20DATA%20COLLECTION%20SHEET\\_VER4.xlsx](http://www.unescap.org/sites/default/files/SUTI%20DATA%20COLLECTION%20SHEET_VER4.xlsx)

<http://www.unescap.org/events/capacity-building-workshop-sustainable-urban-transport-index-suti>

**Financing:**

For efficient monitoring and reporting on this indicator, more money is needed to enable testing and refinement of existing methods but also strengthen the capacities of cities and local authorities in terms of monitoring and reporting through capacity-building activities and advisory missions. The development of a joint monitoring framework is spearheaded by UN-Habitat in collaboration with various partners, and spells out a budgeted activity plan covering the next few years.

**Capacity Development:**

Using the tools developed so far, UN-Habitat, and partners, have been strengthening the capacities of NSOs, universities, research institutions, local and national governments on how to monitor and report on this indicator. Training of professionals, NGO representatives, academia, local government officials and other key stakeholders in collecting data on the transport indicator has also been organized.

**Technology:**

The information age presents an unprecedented opportunity to respond strategically to the data gap by using technologies. As part of the Intelligent Transport Systems, Mobility-as-a-Service (MaaS) offers various tech solutions that optimize personal mobility options. One key component of the MaaS system is the real-time collection and dissemination of real-time public particularly for contexts with informally run public transport where data is scarce (see box 12). As part of the notion of measuring “convenient access” to public transport, there is need to recognize the fundamental approach to transport as a means, not an end. This is based on the purpose of

transport to gain access to destinations, activities, services and goods. An open-source software platform for measuring accessibility developed by the World Bank, the Open Trip Planner Analyst accessibility tool (<http://www.opentripplanner.org/>), is available to governments and all urban transport practitioners. This platform,

and others, can contribute to the measurement of this specific indicator on the component of “convenient access”. A number of other national and international initiatives are underway to gauge passenger movements through the use of mobile phone data, although concerns remain about privacy.

**Box 12. WhereIsMyTransport**

WhereIsMyTransport is a technology company based in London and Cape Town that provides services and technological solutions that harness advanced public transport data from African cities. The services include data collection, data access and journey planning. Through online services and work with local project partners, the company recruits and trains a team of data collectors who live in the area and regularly use local systems. Within the duration of a few weeks, citywide reliable data of informally run public transport can be efficiently captured. The mobile application collects route data and metadata, including on- and off-peak timings, common stopping points, fares, and frequency. Collecting data through an in-house mobile application built specifically for the unique nature of informally run public transport enables efficient collection with less risk of human error. Data is available for most South African cities, but efforts have also been undertaken in these national capitals: Gaborone (Botswana), Kampala (Uganda), and Nairobi (Kenya).



***Collecting data through an in-house mobile application built specifically for the unique nature of informally run public transport enables efficient collection with less risk of human error***

### 3.3. Target 11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

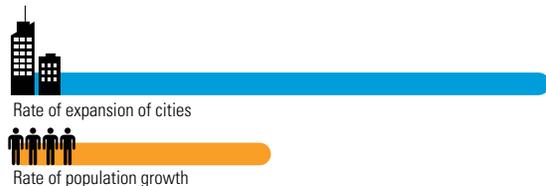
**Indicator 11.3.1 Ratio of land consumption rate to population growth rate.**

#### Key Messages

Although urban sprawl has been monitored in recent decades, today's new technologies and data sources allow for a more accurate measurement of this phenomenon. Research from different sources has shown that urban areas are growing at a faster rate than their populations. As a result, densities are declining. Cities that use land more efficiently have far better conditions to provide public goods and basic services (for example, water and sanitation, transport) at a lower cost. Such areas can consume less energy, manage waste better, and are more likely to maximize the benefits of agglomeration. New data on land consumption, which is mostly generated using spatial analysis technologies, allows for more precise comparisons amongst cities regardless of the specific administrative boundaries defined at the local level.

#### Land use efficiency

In the last 20 years, cities grew by 1.5 times the rate of the population. Cities that use land more efficiently have far better conditions to provide public goods and basic services at a lower cost. Such areas can consume less energy, manage waste better, and are more likely to maximize the benefits of agglomeration.



#### Regions with high urban sprawl

**6.9%**  
Eastern and Southeastern Asia

**5.1%**  
Sub-Saharan Africa

**4.3%**  
Central and Southern Asia

#### Context

While it is generally agreed that urban settlements can contribute to the attainment of the SDGs, this requires that the urban areas become sustainable in the use of resources and in their function and form. Attainment of sustainable cities in many ways relate to effective planning, development and enforcement of inclusive policies, strong economic actions and strategies, environmental protection plans, sustainable investments which accommodate the needs of all people regardless of their age, gender, social or economic status.

All these policy actions and interventions rely on up-to-date and accurate data, participation of all urban stakeholders, expertise which acknowledges and responds to dynamic urban trends, and partnerships for continued innovation to tackle emerging complexities. Data, information and knowledge are essential in responding to fundamental questions. Some of these are: Which are the drivers and actors of city growth? How is this growth taking place and with which implications? What is the rate of formation of megacities and urban corridors, and how do they contribute to global prosperity? What are the patterns that conform to new economic geography? How does growth of big cities differ from that of small one and what is the role of planning and the use of land? Who is responsible for the planning processes and are urban dwellers and other stakeholders engaged in such planning? How much is the level of engagement and participation?

Target 11.3 seeks to answer some of these questions, in its bid to promote the attainment of inclusive, integrated and sustainable urbanization in all countries. This is to be achieved by tracking changes in two urban indicators above over the next 15 years.

These two indicators present a new layer of data needs, which have been previously collected at a very micro level, or that have been focused on different measurement metrics of specific development interest for countries and cities (for example, land cover change). As a result, data to report fully on the indicators at the city and country levels are available but need organization and, in some cases, relevant information is spread in different subcomponents and needs to be readjusted for reporting progress.

The first indicator (11.3.1) on efficient land consumption is not new. It has been measured over a period of 30–40 years. Using remote sensing methods, the indicator can be measured in a cost-effective way in an unlimited number of cities. Research has shown that two main different approaches are used to measure this indicator (the degree of urbanization and the urban extent) that has very strong connections to other goals and targets.

The second indicator (11.3.2) on participation also has been measured in different forms and through different lenses. Although participation itself can be explained in different manners, no one denies the involvement of different actors in urban affairs is critical to build consensus and to take the most appropriate and informed actions.

### Data trends and challenges:

Findings from this indicator show rapidly expanding human settlements, for which

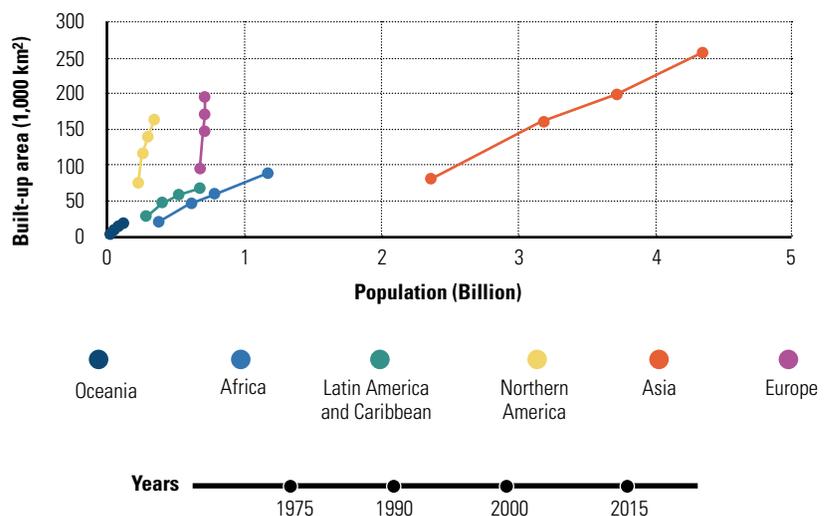
the rate of land consumption is increasingly overtaking that of population growth rate. This data, which is mostly generated using spatial analysis technologies, is greatly challenging the traditional notion of the city unit and its boundaries, which were used to generate urban data. Major variations have already been recorded between the official United Nations statistics and data generated using alternative spatial methods, particularly on the number of cities and the shares of urban population per region.<sup>15</sup>

For indicator 11.3.1, there are plenty of data points over many years. This has been possible due to the fast-growing network of geospatial data generators and repositories, as well as the rapid uptake of geospatial technologies by countries and cities owing to their proven ability to support effective planning through accurate data generation at relatively lower costs. Data that can be used to compute the indicator for all cities is easily accessible through multiple open source global

data repositories such as imagery from Landsat and Sentinel, as well as analytical datasets such as the Global Human Settlements Layer, the Atlas of Urban Expansion, and the Global Urban Footprint. Population censuses and projections from individual countries as well as UNDESA provide data on the population component of the indicator.

Estimations by the Joint Research Centre of the European Commission indicate that in 2015, the world's 7.3 billion people lived and worked in only 7.6 per cent of the global land mass, and that the global built up area had increased by approximately 2.5 times since 1976; from slightly above 300,000 Km<sup>2</sup> to just under 800,000 Km<sup>2</sup>. Over the same period, the population increased 1.8 times, from about 4 billion to about 7.3 billion people. Major variations were reported for each region, with Asia experiencing the fastest transition in population and built up area, while Europe experienced the lowest transition in population and a doubling in its built-up areas<sup>xx</sup> (see figure 9).

**Figure 9. Change in population and built up area by region, 1975 - 2015**



Source: European Commission Joint Research Centre (2016).

From an urban perspective, latest data generated using spatial metrics indicate that the pattern of growth of cities has been shifting, with populations moving to suburbs. This data shows that nearly all of the world's large urban areas have extensive suburbs of much lower density outside the central cores that are characterized by higher densities, in most cases. Some post-automobile urban areas have virtually no urban cores at all.<sup>xxi</sup> These findings are backed by a joint study by UN-Habitat, New York University and the Lincoln Institute of Land Policy on a representative sample of 200 cities across the globe, which established that the average rate of the physical expansion of cities is about one-and-a-half times that of their population growth. The data further identified that an understanding of these dynamics

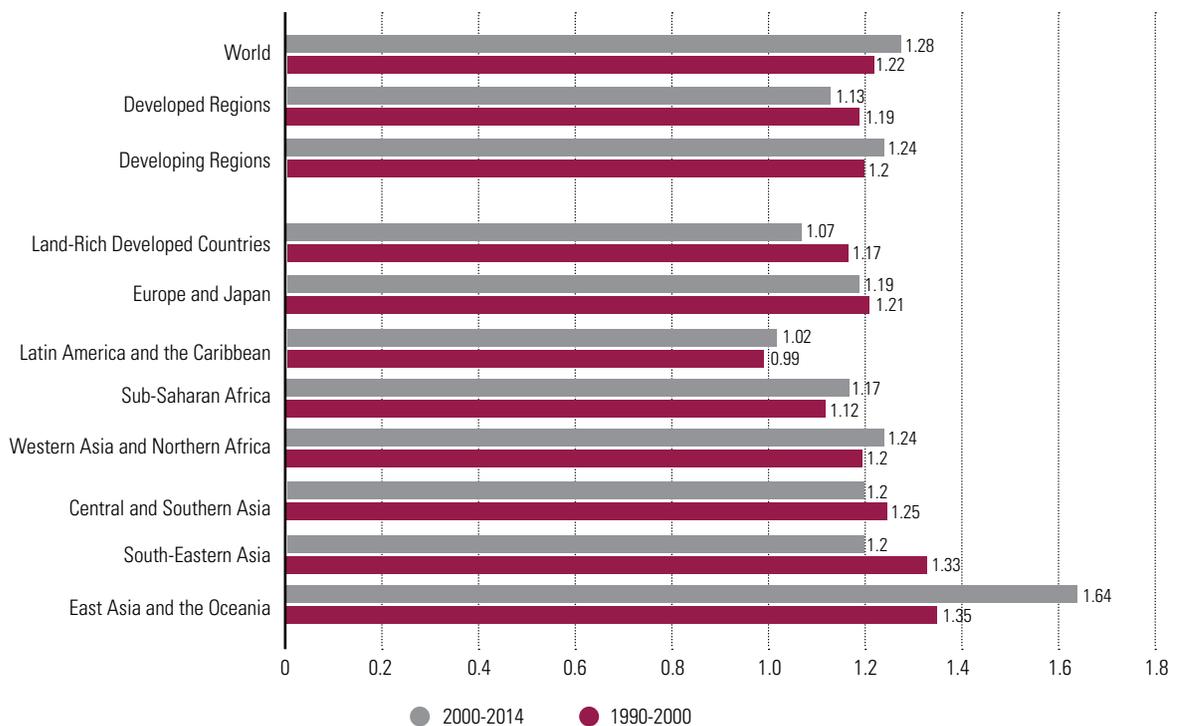
is key to the formulation of informed policies and guidelines on sustainable urbanization. By measuring the rate at which cities consume land compared to their rate of population growth, city authorities and decision makers can project demand for public goods and services, identify new areas of growth, and proactively influence sustainable urban development. This is needed to provide adequate infrastructure, services and amenities for the improvement of living conditions to all. The efficient use of land is strongly correlated to many other SDGs and targets.

Empirical data collected over two-time periods, 1990-2000 and 2000-2014, shows that all the world regions experienced a faster rate of urban expansion as compared to their rate of population

growth (see figure 10). The exception was the LAC region whose rate of population growth was faster than that of urban expansion for the 1990–2000 period.

As cities experience demographic growth, they tend to expand spatially. Between 1990 and 2015, cities in developed countries increased their urban land area by 80 per cent, but the urban population increased only by 12 per cent. In developing countries, the urban land use increased by 350 per cent, while urban population increased by 100 per cent. The average land use per capita is 200 m<sup>2</sup>. Closely related to the rapid expansion of cities is low-density development. A common thread running through cities is that urban densities have been declining.<sup>16</sup> As densities decline, the area occupied by cities grows faster than their population.<sup>17</sup>

**Figure 10. Ratio of rate of urban extent growth rate to population growth rate by region**



Source: UN-Habitat and New York University, *Atlas of Urban Expansion*, 2016.

This has profound repercussions for environmental sustainability at a local, regional and global scale, especially for urban mobility options that are required to enable efficient urbanization while minimizing environmental impacts (such as air pollution, fuel consumption and CO<sub>2</sub> emissions). The way such unprecedented urban growth is managed in the years ahead will be crucial in the quest for sustainable urbanization. The consequences of excessive unplanned urban expansion declining density include increased demand for mobility; increased energy consumption; environmental degradation; increased cost of providing basic services per capita (water, sanitation, drainage); increased cost of public space and infrastructure per capita; reduction in economies of agglomeration; and decreased urban productivity.

#### **Awareness:**

The definition of cities varies broadly internationally and there is little agreement on a universal concept that would allow more precise comparability and reporting. As a result, countries have been monitoring and reporting using different city definitions that are not harmonized. UN-Habitat and partners have explored different measurement alternatives, narrowing down to two options, as it has been explained in Chapter 2.

The need to adopt an operational definition of the city and the delimitation of boundaries are paramount for the measurement of this indicator, and other indicators that have a strong spatial component (for example, public space). The calculation methods from the two different approaches need to be harmonized in order to produce a unified data source. Through the guidelines and metadata developed in various meetings and fora (such as WUF, WDF), supported

by capacity development activities conducted in countries, UN-Habitat has raised awareness on the need to adopt an operational definition of the city, independent of the country definitions, and advance on the harmonization of existing metrics under a single methodology.

#### **Policy:**

A city that uses land more efficiently is far better placed and able to provide public goods and basic services (for example, water and sanitation, transport) at a lower cost, and can consume less energy, manage waste better, and are more likely to maximize the benefits of agglomeration. The efficient use of land encourages walking and relies less on private cars, supports more compact development, and generates more efficient functional and low-cost opportunities.

The expansion of cities is measured against population growth, and in some cases where this growth is negative or stagnating, or when city boundaries are for some reasons reduced, the ratio would be difficult to interpret in terms of positive or negative change. Implicit in this indicator is the notion of residential densities that tend to shrink as city expansion gets higher than population growth. Cities are advised to produce baseline information on population density and define optimal values on what constitutes an efficient land use, which is always context specific. Increasing densities, or in some specific places reducing them, has different sustainability implications, particularly considering the huge variations they can have. For instance, average densities in Australia, Canada, and the United States are half of those of European countries; and densities in least developed countries

are on average three times the values observed for Europe. It is, therefore, recommended that functional regulations and plans that favour land and housing affordability, energy consumption, the reduction of carbon dioxide emissions and the overall increase in productivity values through economies of scale and agglomeration be adopted.

The method and data of this indicator is already available. To scale up the measurement of this indicator, there is a need to provide capacity-building to NSOs and to make accessible the appropriate technology. This should include local authorities that are responsible for the preparation of urban plans, regulatory mechanisms and land control, and the need they have to prepare evidence-based plans and policies.

#### **Partnerships:**

UN-Habitat has facilitated the engagement of different stakeholders that are leading the production and dissemination of data and analysis on this indicator. Several Expert Group Meetings (EGMs) have been held to promote the harmonization of the different elements of the methodologies and input data. For example, UN-Habitat in collaboration with other UN agencies, National Statistical Offices, local governments, New York University, the Joint Research Centre of the European Commission and other city leaders have developed reference guidelines for city and urban definitions.

#### **Programmes and Projects:**

Different initiatives are being implemented at different levels, with increasing coverage and reporting capabilities. The European Commission has monitored this indicator for many European cities. Additionally, UN-Habitat in partnership

with New York University and the Lincoln Institute conducted a study on urban expansion using the global sample of 200 cities where city expansions were monitored for over three decades. Also, over 100 cities engaged in the City Prosperity Initiative have monitored urban expansion and population growth using the same methodology applied for the global sample of cities.

### **Financing:**

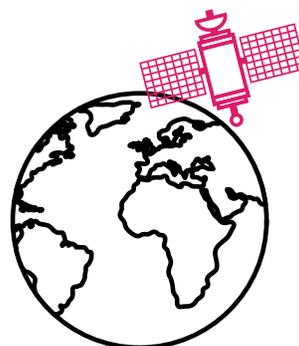
For efficient monitoring and reporting on this indicator, there is need for more money to enable testing and refinement of existing methods, and to propose a harmonized technique to measure city expansion and the definition of city boundaries.

### **Capacity Development:**

Using the tools and metadata developed so far, UN-Habitat, regional commissions and partners have been strengthening the capacities of national statistical offices, universities, research institutions, local and national governments on how to measure this indicator. Taking advantage of international meetings, specialized trainings were provided to the large public on the definition, concepts and methods to measure this indicator. Further capacity-building efforts targeting NSOs and local governments are planned for 2018-2019 to promote the monitoring and reporting of the indicator.

### **Technology:**

Recent trends in availability of satellite images and advancements in remote sensing and data production methodologies, such as machine learning, are today allowing for generation of data for measurement of this indicator. The free-access and open source nature of



## **Earth Observation technologies**

New methodologies for monitoring of selected Goal 11 targets and indicators include use of Satellite and earth observations technologies, making monitoring easier and closer to real-time.

many of the newly emerging imagery and data production technologies are greatly contributing to reduced cost of the monitoring process, while ensuring the comparability of information collected across countries. These technologies, when combined with ground-truthing support the development and refinement of models which can be applied at local, national, regional and global scales to generate high accuracy data for monitoring.

Equally, a diversity of data dissemination platforms and technologies are continuously being developed, allowing for the information to be accessible to a wider range of stakeholders. Open and expansive data will also serve to estimate population changes and density variations at intracity levels.

The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) has been conducting extensive research on new technologies for

more efficient and effective exchange of information on several domains, including those related to land registry and property registry systems. These registries inform land consumption rates relevant to this indicator. For example, the e-Government Domain, within the Regulatory Programme Development Area at UN/CEFACT, is developing two white papers aimed at reviewing both the technical applications of Blockchain to UN/CEFACT deliverables on data exchange, and another on use-cases in a wide variety of areas of application in which this technology could provide opportunities for efficient, effective and trusted systems. Several countries, such as The Netherlands, India, Kenya and Switzerland have already begun piloting blockchain-based land registry systems, which are expected to have a significant impact on promoting inclusive and integrated urbanization through the principles of immutability of records and system decentralization.

**Indicator 11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically.**

## Context

The development of sustainable human settlements calls for the active engagement of civil society organizations, as well as broad-based people's participation. Governments need to promote, facilitate and protect different forms of participation, empowering city residents, ensuring the realization of their civic and human rights, and removing existing barriers that block the full engagement of marginalized groups, particularly women and youth. This is of intrinsic value, but also gives rise to buy-in of residents, more sustainable planning and greater social cohesion.

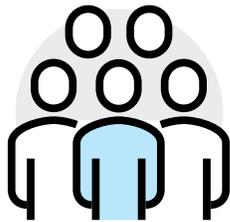
### **Data trends and challenges:**

Indicator 11.3.2 seeks to focus on the important component of inclusivity and participation. The indicator is designed to measure whether residents are able to participate in the urban planning and management of their cities. Given the complex and subjective nature of participation, the indicator focuses on formal structures that are available for civil society. It does not evaluate the effectiveness of these structures, nor the extent to which they are used.<sup>18</sup>

This indicator was classified as Tier III, as there was a lack of established methodology for it to be measured, with no existing data at country levels. However, several steps have been taken to refine the methodology to internationally acceptable standards. These activities include an expert group meeting and a technical meeting, which have produced a refined methodology. Through a consultative process, involving representatives of various United Nations agencies, academia, government and civil society, the methodology has been agreed upon and is now pending approval of

## Key messages

This is an important indicator which measures voice and influence of people, communities, civil society including grassroots and informal sector organizations in urban planning and management. Participatory, transparent, accountable urban planning and management, and the creation of an enabling environment, are important steps in assessing how national and local governments involve people, communities and organizations in implementing, monitoring, and evaluating SDGs policies and programmes such as urban planning. Quality participation by all is vital for sustainable development and for the successful design and implementation of integrated spatial and urban planning and management.



## Participation and governance

**Inclusive participation is vital for sustainable urban development.** Elections are the most common participation avenue, followed by public hearing and consultations. 34% of cities don't engage civil society in any consultations.

the Inter-Agency Expert Group on SDGs. The agreed methodology has articulated several considerations: a) need to use smart qualifiers, that operationalize terms such as direct participation, regularly, and democratically; b) considers formal and informal participation mechanisms; c) considers the city as a unit of analysis, and design forms to aggregate values at national level; and d) considers the participation of a cross-section of society, including various marginalized groups.

Regarding data collection, there are over 200 cities that are collecting data but many have been using different approaches. At national level, two countries have indicated willingness to begin formal data collection based on the new methodology that is now available in the new version of the metadata.

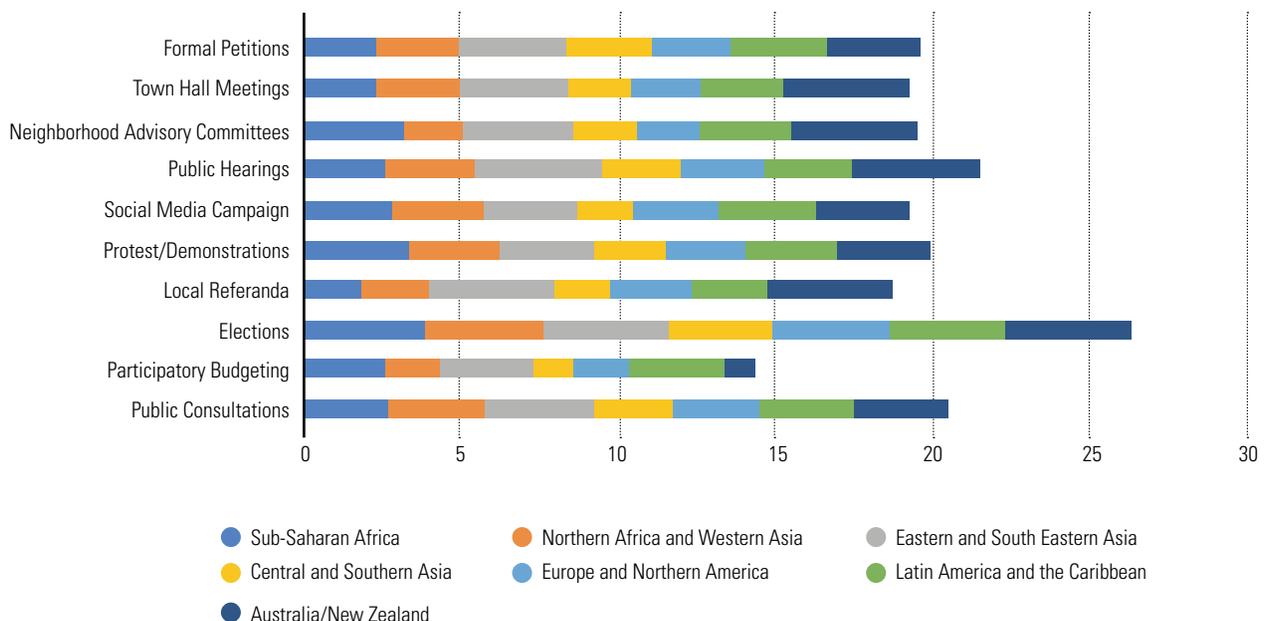
According to available data compiled by UN-Habitat, about 46 countries in all regions have data relevant to indicator 11.3.2, which includes participation in activities such as: public consultations, participatory budgeting, elections and local referenda, protest and demonstrations, social media campaign, public hearings, neighbourhood advisory committees, town hall meetings and formal petitions. Figure 11 highlights regional performance in 10 participation indicators. Each sub-region is given a weight ranging from 1 to 5 for every indicator, with the numbers representing increasing level of performance.

Eastern and South-Eastern Asia demonstrates more developed public participation mechanisms at the city level with a total score of 35/50,

followed by Australia and New Zealand (33/50) while Central and Southern Asia scores least (21.92/50), followed by Europe and North America (25.47). As shown in figure 6, elections are the most common participation avenue for citizens followed by public hearings and public consultations, while participatory budgeting is the least utilized participation method. There are, however, huge variations in the levels of participation for each activity per region. For example, while participatory budgetary scores least in the Australia and New Zealand subregion (1/5), it is quite common in the LAC subregion (3.05/5).

These findings are backed by alternative data collected in 221 cities, which aimed to understand the level of public consultation by measuring whether cities

**Figure 11. Public participation mechanisms in regions at city level**



Source: UN-Habitat Urban Indicators database, 2017

engage civil society in formal participatory processes prior to: (a) new major roads and highway proposals (b) alteration in zoning, and (c) major public projects. Results show that 48 per cent of the cities (107) engaged civil society prior to the three processes, 34 per cent (75 cities) did not engage civil society in any of the process and 18 per cent (39 cities) engaged them in at least one process.

In general, cities and countries record fair levels of civic engagement in decision-making and governance, which also has a bearing on urban planning and management. This is likely to continue improving as more cities adopt technology for engagement and feedback processes. However, it must be acknowledged that this indicator has the limitations of accountability, effectiveness, and measuring who is engaging through these methods and which groups of people, if any, are not being engaged or are being marginalized. This includes the extent of participation such as invitations and options for participation, versus successful and meaningful engagement with a wide range of people at times and locations which are convenient and accessible. This concern highlights that the quality of participation using established procedures and disaggregation of data by gender and other social economic considerations must be captured.

#### **Awareness:**

Given that local governments are responsible and accountable for the data collection and for managing and acting upon participatory initiatives, national governments are encouraged to create an enabling environment, including necessary legislation, for local governments to institutionalize and facilitate civic participation. The structures

and flow of information that exist between national governments, which have made international commitments, and subnational and local governments, which are closer to participants and the mechanisms of engagement, are an important consideration for this indicator.

Every context and country has specific needs and provides responses. For example, the Environmental Impact Assessment (or Heritage Impact Assessment used by UNESCO requires community consultations that can be adjusted to bolster the participatory systems. UN-Habitat uses a participatory approach to all programmatic work with local authorities, adopting human rights markers. Additional consultative processes include the “people’s process” in the Asia-Pacific, which has proven highly successful in building relationships and effective participation of people, communities and civil society in national and local levels development efforts. Likewise, the “People-Orientated Public Spaces”, in China and the “Community Development Councils” in Afghanistan that bring community men and women together with local authorities to engage in city and neighbourhood planning.<sup>19</sup>

In addition, using the guidelines and initial metadata, various capacity development activities have been conducted in international fora (for example, WUF, WDF), where UN-Habitat and partners have raised awareness about this indicator. For example, during the 9<sup>th</sup> Session of the World Urban Forum in Kuala Lumpur (WUF 9), different civil society groups from across the globe, including representatives of women, youth, persons with disabilities, the elderly, indigenous persons, farmers and the media were empowered to engage with local and national authorities.

#### **Policy:**

The right to meaningful participation in various aspects of development and governance is enshrined in constitutions and bills of rights of many countries. This is complemented with relevant international and regional human rights standards and norms signed or ratified by Member states. The countries that have adopted national urban policies established local and national mechanisms to ensure effective civic engagement and consultation with local authorities, grassroots and informal sector organizations, and other stakeholders. Several countries have also adopted national land and physical planning policies in a consultative matter.

The World Urban Forum held in Kuala Lumpur in February 2018 was a strong platform to promote policy interventions relating to civil society participation. The forum engaged a number of different civil society groups from across the globe, including representatives of women, youth, persons with disabilities, the elderly, indigenous persons, farmers and the media. These groups were empowered to engage with local and national authorities. The various discussions at the forum underlined the importance of engaging civil society in order to achieve sustainable urban development.

#### **Partnerships:**

As part of the UNESCO Creative Cities Network, more than 180 cities have established direct cooperation mechanisms between civil society organizations and municipal services to allow direct participation of local communities in municipal decision-making. The Huairou Commission and



United Nations Major Group for Children and Youth are two networks of community groups that represent women and youth from across the globe participating in sustainable urban development issues. UN-Habitat is the secretariat or member of a number of networks engaging civil society in urban planning and management. For example, the Global Land Tool Network and The Global Water Operators' Partnerships Alliance are networks of partners working in the thematic area that develop tools and guidance for inclusive and participatory governance and planning.

### **Programmes and Projects:**

SDG 11.3.2 aims to measure the progress made by countries in accountability and participation of all stakeholders in achieving goals and reaching targets. Several programmes and projects are being implemented worldwide; this is the case, for instance, with India, Kenya, South Africa, Sweden, Switzerland and the United Kingdom that showed an early interest in implementing and measuring the SDG 11.3.2 indicator. However, less information could really be found on

the technical aspects used by these countries. In Zimbabwe, the government has implemented the concept of public/private partnership with involvement of citizens and civil society as part of a joint venture to reduce the low-income housing shortage. In rural areas, an integrated approach which involves the participation of various sectors such as an inter-ministerial group, NGOs, the private sector, and community participation is in place.

### **Financing:**

Measurement of SDG 11.3.2 has received little funding so far. However, work related to implementation of the goal (that is, civil society participation in urban planning and governance) receives consistent funding across United Nations programmes. Funding for monitoring is needed to pilot test several global tools that monitor and report on the involvement and participation of various stakeholders and at various sub-national and national levels. Many national statistical organisations need capacity building and additional support to establish relevant reporting lines/channels and systems for reporting on this indicator.

### **Capacity Development:**

UN-Habitat provides technical aid to local authorities to engage with civil society. This includes sensitizing authorities to working with different groups, support engaging communities, running and advertising community consultations, and drawing concrete feedback and next steps from consultations.

The Niger State Urban Support Programme in Nigeria is designed to implement the New Urban Agenda and various SDGs urban targets, following an integrative approach that uses a human rights-based approach. This project identifies a range of stakeholders, duty bearers and rights holders, analyzing the existing capacity gaps and designing responsive capacity-building activities. The project aims to develop a bottom-up and stakeholder-driven policy, planning and development system in towns and cities in Niger State, with particular reference to young people and women. Sex- and age-disaggregated data is being collected to establish a gender and youth baseline analysis, identifying challenges and opportunities. A key component of this project is the implementation of extensive capacity-building programmes to harness the potential of stakeholders and politically and economically empower marginalized groups, especially the youth.

### **Technology:**

Interesting uses of technology in support of this indicator is UN-Habitat's application of the "Block-by-Block" platform— based on the game Minecraft— to engage communities in public space planning and regeneration, and link civil society to decision-making bodies. Likewise, the SaftiPin application is used to track violence in cities, and links individuals with local authorities responsible for urban safety, as a way of citizen participation.

### 3.4 Target 11.4: Strengthen efforts to protect and safeguard the world's cultural and natural heritage'

**Indicator 11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed, World Heritage Centre designation), level of government (national, regional, and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector, sponsorship).**

#### Context

The New Urban Agenda recognizes urban culture and heritage as important factors in urban sustainable development with many references to the roles of tangible and intangible cultural heritage in tourism, poverty reduction, and employment.<sup>20</sup>

Several other development agendas noted the need to link sustainability and culture at the urban level and the notion that culturally sensitive sustainable development should become a priority for all countries. While most national development plans contain cultural outcomes, they are not necessarily specific to creativity as referred to in the global agendas and in UNESCO cultural conventions. In fact, budgets and infrastructure are often not allocated to support the aims and objectives of cultural and heritage references in the development plans in many countries. Moreover, there is a poor record of civil society participation and partnership in the implementation of plans and strategies that exist to support cultural and heritage preservation.

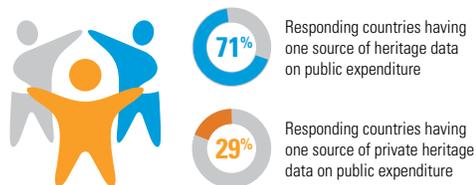
According to UNESCO, heritage is defined as our legacy from the past, what we live with today, and what we pass on to future generations. For cities, culture appears as an economic asset, a social good and a productive and dynamic process that undergoes continuous change.<sup>xxii</sup> Many cities around the world contain a historical core with various forms of cultural and natural heritage that have resisted forces of urbanization and modernization.<sup>xxiii</sup> Recent pressures from population growth and urban expansion have led these heritage assets to be viewed as

#### Key messages

Culture and sustainable urban development are intimately connected. The way urbanization is planned and managed has a direct impact on the protection and safeguarding of the world's cultural and natural heritage. Culture promotes social cohesion and intercultural dialogue, creates a collective identity and sense of belonging, encourages participation in political and cultural life and empowers marginalized groups. It also contributes to placemaking, understanding of the city's history and the valorization of urban spaces.

Sustainable tourism, the cultural and creative industries, and heritage-based urban revitalization have proven to generate green employment, stimulate local development and foster creativity. Measuring preservation, protection and conservation of all cultural and natural heritage at the national and subnational levels requires more elaboration on the indicator's method that is progressing and being tested.

#### Culture and cities



The contribution of culture to sustainable urban development is widely recognized. Initial results show that 71% of responding countries had at least one source of heritage data on public expenditure while 29% of countries had a least one source of private heritage expenditure data. Culture and sustainable urban development are intimately connected.

Well planned urbanization protects and safeguards the cultural and natural heritage.

threats, preventing the development of nations. However, in recent years, the economic and social benefits that cultural heritages offer to cities across the world are increasingly recognized as keys for sustainable development.

With the role of people-centred development and rising inequalities, cultural and natural heritage provides identity, agency and tools to achieve development. There is an emphasis on participatory and collective practices that aim to achieve inclusivity. As culture is a locally specific goal, local governments are important actors between global and regional development forces, and citizens. They have the ability to support citizens and communities by implementing policies and localizing the global agenda. Local governments are also able to change ideas and incorporate new ones into culture through policy initiatives, planning and infrastructural development. For example, culture can be used to increase political and economic power of vulnerable groups such as women, youth and indigenous groups; and operationalized to support and enable the achievement of sustainable development in cities.

Urbanization and modernization have bypassed heritage sites, street patterns, and the social fabric and traditional activities that can serve as urban locations for traditional culture and creative industries, contributing to inclusive, safe, resilient and sustainable urban spaces.<sup>xxiv</sup> These heritage centres often represent local vernacular architecture that create spaces for economic activities, individual trade, and artisan spaces for traditional goods and services as well as entrepreneurship.

Culture-informed urban development has great benefits for populations and for the achievement of this target. First, culture



***Culture contributes to climate change resilience by promoting a planet- and people-sensitive sustainable development agenda***

promotes social cohesion by inspiring participatory policymaking, creating a collective identity and sense of belonging, encouraging participation in political and cultural life and empowering marginalized groups. Second, culture promotes economic development, driving social and economic change, and increasing development potential for transformative change.<sup>xxv</sup> Third, culture supports planning, infrastructure and the making of public space by providing local knowledge about cities and its citizens, and adding a sociocultural importance to planning and policy using culturally sensitive urban data. Fourth, culture contributes to climate change resilience by promoting a planet- and people-sensitive sustainable development agenda.<sup>xxvi</sup> The contribution of culture to sustainable urban development is explicitly referenced in target 11.4 and across various other targets and indicators of Goal 11.

***Data trends and Challenges:***

The inclusion of a cultural target under the urban Goal 11 on the need to strengthen efforts to protect and safeguard the world's cultural and natural heritage is a landmark achievement. The specific global indicator focuses on monitoring the expenditures that go into preservation,

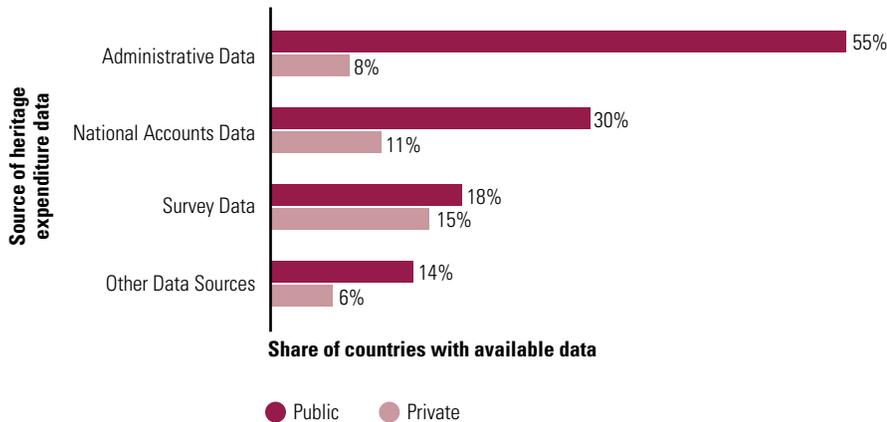
protection and conservation of all cultural and natural heritage at the national and subnational levels, in addition to examining the nature of funding and its origins.

The UNESCO Institute for Statistics has developed various guides for supporting Member States on the global monitoring of this indicator, including a detailed global data collection tool.

In 2017, UIS undertook a metadata survey on heritage expenditure statistics to assess the extent of data availability worldwide to collect the SDG indicator 11.4.1. The total response rate of the UIS metadata survey was 32 per cent, with 66 of 207 countries and territories responding. The response rate varied greatly between SDG regions. Europe/North America and Northern Africa/Western Asia had the highest response rates with 59 per cent and 38 per cent, respectively.

Based on a preliminary analysis, many countries have public expenditure data but the amount of detailed data available to produce indicator 11.4.1 varies greatly. Data for private expenditure on heritage is more limited. Initial results show that 71 per cent of responding countries had at least one source of heritage data on public expenditure while 29 per cent of countries had a least one source of private heritage expenditure data.

As shown in figure 12, administrative data and national accounts data are the main sources of public expenditure on heritage data for 55 per cent and 30 per cent of countries respectively. Private data on heritage expenditure are more limited. For 15 per cent of responding countries, survey data is the main source of private expenditure data on heritage. Based on the results of the metadata survey and the Pilot survey undertaken in 2017, UIS is designing a detailed global data collection tool that matches the needs of the indicator.

**Figure 12. Availability of heritage expenditure data by type and source of data**

Source: UNESCO, Institute for Statistics, 2017

### Awareness:

Awareness-raising sessions for culture and sustainable development as well as culture and sustainable cities have been organized on the margins of annual World Heritage Committee meetings for the last 15 years.

The Creative Cities Network was set up in 2004 to promote cooperation with and among cities that had identified creativity as a strategic factor for sustainable urban development. The 180 cities from 72 countries that currently make up this network work together towards a common objective: placing creativity and cultural industries at the heart of their development plans at the local level and cooperating actively internationally.

The 9th World Urban Forum in Kuala Lumpur provided an opportunity for UNESCO to demonstrate the integration of culture into the SDGs, and Goal 11 in particular. A special session titled “Leveraging diversity and culture, shaping cities for all” was hosted by

UNESCO and UN-Habitat, highlighting the importance of promoting heritage and cultural industries for urban policy. The event—“Culture, Recovery



**180** cities from 72 countries that currently make The Creative Cities Network, work together towards a common objective: placing creativity and cultural industries at the heart of their development plans at the local level and cooperating actively internationally

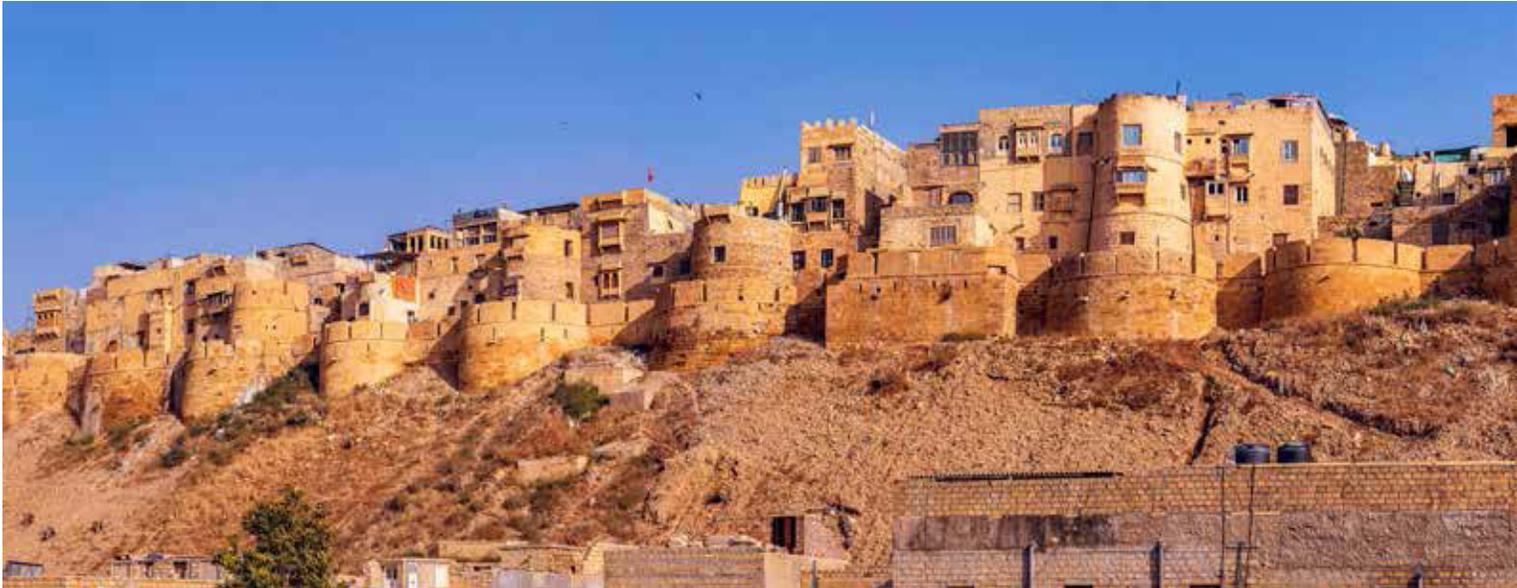
and Reconstruction: Sustainable Development Policies”—also offered a networking opportunity and the chance to discuss the mainstreaming of culture in post-conflict urban settings. UNESCO also organized a training session for city managers and change-makers to consider a broad methodology for integrating culture and creativity into sustainable urban development strategies and Goal 11 in particular.

### Policy:

Key activities towards enhancing the conservation of the cultural and natural heritage as well as safeguarding of intangible cultural heritage are undertaken at the national and local levels in the framework of implementing the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage as well as the Convention for the Safeguarding of Intangible Cultural Heritage.

The key publication *Culture: Urban Future* acts as a framework to support local and national governments in the implementation of the 2030 Agenda, and for the integration of culture into SDG 11. The report looks at the contribution of culture to urban sustainability, and the promotion of a culture-based approach to urban planning.

The adoption of United Nations Security Council resolutions 2199 and 2347 testifies to the international recognition of the role of culture in fostering resilience, reconciliation, and social cohesion. UNESCO supports Member States in the implementation of the resolutions by strengthening national legislations under the umbrella of the culture conventions, and in developing countries’ capacities to respond to threats facing their cultural heritage.



Panoramic view of the Jaisalmer Fort at Rajasthan. A UNESCO World Heritage site © Shutterstock/Roop Dey

In order to develop indicators for culture in the SDGs, UNESCO organized two expert workshops on measuring culture in the SDGs (2017 and 2018) to formulate a monitoring framework, methodology and definitions – a suite of thematic indicators for culture - to measure the contribution of culture to Agenda 2030. The strategic framework of the UCCN network, covering, 2017– 2021, has integrated the SDGs, particularly Goal 11, into its approach.<sup>21</sup> Policy guidance leveraging culture and creativity to making cities more resilient and inclusive are being developed through several expert meetings.

UNESCO and the World Bank are working towards a White Paper titled *Culture, Reconstruction, Recovery: Sustainable development policies to address the impact of conflicts, disasters and crises in cities*, which seeks to develop a framework that will help integrate the promotion of cultural heritage in recovery, reconstruction and development of cities in the future.

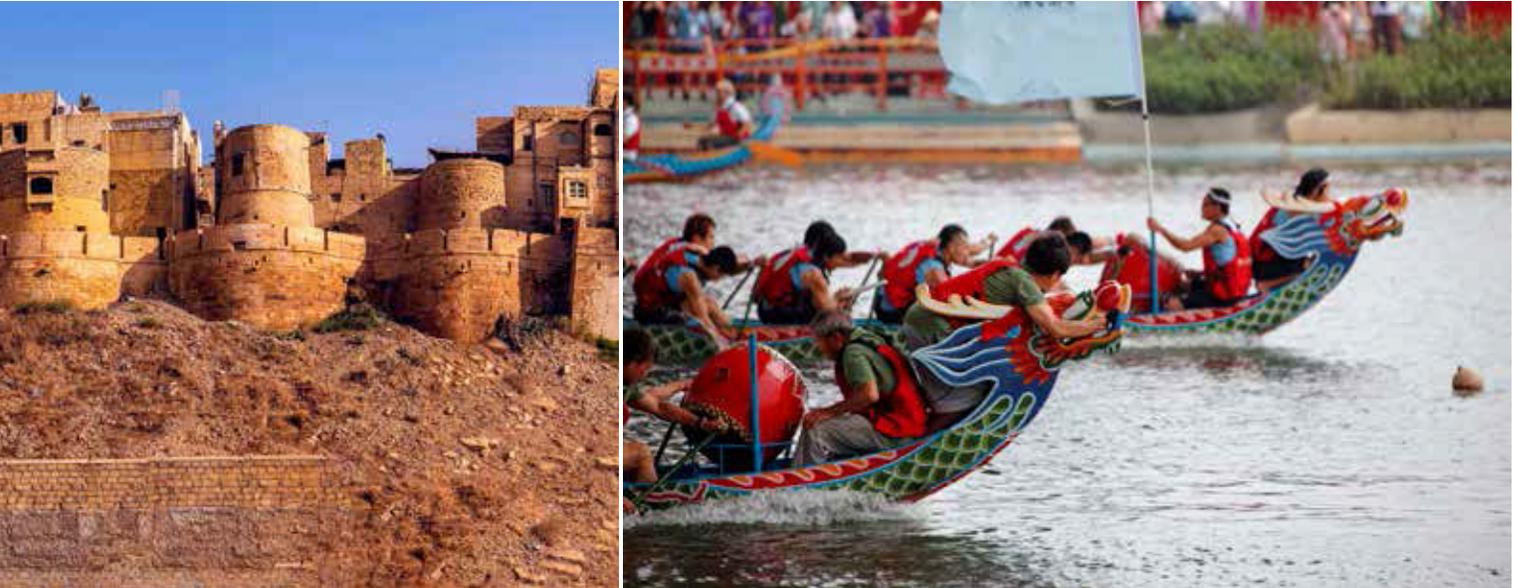
### **Partnerships:**

Partnerships for culture and sustainable urban development involve a wide network of actors. These actors include international organizations, Member States, national commissions for UNESCO, Category 2 Centres, international and regional associations of cities, non-governmental organizations, the private sector, specialized funding bodies, goodwill ambassadors, and civil societies. UNESCO has collaborated with United Nations agencies and intergovernmental organizations to coordinate activities better and agree on a framework for action. UNESCO and UN-Habitat renewed their cooperation in 2017 with a commitment to work jointly towards the integration of culture into Goal 11 and for the inclusion of culture within the City Prosperity Index.

In the context of the Sendai Framework for Disaster Risk Reduction (DRR), UNESCO developed partnerships and tools with key international partners such as the World Bank and UNDP to build a culturally-sensitive approach to DRR,

while drawing on traditional knowledge of local communities and their intangible culture heritage to strengthen resilience. These partnerships seek to provide technical and operational guidance for post-disaster city reconstruction and recovery programmes and for assessing capacity at the national level for DRR in the culture sector.

The establishment of the Creative Cities Network has resulted in closer ties between UNESCO and partners. Creative cities act as loci of experience, exchanging good practices and cooperating on an international level. Aligning with SDG indicator 11.3.2, the “proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically”; creative cities have successfully utilized local partnerships and fostered civic participation. UNESCO has cooperated with a number of organizations for the development of thematic indicators for culture in the SDGs, including Eurostat, the Joint Research Centre of the European Commission, the



Scene of a competitive boat racing in the traditional Dragon Boat Festival in Taipei, Taiwan © Shutterstock/Chen Min Chun

Organisation for Economic Co-operation and Development, UNEP, UN-Habitat, the World Bank, and the governments of Bosnia-Herzegovina, Burkina Faso, and Colombia.

### **Programmes and Projects:**

Culture has a direct impact on economic growth. The cultural and creative industries account for over 30 million jobs worldwide. Global trade in creative goods more than doubled between 2004 and 2013, and today the creative economy contributes to 6.1 per cent of the global economy, representing USD 4.3 trillion per year.

Cultural and creative industries can also bolster a city's image and together with cultural heritage can help attract tourists. For example, the City of Östersund (central Sweden) that is part of the UNESCO Creative City Network is redefining its comparative advantages using creativity associated to regional productive landscapes from their rural surroundings.

Culture also has a direct impact on the social dimension of sustainability. The cultural and creative industries promote social inclusion, bringing together people of diverse backgrounds to exchange, innovate and create. From an environmental perspective, sustainable tourism, the cultural and creative industries, and heritage-based urban revitalization are part of programmes that aim to generate green employment, stimulate local development, and foster creativity.

UNESCO is promoting the use of culture in disaster-struck settings. In Christchurch, New Zealand, for example, heritage and creativity played a key role in post-crisis recovery after the earthquakes that caused many deaths as well as major damage to the city. The municipality established strategies involving heritage and cultural-based recovery from the beginning, which enhanced community ownership and ensured sustainability while utilizing the creative potential of the city and its inhabitants.

Culture is also being integrated into peacebuilding and the safeguarding of

World Heritage properties. In Timbuktu, Mali, for instance, reconstruction of mausoleums, libraries and mosques damaged by Islamist militants in recent conflicts was achieved by a community-led safeguarding approach, built on the ancestral knowledge of local inhabitants. Such achievements in Mali gave Timbuktu global attention, which was seen as a crucial factor in the trials at the International Criminal Court in 2016 regarding the destruction of Timbuktu mausoleums. In Dakar, Senegal, the development of urban spaces is also helping to achieve SDG 11 using culture. As part of the Dakar Afropixel Festival, Libremapping is a collaborative workshop-residency that brings together young digital artists from the city and other parts of the world to create projection mapping in Dakar's public spaces.

### **Financing:**

At the governmental level, many countries have begun to include culture in their development assistance frameworks. There is, additionally, a range of philanthropic and corporate foundations,

as well as private individuals, who have contributed to cultural projects for urban sustainability. A variety of private sector donors as well as bilateral and multilateral funds have supported field projects in addition to UN Development Assistance Framework (UNDAF) funding where possible.

While financing is often separated into clear public, private and “third sphere” distinctions, funding for sustainable urban development and creativity can be considered as context-dependent. Public private partnerships are growing in stature in many cities and point to a more participatory source of funding for cultural projects. The UNESCO Global Alliance for Cultural Diversity is expanding partnerships in cultural industries between public, private and civil society actors in developing countries.

In 2016, UNESCO also established a multi-donor facility, the Heritage Emergency Fund, to finance activities and projects that enable the cultural organization to assist its Member States in protecting natural and cultural heritage from disasters and conflicts by more effectively preparing for and responding to emergencies. However, there is need to increase financial resources to enable development and testing of methods and tools but also strengthen the capacities of cities and local authorities in terms of monitoring and reporting through capacity-building activities and advisory missions.

### **Capacity development:**

In the context of the Sendai Framework for Disaster Risk Reduction, UNESCO has coordinated technical aid and operational guidance for culturally sensitive post-disaster reconstruction, including the assessment of national-level capacity for disaster risk reduction in the culture sector.

During the annual meeting of the UNESCO Creative Cities Network, the cities and mayors are sensitized to the contribution of culture to the 2030 Agenda and the New Urban Agenda and member cities explore and exchange good practices for integrating culture and creativity in the local implementation of these global aspirations.

The 9<sup>th</sup> World Urban Forum was host to the training event “Creativity for Sustainable Cities: leveraging culture for social inclusion, economic development, and enhanced resilience.” The training looked to improve the capacity of a variety of stakeholders, including mayors, city officials, technicians and planners, as well as professionals and partners working in the culture sector. The session brought together representatives of UNESCO’s Creative Cities Network to share best practices and their own experience, repeating the training exercise in Jakarta, Indonesia, in 2018.

### **Best practices, recent innovations and experiences**

i. **Eradicating poverty and fostering social cohesion to leave no one behind:** Fostering inclusion and recognition of cultural identities that may lie outside the purview of current policy is an important factor in defeating poverty for sustainable urban development. In Rio de Janeiro, Brazil, the recognition of the *favelas* (a Brazilian Portuguese word for slum) as engines of culture, creativity, economic and social innovation has been demonstrated by their integration in the city’s branding process. The promotion of creativity in marginalized areas was facilitated by the construction of the Rubem Braga Elevator Complex as part of an integrated urban planning strategies

that fostered inclusivity for the urban poor and democratized access to urban public spaces, improving community safety and reducing crime, and the risk of landslides.

### **ii. Building a stable economy, including through entrepreneurship and job creation:**

Safeguarding cultural traditions can help revive the local economy and create job opportunities in rural settlements. The city of Suzhou, China, a UNESCO Creative City, has boosted its creative economy through silk embroidery. In the village of Shuang Wan Cun, ancillary textile production has been successfully revitalized through online selling, creating new jobs and attracting migrants to the village. A Chinese Folk Museum and the Fei Xiaotong Memorial Museum were established in 2010 in the nearby village of Kaixiangong to support rural tourism and strengthen the cultural roots of the local rural economy.

### **iii. Ensuring safe, secure and healthy environments:**

Transformative change can be fostered through culture-based urban projects that target a city’s social and economic inequalities. Medellin, Colombia, included the cultural component as part of a holistic approach to city planning aimed at reducing social inequalities. Public spaces were regenerated and the Parque Biblioteca España was built in 2007 to enhance the vitality of the Santo Domingo slum neighbourhood, boost the participation of all citizens in culture, and improve the quality of life of vulnerable communities. Pairing this culture initiative with the establishment of a metrocable allowed to considerably reduce homicide rates in the city from 1991 to 2010.

### 3.5 Targets 11.5 and 11.b - Disasters and Risk Reduction

**Target 11.5:** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.

**Indicator 11.5.1** Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population.

**Indicator 11.5.2** Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters.

**Target 11.b:** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

**Indicator 11.b.1** Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030.

**Indicator 11.b.2** Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies.

#### Key Messages

- National governments must put in place a right mix of mechanisms and investments to systematically collect information, statistics and best practices, while ensuring the full participation of local governments and civil society actors. Data availability gaps should be closed by March 2019, if countries are to be able to report against the Sendai Framework global targets as planned
- While disaster-related data are available from multiple sources, accessibility in the right format and in a timely manner has been noted by many countries as a major concern

#### Context

No country or sector is immune to the impacts of disasters, many of which are increasing in frequency and intensity due to the influence of climate change.<sup>xxvii</sup> Between 2005 and 2015, more than 1.5 billion people were affected by disasters in various ways; with women, children, youth and other vulnerable populations disproportionately impacted. If additional losses due to climate change were accounted for, the estimates would be even higher.<sup>xxviii</sup>

Despite disasters being a global phenomenon throughout history, the focus of international policy on disaster risk reduction is relatively new. While various countries, particularly those prone to disasters have historically developed local action frameworks on response and recovery, global guidance on reduction of risks from disasters and hazards was first developed through the *Hyogo Framework for Action 2005–2015: Building the resilience of nations and communities to disasters*. Since then, there has been a lot of focus on DRR, with continued calls for the establishment of mechanism for risk reduction, preparedness and resilience. The Sendai Framework for Disaster Risk Reduction 2015–2030 was adopted in March 2015 by 187 UN Member States during the third United Nations World Conference on Disaster Risk Reduction in Sendai, Japan, as a successor to the Hyogo Framework.

The Sendai Framework forms the global action structure for disaster risk reduction. It is a voluntary, non-binding agreement which recognizes that States have the primary role to reduce disaster risk, while noting that this responsibility should

be shared with other stakeholders, including local governments and the private sector. It focuses on the adoption of measures which deal with the three dimensions of disaster risk (exposure to hazards, vulnerability and capacity, and hazards' characteristics) to prevent the creation of new risk, reduce existing risk, and strengthen resilience. There are seven global targets and 38 global indicators recommended by the Open-ended Intergovernmental Expert Working Group (OIEWG) to measure global progress in the implementation of the Sendai Framework [A/71/644].<sup>22,xxix</sup> The Framework further has four priority areas: i) understanding disaster risk; ii) strengthening disaster risk governance to manage disaster risk; iii) investing in disaster risk reduction for resilience; and iv) enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction. The Sendai Framework identifies various forms of disasters, which it lists as including small- and large-scale, frequent and infrequent, sudden and slow-onset disasters caused by natural or human-made hazards, as well as related environmental, technological and biological hazards and risks.

Building on earlier efforts on securing global agreements to bolster disaster risk reduction efforts which is reflected in the Sendai Framework, Agenda 2030 provided entry points to integrate DRR as a cross-cutting theme that will contribute to sustainable development. There are a number of SDG targets related to DRR, four of which use the relevant global indicators of the Sendai Framework (1.5, 11.5, 11.b, and 13.1 – see figure 13), and in turn build bridges between the two global agenda. For example, reducing global disaster mortality, affected people, economic losses and damages to critical infrastructure and basic services

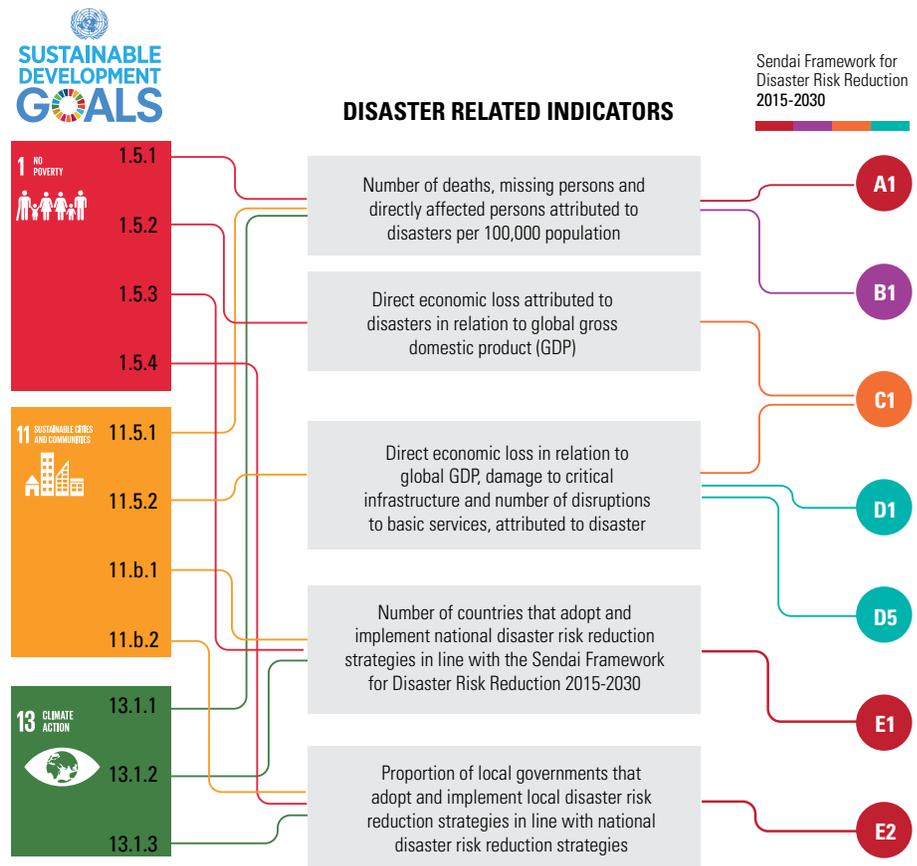
contribute to sustainable development and strengthen economic, social, health and environmental resilience. On the other hand, adopting and implementing disaster risk reduction strategies at the national and local levels enhance DRR, resulting in fewer losses.

To ensure good integration and coherence between the two global agendas, members of IAEG-SDGs proposed the use of the same indicators in measuring disaster-related global targets, which have been developed by the OIEWG. In March 2017, the UN Statistical Commission in its 48th session endorsed the report of the IAEG-SDGs proposing the recommended indicators of the OIEWG.<sup>23</sup> Computation methods and data requirements have

been developed during and after OIEWG, including sessions at the Global Platform in Cancun, Mexico, in May 2017. The technical guidance for monitoring and reporting on progress in achieving the global targets of the Sendai Framework is available online in the official six languages used in the United Nations.<sup>24</sup>

Beyond the SDGs, the Paris Agreement on Climate Change acknowledges the importance of disasters to the sustainable development agenda and aims, through various interventions, to "significantly reduce the risks and impacts of climate change". This further calls for global action to face disasters and climate change challenges collectively for attainment of sustainable development.

**Figure 13: Interlinkages between the Sendai Framework and SDGs**



UNISDR, as a custodian agency for the disaster risk reduction indicators, has been leading monitoring of the implementation of disaster risk reduction in collaboration with other partners. In 2007, for the monitoring of the Hyogo Framework for Action (HFA), UNISDR developed the HFA Monitor, a voluntary self-assessment of progress by Member States. In the four biannual reporting cycles between 2007 and 2015, 159 countries produced HFA national progress reports at least for one cycle. On the other hand, UNISDR has supported Member States to develop national disaster loss databases, which encompasses acquisition, collection, retrieval, query and analysis of disaster information of small, medium and large-scale events, based on official data, academic records, newspaper sources and institutional reports. The open-source and free-of-charge tool made available by UNISDR is the Disaster Inventory System - DesInventar (Sistema de Inventario de Desastres).<sup>25</sup>

Based on the recommendation by the OIEWG, UNISDR has since March 2018 launched a web-based Sendai Framework Monitoring System (SFM system) to assess global progress in the implementation of the Sendai Framework by using United Nations General Assembly endorsed indicators. The official counterparts at the country level (National Sendai Framework Focal Points) compile all inputs from their line ministries, national statistical offices, local governments and other entities, and report through the SFM system. Data provided by Member States corresponding to the years 2015–2017 was presented to UNDESA for monitoring of the SDGs, thereby reducing the reporting burden for monitoring of both global frameworks. In order to enhance monitoring and

### Box 13. Readiness of Member States to monitor the Sendai Framework

Monitoring of the disaster-related SDGs and the Sendai Framework will rely greatly on the availability and accessibility of the required data that needs to be sufficiently consistent and comparable over time to measure progress in the implementation of DRR. To assess the current state of data availability and its quality, UNISDR conducted a review of the readiness to report against the global targets under the Sendai Framework (targets include A - mortality; B – people affected; C – economic loss; D – critical infrastructure and services; E – disaster risk reduction strategies; F – international cooperation; G – early warning and risk information and assessment). Eighty-seven countries voluntarily reported to the data readiness review. The focus of the review was on the availability of national disaster-related data, data gaps and resource types required to fill the data gaps. It also assessed countries' current ability to set up baselines for measuring the global targets of the Sendai Framework. Findings from the review showed that while data was available for most countries for targets A and B (that is, 83 per cent for A-2 the number of death, and 66 per cent for B-2 the number of ill or injured people) with between 50 per cent and 60 per cent being able to establish baselines, data are more limited for targets C and D. Only 37–55 per cent of countries report having data on economic losses to productive assets, losses in critical infrastructure and cultural heritage, and disruptions to health, education and other basic services, with between 29 per cent and 33 per cent able to develop baselines. Targets E, F and G exhibit wide variations in data availability. From 57–72 per cent for data pertaining to early warning systems, risk information and people evacuated, 39–54 per cent of reporting countries for data on national and local DRR strategies under target E. The lowest data availability is observed for the indicators for target F, where 20–25 per cent of reporting countries cite that data is available. Consequently, countries were also asked to identify the resources that would be required to redress the gaps identified, and qualify their answers using the three recognized categories: financial resources, technology transfer and capacity-building. In most cases, financial resource most frequently appeared in responses followed by capacity-building and then technology transfer. There were exceptions, however, and capacity-building was the most needed resource to fill the data gap for measuring the indicators on early warning systems.

*Source: UNISDR (2017) Disaster-related Data for Sustainable Development Sendai Framework: Data Readiness Review 2017, Global Summary Report.*

reporting on progress in implementing the Sendai Framework at local, national, regional and global levels, the web-based monitoring system can also accommodate additional nationally defined indicators and targets.

UNISDR is continuing its support to Member States to retrofit their national disaster loss accounting systems for the

Sendai Framework Monitor with newly categorized information associated with the global targets and indicators. This includes incorporation of possible data disaggregation proposed by OIEWG and IAEG-SDGs as well as an extended set of hazards described in the Sendai Framework, namely man-made hazards, and related environmental, technological and biological hazards and risks.

**Data trends and challenges.**

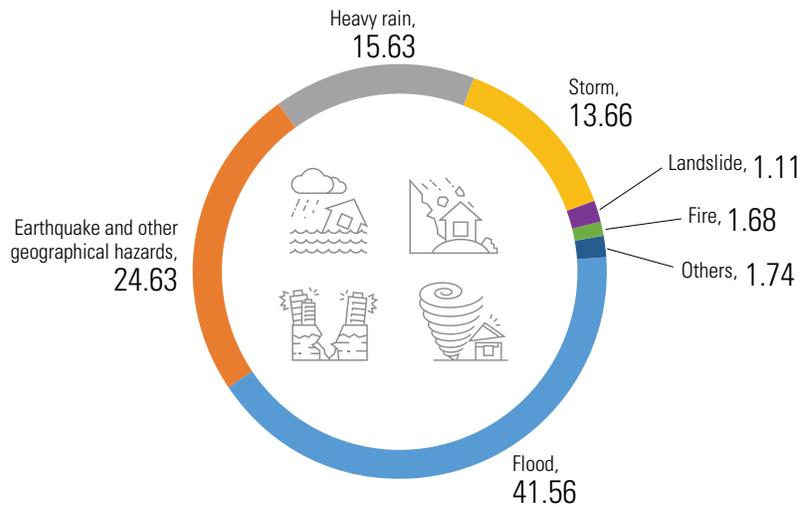
Disaster-related data is available from multiple sources with different criteria (see examples in box 13). Data for indicators 11.5.1 and 11.5.2 has been available for a number of countries in DesInventar and the SFM system. Data for indicators 11.b.1 and 11.b.2 is available for a limited number of countries as the monitoring system was just launched in March 2018, with data collection projected to increase gradually over the coming months. UNISDR and other partners are supporting Member States in the development of national and local DRR strategies through the provision of technical guidance and capacity development initiatives towards this goal.

To connect data to policy decisions on issues such as vulnerability factors (subgroups of population, affected areas) and hazard characteristics, data collection should be done for each hazardous event. If large-scale hazardous events and outliers are excluded disaster mortality triggered by hydrometeorological hazards can be observed in an upward trend, as shown in figure 15.

Data collected between 2005 and 2017 from 55 countries on the direct economic loss in housing damage indicates that flooding contributed to the highest amounts of damages,

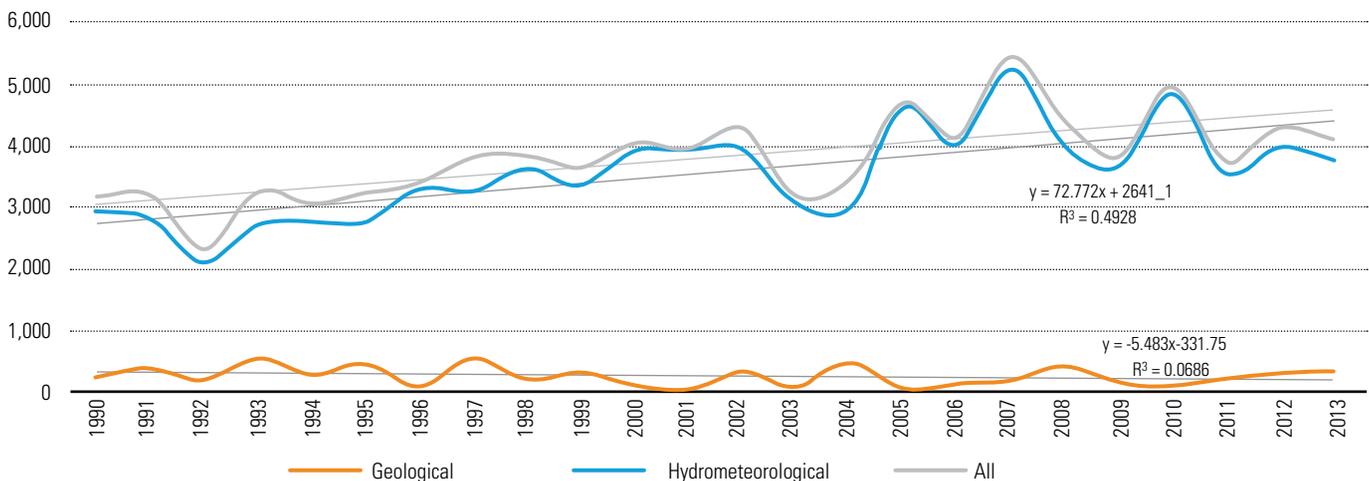
followed by earthquakes and geophysical hazards (figure 14). These variations call for deeper analysis of each sector and kinds of disasters, for informed policymaking.

**Figure 14. Direct economic loss in housing damage by hazard types in percentage (2005–2017)**



Source: SFM and DesInventar (2018) reported by 55 countries

**Figure 15. Internationally reported global disaster mortality (events with fewer than 100 deaths)**



Source: Global Assessment Report on Disaster Risk Reduction 2015 (UNISDR 2015)

## BOX 14. Exposed population to disasters and internationally reported data (JRC and Emergency Events Database, CRED)

Latest data generated for six major natural hazards<sup>26</sup> using a mix of geospatial and statistical methods shows that the global exposure of population and built-up surface to natural hazards have doubled in the last 40 years (1975–2015).<sup>xxx</sup> Earthquakes account for the highest number of people potentially exposed, while flooding is the most frequent natural hazard, for which about 1 billion people in 155 countries were potentially exposed in 2015. Regionally, Asia had the highest proportion of population exposed to flood-related disaster (76.9 per cent of the global population exposed) followed by Africa (12.2 per cent). In addition, about 11 per cent of the global built-up area was potentially exposed to flooding. Tropical cyclones threaten 89 countries in the world and the population exposed to cyclones increased from 1 billion in 1975 to 1.6 billion in 2015. Tsunamis affect coastal areas in many regions, but the most at-risk areas are more concentrated in Asia. In addition, the data indicates that the number of people living in seismic areas increased by 93 per cent in 40 years (from 1.4 billion in 1975 to 2.7 billion in 2015).

The *Emergency Events Database* (EM-DAT) is a free and interactive database that contains worldwide data on the occurrence and effects of natural and technological disasters over time, with certain thresholds. The database provides a platform to help countries, cities and organizations make vulnerability assessments, understand disaster trends and their impacts, and in turn make informed decisions for disaster preparedness, risk reduction and response. The database is compiled from various sources, including United Nations agencies, non-governmental organizations, insurance companies, research institutes and press agencies.<sup>xxxi</sup>

For monitoring the implementation of the Sendai Framework and the 2030 development agenda, data disaggregation by local governments, which can allow reclassification by urban and rural levels is required. Accessibility to disaster-related data in a timely manner has been noted by many countries as a major concern, particularly because disaster data is collected by different ministries and agencies as well as the private sector and NGOs for their own purposes. The restrictions to access are also associated with lack of data sharing protocols, or data sharing restrictions embedded in local and international legal instruments. With different return periods by hazard types of different intensities, there is a strong need of continuous data collection, for which most cities and countries are not prepared. Monitoring target 11.5 requires not only efficient data collection systems, but also the existence of a governance framework including institutional arrangements with enough human and financial capacity and resource.

While several guides and manuals are now available from UNISDR for global

monitoring and reporting, some countries do express a lack of localized data collection guidelines and standards which can be used to aggregate and disaggregate data from the lowest to highest units. Coordination between different actors and ministries has also been identified as a hindrance to disaster monitoring and management in many countries.

### **Awareness:**

UNISDR and a number of partners are leading the global work on methodology development, country monitoring guides and tools, and managing databases for reporting on these indicators. Using the guidelines and initial metadata, various capacity development activities have been conducted in international fora (for example, WUF, WDF), where UNISDR, UN-Habitat and partners have raised awareness about these indicators.

### **Policy:**

The growing global interest in disaster risk reduction, and the acknowledgement of

the importance of disaster risk reduction to regional, national and local development has amassed support among decision makers, politicians and leaders to support evidence-based disaster risk management and generation of related statistics. Many countries and cities have already established disaster management agencies. National statistical offices, however, need to push for development of the appropriate statistical policy frameworks to integrate disaster-related data into official statistics, as well as set up structures to help validate data.

Urban areas, owing to their high concentrations of population and infrastructure, are often more exposed and are more vulnerable to disasters than rural areas. There is a need to build resilient systems in cities, and equally mitigate underlying disaster risks. Countries and cities have identified the need to understand and be aware of disaster risks in the entire development process; and work together to deal with related challenges in a boundless manner, as reflected in Agenda 2030 and other global agendas.

At the SDGs level, mechanisms to achieve the set targets, which are also outlined in the Sendai Framework, require mainstreaming and integrating disaster risk reduction within and across all sectors. There is also need to review and promote the coherence and further development in policymaking, land use and urban planning, environment assessments, and informal and non-permanent housing, with guidelines and follow-up tools informed by anticipated demographic and environmental changes. Empowerment of local authorities through regulatory and financial means to work and coordinate with civil society and NGOs, communities and indigenous peoples and migrants in disaster risk management at the local level is also needed. Furthering existing and mobilizing new global and regional campaigns is also required to strengthen public awareness and education, promote a culture of disaster prevention, resilience and responsible citizenship, generate understanding of disaster risk, and support mutual learning and experience sharing.

SDG monitoring processes offer several opportunities for building synergies around other global frameworks for which countries can leverage and make progress towards disaster risk reduction.

To increase availability and access to disaster-related data in the next 2–3 years, national governments need to put in place mechanisms and make the necessary investments to collect information, statistics and best practices systematically while ensuring the full participation of public and private sectors, horizontally and vertically. One workable approach is to integrate disaster-related data within national statistical systems, which has been identified as being able to bring quality dividends by applying the fundamental principles of official statistics and, at the same time, facilitate integrated reporting to the SDGs and the Sendai Framework using multipurpose data sources; thereby reducing the reporting burden on Member States.<sup>xxxii</sup>

#### **Partnerships:**

Sharing of best practices of disaster-related data is essential to ensuring that lessons learnt from one disaster are rightly applied to all future emergencies. In 2017, for example, UNISDR, ECE and ESCAP established the Global Partnership for Disaster-Related Statistics, whose objective is to support the creation of statistical conventions for disaster-related statistics for the United Nations Statistical

Commission, with a view to establishing global statistics standards and guidance. The Sendai Framework Monitoring system, which has been operational since March 2018, also provides countries and cities with guidelines on the collection of disaster-related data, through a set of indicators endorsed by Member States.

#### **Financing:**

Appropriate financing for urban development and resilience, including for natural and human-made disaster management is essential. Promoting cost sharing between different authorities and stakeholders including the active involvement of private sector actors, such as infrastructure and insurance companies, are important. This can reduce the financial burden of initiatives to alleviate the consequences of natural disasters and disaster prevention measures. Strengthening microfinance institutions and homeowners associations also contributes to scaling up of financing for urban risk strategies. Public-Private Partnerships (PPPs) play a role in creating smart, sustainable and resilient cities and overcoming financing constraints. However, it is important that such partnerships are designed in way that they are not a source of risk to public finances and that affordability and inclusiveness considerations are duly taken into account.

The ECE, which has been working on the topic for over two decades, sees the need to adapt the traditional PPP model to the SDGs to avoid some of these risks by putting people at the core. While the value for money concept remains important, with the adoption of the 2030 Agenda, the challenge is to implement PPPs according to a broader set of holistic criteria and undertake projects that from inception to termination create ‘value for people’. One

### **Box 15. Disaster risk management in Serbia**

Serbia is advancing the disaster risk management agenda in the country by revisiting existing practices and introducing new approaches. The action plan for implementation of a National Disaster Risk Management Programme for period 2017–2020 was adopted by the Government in March 2017. The plan was coordinated by the Public Investment Management Office -with participation of all line ministries, special organizations, local self-governments, non-governmental organizations, and other stakeholders in the country. Along with the action plan, a Disaster Risk Financing Programme has also been adopted. The components are set in line with the four priorities of the Sendai Framework for Disaster Risk Reduction 2015–2030, including local disaster resilience. Additionally, a Draft Law on Disaster Risk Reduction and Crisis Management has been developed. This draft is based on international standards, the Sendai Framework and the experience that Serbian institutions had gained in severe disasters of 2014.

of the most important criterion for people-first PPP projects is to make infrastructure more resilient. An International PPP Specialist Centre of Excellence on resilient PPP infrastructure affiliated to the ECE has been recently set up in New Orleans, USA, to elaborate international best PPP practices and collect case studies showcasing the use of PPPs to mitigate and facilitate the recovery from natural disasters worldwide.

In addition, the 100 Resilient Cities initiative (<https://www.100resilientcities.org>) provides financial assistance to large and medium sized cities globally to recruit a dedicated local Chief Resilience Officer (CRO). The CROs' mission is to integrate the urban policy sectors to holistically drive the development and implementation of a city resilience strategy to address urban challenges and slow-burn stresses, and enhance their city's capacity to adapt and continue flourishing in the face of unforeseen and not calculable disruptions.

### **Capacity development:**

UNISDR's Global Education and Training Institute, together with affiliated partners, focuses on strengthening the capacity of local governments through the delivery of targeted training. Training focuses on achieving the global target(s) stipulated in the Sendai Framework "Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020." The common indicators are in SDGs 1, 11, and 13. Training is provided on demand from local governments. This is work in progress with at least 20 local disaster risk reduction plans and strategies expected to be completed by early 2019.

This work supports the Making Cities Resilient Campaign launched in May

2010, to support local governments to reduce risk and build urban resilience. The campaign offers solutions and tools for local governments and actors to identify gaps in their resilience and to increase financial, technical and knowledge-based capacity for development planning and risk management. Since 2015, the campaign has shifted focus onto more implementation support, partner engagement, investment-cooperation opportunities, city-to-city learning and cooperation, local action planning and monitoring of progress. By joining the campaign, cities become a part of a broad alliance of resilient cities worldwide. Today at least 3,800 cities have joined, which is evidence of their commitment to implement the Sendai Framework and 2030 development agenda.

In 2018 UNISDR is organizing several global, regional and subregional technical workshops on the Sendai Framework Monitor. It is also supporting national governments to organize similar national and sub-national meetings. Local governments, and their local partners, are imparting skills to enable effective use of tools such as the Disaster Resilience Scorecard for cities. They are also providing a simple methodology that can support development of DRR plans from the Scorecard's outputs. The 2017 *Handbook for Local and Government Leaders* under the Making Cities Resilient Campaign provides practical examples on how local governments can develop resilience action plans to support the achievement of this indicator as well as the related Sendai target to 2020.

In addition, the Open Data Infrastructure for City Resilience provides examples of over 25 cities that are innovating local disaster resilience plans under this indicator through the application of open data tools.

### **Technologies:**

The presence of massive geospatial data resources have proven to be effective tools for disaster monitoring, is an imminent opportunity for cities and countries to collect information on the indicators, and in turn make informed decisions. The Working Group on Geospatial Information of the Inter-agency and Expert Group on SDGs Indicators (IAEG-SDGs) recommends and guides countries to explore the added value of using other data such as Earth Observation, crowdsourced geospatial disaster-related and social network data to amplify the quality and applicability of disaster loss data and disaster-related statistics. In addition, UNOOSA/ UN-SPIDER, (together with many partners from the Earth Observations from Space, civil protection communities, and regional and international organizations) are spearheading efforts for the incorporation of space-based technologies in the context of the Sendai Framework.

Artificial intelligence can also be used in combination with geospatial and crowdsourced information for much more accurate information on settlements, formal and informal, and general services including the condition of infrastructure networks. Many countries in the Asia-Pacific region are using light detection and ranging technology to map cities, including open and underground spaces, for disaster risk reduction. In combination with representative ground-truthing samples, data generated from these new technologies can create simulated models of the real-world landscape, which can be analysed within a geospatial environment. For example, the Advanced Land Observing Satellite-2 of Japan, launched in 2014, has already provided significant Earth observation capabilities to support disaster management and tackle global warming. Similarly, the Internet of Things

linked up with spatial data has been used to enhance the regional preparedness for disasters, particularly through real-time monitoring of hazards and risk assessment in regions such as Asia-Pacific. This type of data can be valuable in informing decision-making at the municipal level and provide augmented reality perspectives or live walk-through demonstrations of places and areas of concern for risk-sensitive infrastructure development.

Since 2017, ESCAP has provided around 220 satellite imagery, tailored tools and products to its Member States for local early warning, response and damage assessment of earthquakes, floods, drought, typhoons, cyclones and landslides plans. These space-based data, products and services are equivalent to approximately US\$1 million (in data, products and services), all of which are provided to Member States, through the

Regional Space Applications Programme for Sustainable Development network and the partnership with other United Nations agencies, and international and regional initiatives.

Member States are also drawing on geospatial data generated by digital humanitarian initiatives, such as the

Humanitarian OpenStreetMap Team, which emerged in response to the 2010 earthquake in Haiti and the 2015 earthquake in Nepal. These initiatives helped to locate the most vulnerable and affected population and provided up-to-date data on the layout and access to the affected areas, and the location of vital infrastructure and services.

### **Box 16. Urban ecosystem based adaptation by UN-Environment**

UN Environment Programme is also developing and implementing country and regional projects on Urban Ecosystem-based Adaptation in Latin America, Asia-Pacific and Africa with GEF/LDCF funding. Based on results and good practices of those projects, it is elaborating a strategy for Ecosystem-based Adaptation (EbA) in urban areas with the goal of supporting in a coherent and effective way member states in their efforts to increase their urban resilience to climate change. In parallel, UN Environment Programme is also catalysing university resources to address climate change & sustainability at the city scale through the Educational Partnerships for Innovation in Communities (EPIC) Framework.

### **Box 17. Examples of regional and country-based efforts on disaster risk reduction**

In Latin America and the Caribbean, over the past decades, disaster preparedness has increased, and ECLAC is working actively with local authorities, and national and international partners in developing and implementing strategies and projects on urban resilience. The Arab region is on track in implementing the Arab Strategy on Disaster Risk reduction and the related action plan. Nine of the 22 members of the League of Arab States have either completed or initiated the development of national disaster loss databases. They include Djibouti, Egypt, Jordan, Lebanon, Morocco, Palestine, Syria, Yemen and Tunisia.

In Latin America, projects are developed and implemented building capacity in DRR and raising awareness among local authorities and citizens on early warning, including guidelines to measure the economic and social costs of disaster impact. In the Arab region, UNISDR has continued to promote the “Making Cities Resilient” campaign to support urban areas to become more resilient to disasters. Almost 300 cities and municipalities in the Arab region have joined the campaign (20 per cent of all cities worldwide). In Latin America and the Caribbean, the European Union is a vital partner for disaster risk reduction initiatives.

Latin America and the Caribbean developed the project “Global Initiative on Disaster Risk Management” commissioned by the German Federal Ministry of Economic Cooperation and Development and implemented by ECLAC with the support of GIZ in Angra Dos Reis (Brazil), Barranquilla (Colombia) and Chacabuco (Chile). A subregional action plan for the Caribbean region has been developed and currently being implemented. In the Arab region, UNISDR launched a DRR Arab States coordination network as a community of practice to promote information sharing and joint action for DRR at regional and national level in the Arab States. It serves as a regional mechanism to discuss DRR issues among international partners working in and on Arab States to plan jointly implementation and monitoring of disaster risk reduction related activities.<sup>27</sup>

Regional organizations are active in DRR programmes, but on different levels of preparedness. While the CARICOM, OAS and the League of Arab States hold regular intergovernmental meetings, regional DRR and DM frameworks / conventions, the LA region has also established a specific organization for DRM, a regional disaster relief fund, regional cooperation schemes, insurance schemes, rapid response mechanisms, technical training and research.<sup>28</sup>

### 3.6 Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

**Indicator 11.6.1 Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated by cities.**

#### Key messages

Managing and controlling municipal solid waste and in an environmentally adequate manner is crucial for protecting the local and the global environment. If a municipal solid waste management system is established well, it provides numerous benefits such as employment opportunities for youth and women, energy generation and helps to improve the overall urban environment leading to improved public health and improvements in ecosystems. Evidence shows that municipal solid waste collection coverage is higher in high-income countries than in middle and low income countries. The health and environmental impacts of poorly managed municipal solid waste are more severe in densely populated urban areas and in slums, where urban infrastructure and services are often non-existent or inadequate. The cost estimates available suggest strongly that the economic costs to society of inadequate waste management are much greater than the financial costs of environmentally sound waste management. SDGs offer one of the most ambitious frameworks for addressing solid waste management in the 21<sup>st</sup> century.



Solid Waste Management is crucial for protecting the local and global environment. High Income countries account for about half of the global waste generated. In Low Income Countries, waste collection is below 50%.

#### Context

Today, 54 per cent of the world's population lives in urban areas, and this proportion is expected to increase to 70 per cent by 2050. This urbanization trend combined with the overall growth of the world's population could add another 2.5 billion people to the urban population by 2050. This means that a rapid increase in urban solid waste generation will take place. As urbanization and population growth will continue, it is expected that solid waste generation will double by 2025. However, many cities are failing in proper collection and transportation as well as environmentally sound treatment and disposal of waste. Global Waste Management Outlook estimated that at least 2 billion people do not have access to regular waste collection. UN-Habitat's report estimated in Africa, only 10 per cent of the solid waste in poor settlements is collected. Uncollected waste blocks urban drainage resulting in the spread of infectious diseases. Leachate generated in uncontrolled dumpsites pollutes surface and groundwater as well as the coastal environment. Dumpsites located in coastal areas are one of the largest sources of marine litter and plastic pollution. Open dumpsites are also major source of Green House Gases (GHG). If the situation takes on the business as usual scenario then dumpsites account for 8-10 per cent of the global anthropogenic emission by 2025.

**Data trends and challenges.**

Waste generation is growing rapidly in all but the high-income regions of the world, as populations rise, migration to cities continues, and economies develop. In 2010, high-income countries accounted for around half of all waste generation. These trends are expected to change quickly, with Asia overtaking these countries in terms of overall municipal solid waste generation by around 2030, and Africa potentially overtaking both later in the century. Countries define municipal solid waste in many ways depending on which sector collects the waste and hence it is

important to have a working definition of what constitutes municipal solid waste. At the global level, it is defined as waste generated by households and wastes of similar nature generated by either commercial and industrial institutions or by institutions such as schools, hospitals or care facilities, prisons; and from public spaces such as markets, streets, slaughter houses, public toilets, bus stops, parks, and gardens. This working definition excludes hazardous waste, which is generated from manufacturing processes since it requires special waste management streams separate from other wastes. Other experts suggest that industrial, construction and

demolition waste should be included in the definition. Statistics on solid waste have been largely unreliable since, in some countries, it captures informal activities of system loses, while others monitor solid waste based on weighbridge records with regular monitoring, but often with lack of exactly what is in the waste stream. Consequently, data has been difficult to compare between cities but even within the same city due to inconsistencies in data records, collection methods and seasonal variations. Data on waste volumes as well as quantities are vital for planning the waste collection strategies. Evidence suggests that significant

**Figure 16. Solid waste management indicators in 20 cities**

	Drivers for solid waste management				Governance			
	Public health collection/sweeping coverage (%)	Public health/environment Controlled disposal/incinerated of total disposed /incinerated (%)	Environmental control Waste captured by the waste system (%)	Resource management Materials prevented or recovered (%)	Inclusivity Degree of user-inclusivity	Inclusivity Degree of provider-inclusivity	Financial sustainability Population using and paying for collection as percentage of total population	Institutional coherence Degree of institutional coherence
Adelaide	100%	100%	100%	54%	HIGH	HIGH	100%	HIGH
Bamako	57%	0%	57%	85%	MEDIUM	MEDIUM	95%	LOW
Belo Horizonte	95%	100%	100%	1%	HIGH	HIGH	85%	HIGH
Bengaluru	70%	78%	90%	25%	MEDIUM	MEDIUM	40%	MEDIUM
Canete	73%	81%	83%	12%	MEDIUM	HIGH	40%	HIGH
Curepipe	100%	100%	100%	NA	LOW	LOW	0%	HIGH
Delhi	90%	100%	76%	33%	HIGH	MEDIUM	0%	LOW
Dhaka	55%	90%	56%	18%	MEDIUM	MEDIUM	80%	HIGH
Ghorahi	46%	100%	88%	11%	MEDIUM	LOW	0%	MEDIUM
Kunming	100%	100%	100%	NA	MEDIUM	MEDIUM	50%	HIGH
Lusaka	45%	100%	63%	6%	MEDIUM	MEDIUM	100%	MEDIUM
Managua	82%	100%	97%	19%	MEDIUM	LOW	10%	MEDIUM
Moshi	61%	78%	90%	18%	MEDIUM	LOW	35%	MEDIUM
Nairobi	65%	65%	70%	24%	MEDIUM	HIGH	45%	LOW
Quezon City	99%	100%	99%	39%	MEDIUM	MEDIUM	20%	HIGH
Rotterdam	100%	100%	100%	30%	HIGH	LOW	100%	HIGH
San Francisco	100%	100%	100%	72%	HIGH	LOW	100%	HIGH
Sousse	99%	100%	100%	6%	LOW	LOW	50%	MEDIUM
Tompkins County	100%	100%	100%	61%	HIGH	MEDIUM	95%	HIGH
Varna	100%	100%	100%	27%	LOW	LOW	100%	HIGH
Average	82%	90%	88%	30%			57%	
Median	93%	100%	98%	25%			50%	

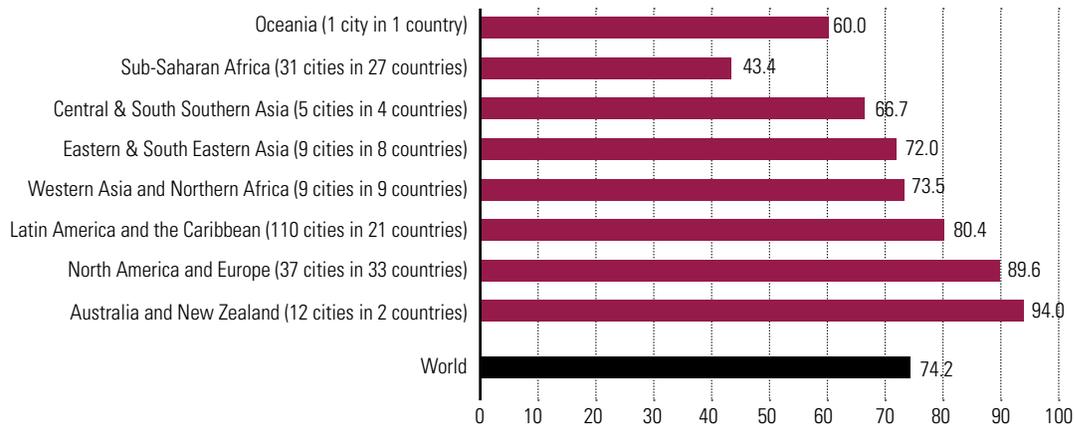
Source: UN-Habitat 2010: Global report on Solid Waste Management in the World's Cities.

progress has been made in many middle-income countries over the past few years, particularly those with gross national income (GNI) per capita above USD 2,500 per year. At the same time, median collection coverage is still below 50 per

cent in low-income countries and figures are much lower in some countries. It also drops sharply in the more rural areas of many countries. It is estimated that at least 2 billion people worldwide still lack access to solid waste collection.

Today, more than 600 cities have data on municipal solid waste collection coverage<sup>29</sup> up from the 20 cities that were reported in the global report on *Solid Waste Management in 2003* (figure 16).

**Figure 17. Municipal Solid Waste Collection Coverage (%) (The amount of Waste collected as a proportion of total generated)**



Source: UN-Habitat Global Urban Indicators Database

### Box 18. Challenges in indicator wording and proposed revisions

In January 2018, UN-Habitat and UN Environment jointly co-organized an Expert Group Meeting on Waste SDG Indicators focusing on 11.6.1 on urban solid waste, 12.4.2 on hazardous waste, and 12.5.1 on national recycling rate to establish robust and coherent monitoring methodologies. To ensure coherence of indicator 11.6.1 with existing waste statistics frameworks and globally accepted definitions, experts at the EGM agreed that a rewording of the indicator was necessary, and proposed it to read as “Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal solid waste generated by cities”

The purpose of the rewording is to maintain the original intention of the indicator but improve the coherence with existing systems and avoid redundancy. Experts outlined the following aspects, which the revision sought to address;

- There is no agreed definition of “urban solid waste”, while “municipal solid waste” is a globally accepted notion. Most of the existing waste statistics frameworks including UNSD and UNEP Environmental Statistics, Eurostat, OECD Environmental statistics and other countries’ waste statistics follow the definition of municipal solid waste.
- “Municipal solid waste collected” can define the regularity of the collection according to frequency. Therefore the removal of the word “regularly” was proposed to avoid redundancy.
- Adequacy in the current indicator is challenging because this is a subjective word and would have a risk in misleading judgment. The word “controlled” that allows more objective judgment of level of control of facilities was supported by experts.
- The word “final” is proposed for deletion since the failure of pollution control in waste management facility could happen in the middle of the process.
- The word “discharge” is also proposed for deletion since it is a terminology used in the wastewater sector, not in the solid waste management sector.

**Awareness:**

The global monitoring system for the waste-related SDG indicators is being built on the current ongoing work. The existing global waste data collection system includes the Basel Convention's national reporting system on the generation, import and export of hazardous and other wastes, the UNSD/ UNEP Questionnaire on Environment Statistics (waste statistics), the OECD/ Eurostat Questionnaire on Waste Statistics, and UN-Habitat's CPI. The existing data collection system provides many necessary statistics for calculation of SDG indicators on waste, nevertheless further work remains to be done to provide all of the basic statistics necessary for the indicators. The UNSD/ UNEP questionnaire covers the non-OECD/Eurostat countries while the OECD/Eurostat questionnaire covers the remaining countries. They both include statistics on waste generated at the national level, municipal waste collected and treated at the national level, the composition of municipal waste, and the generation and treatment of hazardous waste. In addition, the UNSD/UNEP questionnaire includes municipal waste collected and treated at the city level. Some waste data are being collected at the city level separately by UN-Habitat and UNEP. UN-Habitat publishes these in the *Status of Solid Waste Management in the World Cities*, and UNEP publishes its own in *Global Waste Management Outlook*. These reports include solid waste data such as total waste generation, collection coverage and percentage of waste by treatment and disposal types that have been collected in 39 cities. The methodology used here has been developed and refined and is now available as wasteaware indicators.<sup>30</sup> The data required for waste policy and SDG monitoring are vast and data to

produce the indicator "the percentage of waste regularly collected and adequately discharged" are being collected through existing data gathered, but the data availability and quality remain a challenge. Further, in February 2017 UNECE established a Task Force on Waste Statistics. The objective of the Task Force is to develop a conceptual framework on waste statistics and a draft glossary of the most important terms and definitions in waste statistics.

Several expert group meetings have been organized between 2016 and 2018 to refine and improve concepts and monitoring methodologies, including strategies for supporting municipalities on the collection of data for the relevant components of the indicator in collaboration with other stakeholders such as the national statistical agencies. Global awareness of the need for smart and efficient solid waste management has also increased.

Global data shows that cities everywhere are making progress in solid waste management; this includes relatively small cities with limited resources.

According to several integrated and sustainable solid waste management strategies, an efficient management system contributes to improvement of quality of life in urban areas by ensuring healthy conditions in cities, especially through the provision of quality waste collection services. There is more evidence to demonstrate that rates of diarrhoea and acute respiratory infections are significantly higher for children living in households where solid waste is poorly managed or burnt in the neighbourhood, compared to households in urban areas where there is a routine and regular solid waste collection service. Many cities and urban areas have learnt from these lessons and

today cities globally seek to manage and control the growing quantities of waste to ensure that they maintain a clean environment for all urban dwellers.

**Policy:**

Extending MSW collection to nearly 100 per cent for the urban population is a public health priority and many urban policies are working towards this target. Experience suggests that an effective waste collection system requires a continuous use of three categories of policy instruments in a coherent mix: (1) "direct regulation", comprising legislation accompanied by its keen enforcement, (2) "economic instruments", providing incentives and disincentives for specific waste practices, and (3) "social instruments", based on communication and interaction with stakeholders. Efficient data collection systems to monitor the entire waste management chains require integration in these policy instruments. Effective waste governance will also depend on the institutional framework in place. Institutional capacities to prepare legislation and how to enforce it are important.

Improving the coverage of waste collection services contributes to the several other SDGs including Goals 1,3, 4, 5, 6, 8, 12, 13 and several other targets related to partnerships since cities need to work with the private formal and informal sectors, communities, and civil society to improve governance and efficiency of solid waste collection services. SDGs hence offer one of the most ambitious frameworks for employment of solid waste management in the 21<sup>st</sup> century. Many cities in developing countries still maintain their informal recycling systems, which provide a source of livelihood to many urban poor residents. Unfortunately,

compiling quality data on waste collection and treatment has long been a challenge. The available city estimates are diverse, not verified or reliable, and often rather dated. Therefore, transforming waste data into reliable waste statistics requires guidance by global frameworks and standardization. Major areas of concern include lack of standard definitions, common understanding of concepts, and classifications. Many cities in the developing world still rely on estimates of municipal solid waste based on the volume of the vehicles used for collection and disposal, which makes it often unclear at what point estimates or measurements have been made and whether the data refer to municipal solid waste or to all waste in the city, or whether it is waste as generated, or as collected, or as delivered to a disposal site, with no prior note on whether some separation of materials for recycling already took place before the measurement was or was not made.

### **Partnerships:**

Vital lessons such as partnerships arrangements for successful solid waste management systems or allocation and distribution of roles, or financing mechanisms are key to the success of monitoring solid waste management. Cities and municipalities cannot manage and monitor waste management entirely on their own. Instead, they need to work within a national regulatory framework that includes shared responsibilities with large waste generators and producers, private and public waste collection firms, citizens, along with the other stakeholders in the supply chain. Embedding an efficient monitoring system in all the waste management chains will ensure a good way of improving the statistics on municipal solid waste management. Therefore, monitoring SDG indicator

11.6.1, requires cities, municipalities, commercial and community waste sectors to work together to ensure that all waste generated in a city is properly managed, recorded and reported in a cost-effective manner. The Climate and Clean Air Coalition has a Municipal Solid Waste (MSW) Initiative, which has helped over 50 cities in waste assessments and with a subset of these cities on management plans and feasibility studies.

Also, close communication and dialogue are needed among United Nations agencies, private sector, local actors and waste experts, in order to establish an implementable and coherent waste-related SDG indicator monitoring system where national and local governments can support monitoring. If the monitoring system is too complicated and costly for Member States and local governments, the waste-related SDG indicators cannot be measured, and unmeasured targets cannot be achieved.

UN-Habitat started a Joint Programme on Waste SDG Indicator Monitoring and Capacity Development with UNEP, the Secretariat of the Basel, Rotterdam and Stockholm Conventions. and UNSD to develop a coherent monitoring methodology through the waste-related SDG indicators including 11.6.1, 12.4.2 and 12.5.1. Currently, discussions are ongoing to include United Nations University in the partnership to support e-waste tracking.

### **Financing:**

The economic costs of not dealing with waste management problems in developing countries are difficult to quantify, but the available evidence suggests that they exceed the financial costs of environmentally sound waste management. Therefore, investment in waste management is

an urgent political priority. Innovative financing instruments can enhance the efficiency of funds directed to waste management. For example, output-based financing has shown positive results. But overall, whether private or public, the available financing or refinancing options for solid waste management remains minimal, necessitating the need to choose those financing models that are most likely to secure revenue and investment capital while delivering reliable services. Such financing models should integrate mechanisms that support good governance, accountability, and reporting and monitoring that matches the global standards and indicators.

### **Capacity development:**

Clearly, there is a lack of data in some cities and the poor reliability of available data on solid waste management, and not just in cities from low- and middle-income countries, but even in some advanced countries. These issues call for significant investment in advocacy and retraining of stakeholders involved in the data production chains that feed the various urban solid waste databases locally and nationally. The custodian agencies, including UN-Habitat and UNEP, started working together to develop user-friendly guides and other tools on how to monitor and report on waste SDG indicators.

### **Indicator 11.6.2: Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted).**

#### **Key messages**

- Air pollution has a range of negative impacts, including human health, damage to ecosystems, food crops and the built environment and is currently responsible for around 3.4 million deaths annually.
- Air quality is worse off in developing regions than those developed. Up to 97 per cent of cities with more than 100,000 inhabitants do not meet WHO air quality guidelines, while this percentage reaches 49 per cent in developed countries.
- A multisectoral approach is needed to develop and effectively implement long-term policies that reduce the risks of air pollution to health. More support directly to cities to enhance their systems (hardware and software) and human resources to monitor and report on air quality remains a key requirement and challenge, especially for the developing countries.



#### **Air quality in cities is alarming**

Timely and inclusive action by public authorities based on a multi-sectoral approach is required to address air quality in rapidly industrializing countries with large urban populations. Air quality is worse in developing countries than in developed countries. 97% of cities in the developing countries do not meet air quality standards versus 49% in developed countries.

#### **Context**

Air pollution is not only known to increase risks for a wide range of diseases, such as respiratory and heart diseases, but is currently responsible for around 3.4 million deaths annually. Studies indicate that in recent years exposure levels have increased significantly in some parts of the world, particularly in rapidly industrializing countries with large populations. Exposure to air pollutants is one of the global environmental challenges of the 21<sup>st</sup> century that is largely beyond the control of individuals. Such pollution affects everyone, regardless of geography or social status and thus requires action by public authorities at the national, regional and international levels. The SDG indicator 11.6.2 measures the annual mean levels of fine particulate matter in cities. WHO as the lead custodian agency has worked with other stakeholders including UNEP, UN-Habitat to improve definitions of concepts, data availability, quality and coverage on air pollution in cities.

#### **Data trends and challenges:**

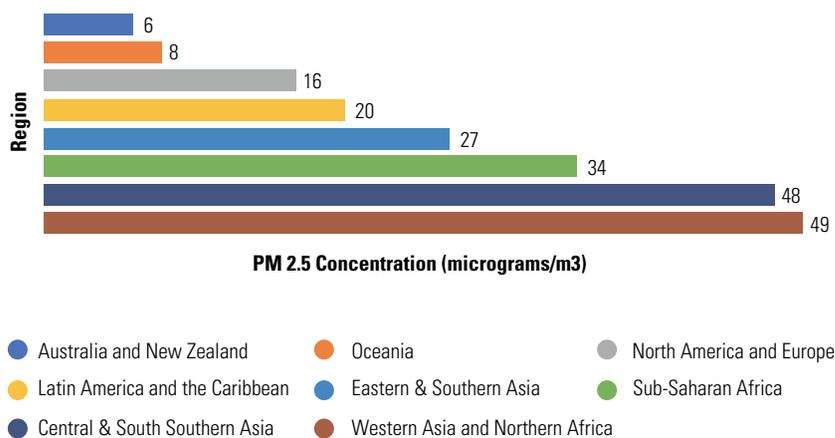
Data is now available for over 1,000 cities and 4,000 human settlements. Air pollution can be defined as the emission of harmful substances to the atmosphere. This broad definition therefore encapsulates many pollutants, including: Sulphur dioxide, nitrogen oxides, ozone, particulate matter (small suspended particles of varying sizes), carbon monoxide and volatile organic compounds.

Despite the advancements in technologies in monitoring of air pollution, there are still many gaps in global monitoring that impedes better understanding of the risks air pollution poses to human health and ecosystems.

Air pollution has a range of negative impacts, including human health, damage to ecosystems, food crops and the built environment which requires local and global monitoring systems working in parallel. Data is, therefore, collected through a combination of satellite observations, global air transport models, local meteorological conditions, and local ground measurements where available. Exposure to PM<sub>2.5</sub> and ozone is then calculated across grid cells of 0.1 x 0.1 degrees longitude and latitude (11km x 11km at the equator). With data on population density within each grid cell, the population-weighted average exposure of the population of a given country is then calculated. Particulate matter measuring less than 2.5 micrometers ( $\mu\text{m}$ ) in diameter (PM<sub>2.5</sub>) is a major concern among all air pollutants for human health since they can penetrate the lungs, impacting respiratory health.<sup>xxxiii</sup> PM<sub>2.5</sub> is thus a key indicator of the status of air quality.

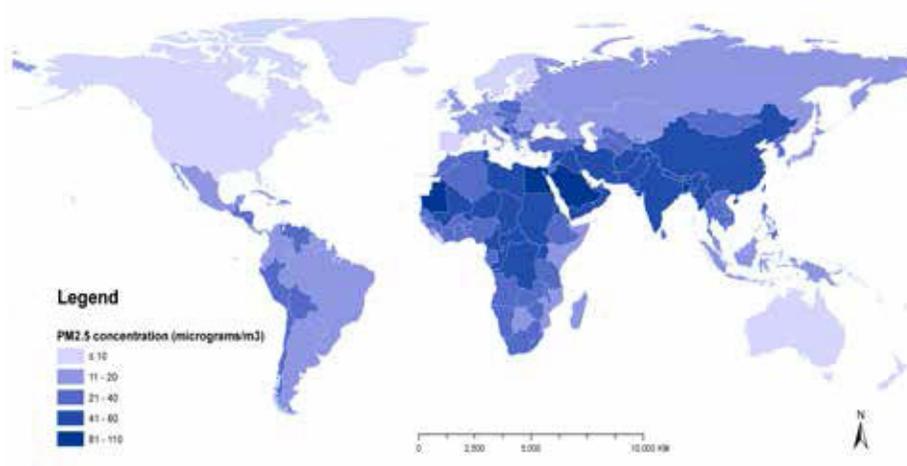
Latest estimates show that, for most developed countries, exposure to PM<sub>2.5</sub> has been declining gradually between 1990 and 2015.<sup>xxxiv</sup> In 2015, Northern Africa and Western Asia, and Central and Southern Asia, recorded the highest PM<sub>2.5</sub> concentrations estimated at 49 and 48  $\mu\text{g}/\text{m}^3$ , respectively (Figure 18). The Oceania subregion recorded the lowest concentrations. These values point towards better air quality in the developed regions and worse air quality in the developing regions, where the highest levels of urbanization are also happening. This continually puts more people at risk of health problems and deaths related to PM<sub>2.5</sub> (see figure 18). The WHO's latest air quality data shows that 97 per cent of cities in low- and middle-income countries with more than 100,000 inhabitants do not meet WHO air quality guidelines, although for cities

**Figure 18. PM<sub>2.5</sub> concentration per region in 2015**



Source: State of Global Air Report, 2017

**Figure 19. PM<sub>2.5</sub> concentration per country, 2015**



Source: State of Global Air Report, 2017

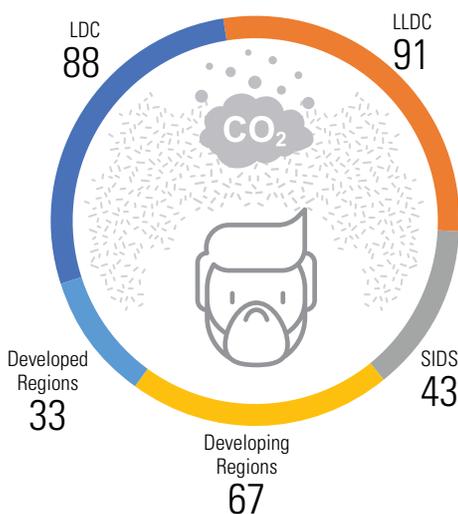
in high-income countries this figure drops down to 49 per cent.<sup>31</sup>

The available figures vary widely across countries and regions. For example,

while countries across Europe, North America and Oceania have levels of 5–10 $\mu\text{g}/\text{m}^3$ , countries like Egypt and Saudi Arabia have values as high as 105  $\mu\text{g}/\text{m}^3$ .<sup>xxxv</sup>

While the data that is currently available is not disaggregated by age, children are at an increasing risk of dying from air pollution, raising the need for more action to reduce various forms of air pollution if the vision of leaving no one behind is to be achieved. Globally, it is estimated that the number of deaths resulting from outdoor air pollution increased from 3.4 million in 1990 to 4.2 million deaths in 2016. Estimates show that in 2015, the death rate due to air pollution was highest in landlocked developing countries (LLDC) followed by least developed countries (LDCs), and lowest in developed regions (see figure 20).

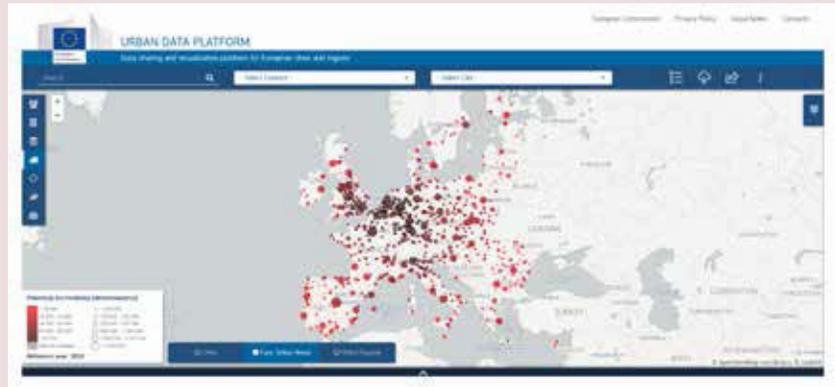
**Figure 20. Death rate from ambient PM2.5 air pollution in 2015- (per 100,000 population)**



Source: State of Global Air Report, 2017  
\* SIDS - Small Island Developing States

### Box 19. Database on air pollution in European Cities

Data on PM2.5 emissions for European cities have been made available in a user-friendly way by the European Commission. This indicator, along with data on PM10, ozone emissions, nitrogen dioxide concentration, as well as population exposed, are available on the Urban Data Platform, a joint initiative of the Directorate General Joint Research Centre and the Directorate General for Regional and Urban Policy of the European Commission. It aims to provide access to information on the status and trends of European cities and their surrounding regions. The design and implementation of the Urban Data Platform has been developed by the Land-Use-based Integrated Sustainability Assessment (LUIA) Territorial Modelling Platform (<https://ec.europa.eu/jrc/en/luisa>). The Joint Research Centre is also working on a global city database that will make information available in a user-friendly way.



Source: <http://urban.jrc.ec.europa.eu>

### Awareness and partnerships.

Since 2016, urban health initiatives such as the global BreathLife campaign and the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants have been vocal advocates for clean air over human settlements. The campaign involves partners such as - WHO, UNEP, World Bank, UN-Habitat and several countries. At the global levels, air pollution is covered within Agenda 2030 and the New Urban Agenda, the Paris Agreement (seeking to improve air quality, reduce greenhouse gas emissions and the effects

of air pollution to health), and the REDD+ initiative (that seeks to reduce emissions by halting deforestation and forest degradation).

A multisectoral approach, engaging such relevant sectors as transport, housing, energy production and industry, is needed to develop and effectively implement long-term policies that reduce the risks of air pollution to health. Most high-income countries have well-developed air quality monitoring and reporting networks at the ground level, which generally provide consistent hourly readings of air quality.

These measurements are, however, often limited to major city centres. On the other hand, many low- and middle-income countries lack sufficient data coverage for all their human settlements.

### **Programmes, projects and policies.**

There are several programmes and projects designed to reduce air pollution within cities. These include policies linked to infrastructure like the improved management of urban and agricultural waste, energy efficiency of buildings, and making cities more green and compact. Biological waste management such as anaerobic waste digestion to produce biogas are feasible low-cost alternatives to the open incineration of solid waste, waste reduction, waste separation, recycling and reuse or waste reprocessing that have critical impacts on air quality. Also, the promotion of sustainable energy sources like solar, wind or hydropower; co-generation of heat and power; and distributed energy generation such as mini-grids and rooftop solar power generation, increased use of low-emissions fuels, and renewable of combustion-free power. Since 2012, the Climate and Clean Air Coalition has launched several initiatives to reduce short-lived climate pollutants. These initiatives are implemented based on priorities identified by partners and new scientific developments. Several initiatives focus on the agriculture, bricks, diesel, household energy, municipal solid waste, oil and gas, urban health sectors, and on national planning, regional assessments and financing for climate pollutants. Led by partners, they are the heart of the Coalition's work and bring together a wide range of committed actors from across the world. Other global initiatives such as BreathLife<sup>32</sup> led by WHO, UNEP and others such as the Partnerships for Clean Fuels

and Vehicles are supporting and developing capacities for countries and cities to collect local city data on air quality.

Regarding the promotion of sustainable energies and distributed energy generation, several cities have begun to focus on the development of micro and mini-grids in response to the constraints of the current energy grids with regard to optimization and distribution. UNEP has awarded the Asia-Pacific Low Carbon Lifestyles Challenge prize to Energo<sup>33</sup>, which constitutes an energy trading platform using blockchain technology and smart metres, connecting peer-to-peer energy producers with consumers in microgrids. A more detailed overview of this initiative can be found at a UN/CEFACT Briefing Note<sup>34</sup> on Blockchain-based technologies contributing to the achievement of SDG specific targets. Further innovation in the area of sustainable energies is supported by Blockchain technology for decentralization, decarbonization, energy consumption traceability and managed self-consumption communities. UN/CEFACT is also currently looking into the opportunities that the Internet of Things (IoT) presents for sustainable urbanisation. These innovations serve new demands in cities for enhanced services and improved interaction, making it possible to increase real-time insights on traffic and transportation for public authorities. The harmonization of data, which can be supported by UN/CEFACT's work on standardization of information exchanges and data flows, interacting together with blockchain smart contracts to initiate action, could serve for example,

more efficient and simplified payment services over parking or driving violations.

### **Financing:**

Financing for air pollution is largely sourced from various donors including private firms and foundations. Most of the funds go towards supporting several activities linked to reducing air pollution including agriculture, oil, waste, diesel, transport, household energy and local planning. More support directly to cities to enhance their systems (hardware and software) and human resources to monitor and report on air quality remains a core problem, especially for the developing countries.

### **Capacity development and technology:**

The capacities of many institutions and cities to monitor and report, effectively, on air quality with the right level of coverage within and across cities is a major problem. Given that data must be aggregated at the city level and reported at the national, more countries need to invest in the collaborative frameworks for national and local authorities to work jointly. For low-income countries the gaps in data call for more capacity development, alongside concerted efforts in disseminating the guides for quality assurance and standards that air quality monitoring requires. There are low-cost possibilities for scaling up new technology to enhance capabilities of developing countries to adopt monitor more effectively PM 2.5 levels.

***Biological waste management such as anaerobic waste digestion to produce biogas are feasible low-cost alternatives to the open incineration of solid waste, waste reduction, waste separation, recycling and reuse or waste reprocessing that have critical impacts on air quality***

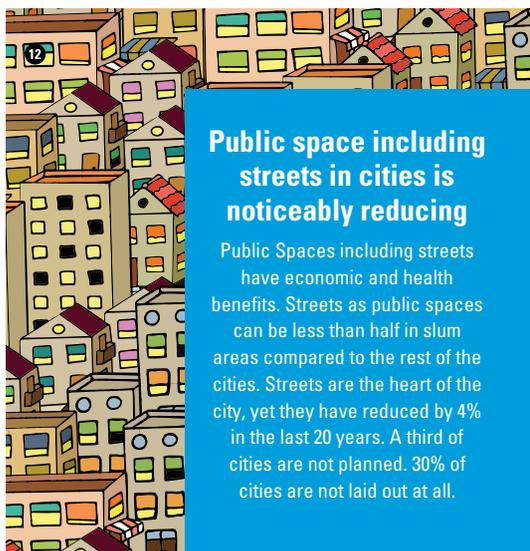
### 3.7 Target 11.7: By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, particularly for women and children, older persons and persons with disabilities

**Indicator 11.7.1 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.**

#### Key messages

Public spaces are broadly associated with benefits such as enhanced safety and social cohesion, higher equality and improved health and well-being. They increase property values, retail activity multiplication and city attractiveness. Public space has been measured by different methods and approaches, including different definitions of what constitutes a public space. In response, experts have agreed on an operational definition that combines streets and open areas with a public use.

There is a direct correlation between how much land cities allocate to streets, as public spaces, and their level of prosperity. Latest data shows that the expansion of the world's cities has been accompanied by changes in land use, both in terms of form as well as structure, and a progressive reduction of the proportion of space allocated to streets. The integration of public space in local, regional and national policies and frameworks promoting sustainability is key to securing the provision of public space and creating more liveable cities. Ensuring citywide distribution of public spaces is a way for governments to reduce inequalities and expand benefits and prosperity.



#### Context

Public spaces are a precondition to improving urban functionality and promoting development of healthy, productive urban ecosystems with better quality of life for residents. Public spaces are broadly associated with benefits such as enhanced safety and social cohesion, higher equality and improved health and well-being. They increase property values, retail activity multiplication, city attractiveness, and contribute to more effective and efficient transport and mobility. A prosperous city is an inclusive one that provides spaces for social engagement; recreation, social and economic development of vulnerable groups; and fosters social cohesion through the provision of adequate and well-designed public spaces.

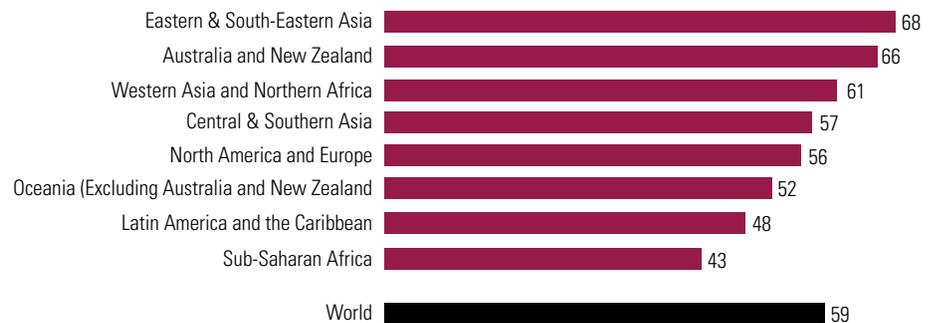
The importance of public space in the spatial elements of human settlements (design and organization) as well as on citizen lives (social aspects) makes them critical to the attainment of sustainable development. Public spaces are key to the attainment of several other goals such as SDG 3 (health and well-being through the provision of areas that promote walkability and improve air quality, contributing to reduce accidents and deaths from the transport sector); SDG 5 (gender equality by creating safe spaces and developing inclusive spaces for all); SDG 8 (decent work for all through the creation of informal trading areas and access to opportunities through streets development); and SDG 13 (climate change and resilience, through enhanced air filtration and reduced traffic resulting in reduced urban pollution).

Until recently public spaces have been measured by different methods and approaches, including different definitions of what constitutes a public space. Several local governments and agencies are measuring the quantity and quality of public space using different methods. In response, experts have agreed on an operational definition that combines streets and open areas with a public use. Indicator 11.7.1 is made up of two components: streets that can be measured through remote sensing, and public space that requires an inventory of public spaces that need to be verified by field work. The equitable distribution of public spaces within the city is critical for overall accessibility and use, as well as the quality of the space. Cities and countries reporting on this indicator are encouraged to promote better design and use of streets as public spaces.

### Data challenges and trends.

UN-Habitat, as a custodian agency, together with the Public Space Programme, City Prosperity Initiative, the Urban Expansion Programme, have been working with partners in the standardization of the methodology for monitoring public spaces. The fact that the indicator measures the share of the built-up area allocated to open space makes it sensitive to the definition of what constitutes a city and its built-up area. The indicator does not include measurement on safety, and it partially covers the notion of inclusivity by reference to access should be available “for all.” Definitions on what constitutes public space, public use and the notion of open were agreed upon by experts through consultative meetings.<sup>35</sup> Disaggregation of information by sex, age and persons with disabilities remains a key challenge which requires conducting comprehensive surveys in cities on public spaces.

**Figure 21. Share of built-up area that is urbanized open space by region (2014)**



Source: <http://www.atlasofurbanexpansion.org/data>

Data is today available for more than 300 cities across the world with results that are slightly different in exceptional cases due to definitional issues. Data is often collected locally (in cities or municipalities), which introduces difficulties for aggregation at the national level, and for this purpose the use of a national sample of cities is recommended for several countries.

Studies by UN-Habitat through the City Prosperity Initiative have shown that there is a direct correlation between how much land cities allocate to streets and

their level of prosperity based on the six dimensions: productivity, infrastructure development, quality of life, equity and social inclusion, environmental sustainability, urban governance and legislation. Latest data shows that the expansion of cities in Europe, North America and Oceania has been accompanied by changes in land use, in terms of form and structure. In these subregions, streets lost their importance in terms of their share of land. There were also major differences in the proportion of land allocated to streets between the city cores and suburbs, measured at 25 per cent and 15 per cent, respectively. Majority of cities in Africa, Asia and Latin America and the Caribbean allocate less than 15 per cent of land to streets in the city cores and less than 10 per cent in the suburbs. Out of 40 cities analysed from these regions, 7 cities allocated more than 20 per cent of land to street in their city core.



**59** per cent of the 95,406 km<sup>2</sup> of built-up land in selected cities across the globe was occupied by urbanized open spaces with streets occupying nearly half of this share

Global data from 231 cities from the Atlas of Urban Expansion (2016) shows that 59 per cent of the 95,406 km<sup>2</sup> of built-up land in selected cities across the globe was occupied by urbanized open spaces with streets occupying nearly half of this share (see figure 15). Regionally, sub-Saharan African cities have less space allocated to open public spaces (43 per cent).

**Awareness:**

Since the adoption of the SDG's, UN-Habitat has been advocating for public space for better quality of life, and for monitoring and conducting trainings on indicator 11.7.1. At the onset, a virtual Expert Group Meeting (2016) was organized with key global partners to define public space and to elaborate on the proposed methods for data collection. The Habitat 3 Conference and the preparatory process for the New Urban Agenda provided additional platforms for refining the global work on public space, complimenting the already existing SDG 11.7.1 indicator. A series of "Future of Places International Conferences" were also instrumental in advocating for the inclusion of public space in the New Urban Agenda, the formulation of SDG 11.7, and the elaboration of the indicator 11.7.1. This network represents 500 organizations across 100 countries which are engaged in advocating and informing local and national governments about the importance of the indicator, gathering the metadata, and developing related tools.

Other global events such as the World Urban Forum 9 and the Public Space Biennale in Rome and regional trainings on the indicator have been conducted in partnership with CityNet, UCLG and the International Conference on Canadian, Chinese and African Sustainable Urbanization. UN-Habitat and partners are building capacity of the local and national governments in several regions in readiness of the high demand for data collection to service the indicator 11.7.1.

**Policy:**

The integration of public space in local, regional and national policies and frameworks promoting sustainability is

means to secure the provision of public space and create more liveable cities. Ideally, urban planning systems should have the requirement of adequate public space as part of local and municipal plans. Surprisingly, not all urban plans contain sufficient policy guidance for the protection, creation, design, management and use of public spaces. In order for cities to be vibrant and safe places, there is a need to think of them as systems of interdependent parts and complex connections, as interactive and social spaces, where public space plays a major role. Ensuring citywide distribution of public spaces is a way for governments to reduce inequalities and expand benefits and prosperity. Having access to open public spaces improve quality of life and is a first step toward civic empowerment and greater access to institutional and political spaces. Citywide policies and strategies should ensure planning, as well as design and management of public spaces at different scales. Without a clear policy, it is difficult for local governments to prioritize, spend and plan resources and to show how much public space is valued. UN-Habitat and partners (NYU, ESA, JRC) support cities to map and assess their public spaces at the regional and city scale to understand spatial gaps and inequalities.

**Partnerships:**

Partnerships have helped faster action at local and national levels in efforts to gather data on the quality, quantity and distribution of public space. Important partners in this endeavour are local governments who see the gathering of the data on public space as a key step in the development of citywide strategies on public space as well as monitoring the implementation of SDG 11.7.1. UN-Habitat and its partners are

working closely to provide capacity-building and quality assurance support for the various components of the indicator. The agency has, for example, partnered with universities and research institutions such as New York University, the European Joint Research Centre and the Future of Places Research Centre at KTH, local government observatories (such as Bogota and Curitiba), NGO's like Healthbridge, other organizations like the World Bank, and associations of Local governments such as United Cities and Local Governments (UCLG) in supporting cities and local governments to collect public space data.

**Programmes and Projects:**

UN-Habitat, through its Global Public Space Programme, supports cities in collecting information about their public spaces, understanding their problems and potential at a city scale. This process of programming, planning and designing a public space network represents a valuable instrument for the development of cohesive and coherent urban spaces and an important tool for urban planning at a city level.

Since the adoption of the SDG's, UN-Habitat has successfully supported five cities with smart tools for mapping and assessing their public spaces (Nairobi, Kisumu both in Kenya; Bamendain Cameroon; Addis Ababa, capital of Ethiopia; and Wuhan, China). The tools are now being rolled out to six additional cities in 2018: Kathmandu (Nepal), Suleja and Minna (Nigeria), Dhaka (Bangladesh), Johannesburg (South Africa) and Ulaanbaatar (Mongolia). However, there is a great demand from other cities to use this assessment tool to guide the development of citywide public space strategies.

## Box 20. Jiangnan District, Wuhan, China district-wide open public space inventory and assessment

Jiangnan District is one of the 13 in Wuhan, capital of Hubei Province, China. It is situated at its confluence of the Yangtze and Han rivers and covers a land area of about 28.3 square kilometres. According to the 2015 Hubei Province Population and Housing Census, the district has 687,422 residents, accounting for a population density of 24,290 persons per square kilometres. The population is projected to reach 735,313 by 2030. Due to this population pressure, public spaces are being threatened by the expanding city, which has fragmented natural areas, creating small patches amongst building and roads. Public spaces have also been left derelict and while the district's high density has led to an inadequate green space index and low land stock. Air pollution, which affects the health of residents, is also a problem with an annual average PM<sub>2.5</sub> of 52.5 ug/m<sup>3</sup>, which is five times higher than the WHO recommendation of 10 ug/m<sup>3</sup>.

To respond to these threats, UN-Habitat in collaboration with the Wuhan Land Use and Spatial Planning Research Centre, undertook a district-wide open public space inventory and assessment to understand the gaps in the distribution, quality, safety, accessibility and inclusivity of their public spaces. By this action, UN-Habitat also celebrated the potential of Jiangnan District as a walkable, blue-green district with its unique waterfronts and fantastic setting. The survey was also recognized as a means to protect existing public spaces, improving the quality of urban spaces, revitalizing street life, improving the network of interconnected streets and public spaces between the old and new town, and the connections between the inner lakes and the Yangtze River.

UN-Habitat recommends that 30 per cent of the urban land area be dedicated to streets, yet Jiangnan has only 21.8 per cent. The district also falls short on green area per capita, which is only 2.2m<sup>2</sup>, while the total land dedicated to public space is 2 km<sup>2</sup> accounting for 7.5 per cent of the total area of the built-up area of Jiangnan District. The results of the inventory have also provided a basis for the district's public space strategy with a focus on heritage preservation.

### **Financing:**

Like many other urban SDG targets that require city-level data collection, more funding is needed to build the capacities of cities and local authorities to collect data on public spaces. Efforts should be expanded to increase the quality and quantity of public space data, especially in the developing world. UN-Habitat has developed tools, programmes and guidelines to assist cities in measuring, and reporting the availability of public space. A key lesson is the need to link the public space assessments and inventories to the development of citywide public space strategies and action plans for the local governments, which function as the main sources of funding for public space data collection. A training module for national statistical agencies has been developed and used to build the capacities of countries and city teams from the Africa and Asia regions. UN-Habitat's Public Space programme is also developing an online tutorial for cities

and local governments as well as making the Public Open Space Assessment toolbox easily available for cities to be able to collect public spaces data locally. This will contribute to scaling up operations and reduce the cost of conducting public space assessments.

### **Capacity development:**

UN-Habitat has been developing the capacity of partners, mainly local and national governments, but also national statistical offices, universities, research institutions and communities on how to measure the quality, quantity and availability of public space within the urban extent of the city, gathering detailed georeferenced information about each public space, as suggested by the indicator. By May 2018, at least 1,500 community members, university students, local government officials and professionals in Kisumu, Nairobi, Addis Ababa, Johannesburg, Bamenda and Wuhan had been trained in the use of in-house

digital tools to collect public space data. UN-Habitat is extending the capacity development programme to other cities in Africa, Asia, and Latin America. The data collection tool developed by the agency is accessible online freely, or via smart phones. Data can also be collected in offline mode and it gets uploaded later once there is an Internet connection.

UN-Habitat has also taken advantage of several international fora such as Habitat III in Quito, World Urban Forum 9 and the Citynet annual regional training for of professionals, NGO representatives, academia, local government officials and other key stakeholders in collecting data and other information on public space using the open source technologies.

### **Technology:**

Mobile phones connectivity and penetration, especially the smart version, is increasing globally. The number of smartphone users is expected to pass



Central Park, New York City, USA © Shutterstock/Elena Pominova

five billion by 2019 reaching over 67 per cent of the world's population. Taking the opportunity of available technology and smartphones, UN-Habitat's Global Public Space Programme uses an open source application (Kobo Toolbox) to collect public space-related data on the neighbourhood, but also at the citywide level. This data collection process follows a few basic steps. First, a map of all the open spaces is prepared, in which satellite images are used to identify the open public spaces, markets, and public facilities. Thereafter, local data collectors are trained on the use of the open source application for data collection. Usually, these are community member and students who then visit neighbourhoods and assess

the quality of each public area, collecting vital information on public spaces including geo-referenced data via their mobile devices. Each assessment is then uploaded onto the server to be further analysed. It is also possible to attach pictures, videos and measure the sound level in each public space, which can be used to validate the field data. Collecting data using smart phones, reduces the occurrence of errors by having electronic time stamps and location stamps; and increases the efficiency by avoiding secondary data entry errors. Efforts are to be deployed to connect this device to capture specific information related to the average share of the built-up area of cities that is open space for public use.

#### **Links to the citywide public space assessment reports:**

*Nairobi, Kenya:* <https://drive.google.com/file/d/0BxGwLrB69rWNY1mYnZXVVR0ekE/view?usp=sharing>

*Addis Ababa, Ethiopia:* <https://drive.google.com/file/d/0BxGwLrB69rWUHZkblFpYjBrXOU/view?usp=sharing>

*Wuhan, China:* [https://drive.google.com/file/d/1HTfcGmCd18L\\_zlBk6lJV90gl65MJ0yXR/view?usp=sharing](https://drive.google.com/file/d/1HTfcGmCd18L_zlBk6lJV90gl65MJ0yXR/view?usp=sharing)

*Bamenda, Cameroon:* <https://drive.google.com/drive/folders/0BxGwLrB69rWbnZsVDMwQUJkQ1k?usp=sharing>

**Indicator 11.7.2 Proportion of victims of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months.**

## Context

In the last three decades, we have witnessed increases in urban populations and gross domestic product through urbanization, alongside increased safety concerns due to growing inequalities and limited access to opportunities, as well as the concentration of disadvantages in specific locations. The growing violence and feeling of insecurity that city dwellers are facing in many public spaces across the world is a major urban challenge. In some countries, crime and violence have been exacerbated by the proliferation of weapons, substance abuse, increasing disparities, and youth unemployment. Global studies show that 60 per cent of all urban residents in developing countries have been victims of crime, at least once over the past five years, 70 per cent of them in Latin America and Africa. Access to safe public spaces greatly informs the perceived and real sentiment of urban safety, which is itself a key prerequisite for protection against physical and sexual harassment. These safety measures in return determine the level of accessibility and inclusivity in use of public spaces, particularly for the vulnerable urban populations (including women and children, older persons and persons with disabilities).

## Data trends and challenges.

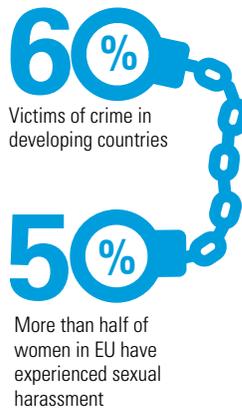
A good indicator of the level of safety in public spaces is the number of reported cases of insecurity over a given time. Indicator 11.7.2 aims to measure the proportion of persons who have experienced physical or sexual harassment with various forms of disaggregation. While most of the available data is disaggregated by type of crime, it is not disaggregated by gender, age, type of disability and location. A large pool of crime statistics

## Key messages

Safety concerns have increased due to growing inequalities and limited access to opportunities, and the concentration of disadvantages in specific locations. Global studies show that 60 per cent of all urban residents in developing countries have been victims of crime, at least once over the past five years, 70 per cent of them in America and Caribbean region, and Africa. Although UNODC shows a general decline in victimization related crimes (rape, robbery and burglary) across the world between 1995–2009, respondents in African countries experienced higher victimization rates than respondents in a sample of developed countries. A 2014 survey conducted by European Union Fundamental Rights Agency (AFR, 2014) suggested that more than half of women in the EU have experienced sexual harassment in their lifetime and every fifth woman has been sexually harassed in the preceding 12 months.

## Safety in cities, localized challenge

60% of urban residents in developing countries have been victims of crime. More than half of women in EU have experienced sexual harassment in their lifetime. In Africa, burglary is the most prevalent form of crime followed by assault.



exists at city and country level in most regions, whose method of collection vary from conventional systems such as censuses and focused security surveys to use of emerging approaches such as big data. To standardize data collection and reporting for the SDGs, the United Nations Office on Drugs and Crime (UNODC) has developed the International Classification of Crime for Statistical Purposes which provides a standard classification of criminal offences, thereby enhancing the consistency and international comparability of crime statistics. Some

of the types of crimes to be measured using the resultant tools include assault, rape, robbery, sexual exploitation, theft, and burglary.<sup>xxxvi</sup>

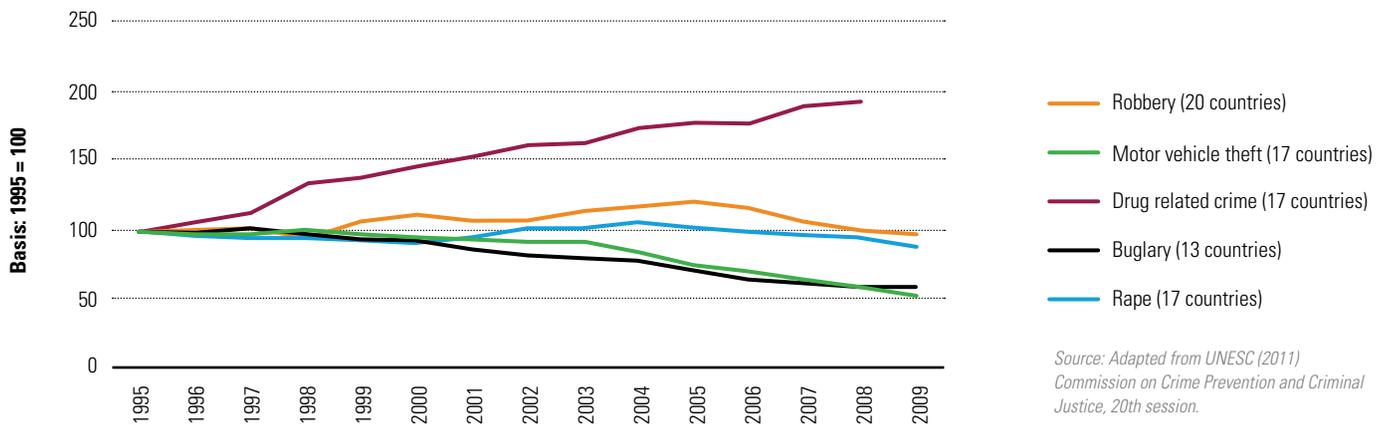
The UN Women Global Database of Violence against Women (<http://evaw-global-database.unwomen.org>) holds extensive data on gender-based violence. Although there is no data on the place of occurrence, the database highlights the availability of data on violence against women across Member States and the potential of national sources, such as dedicated surveys or subsections

in surveys (for example, demographic health surveys).

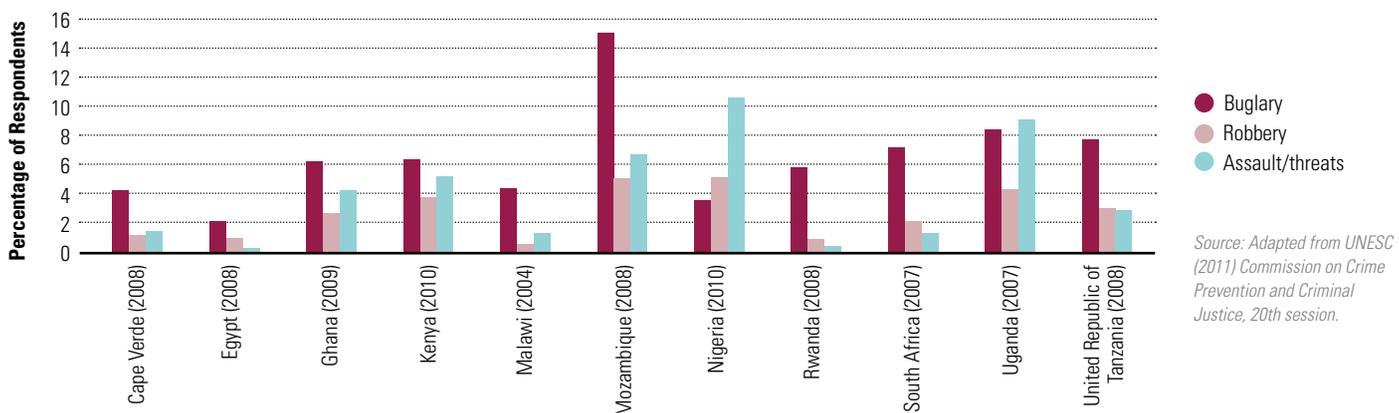
Available data from UNODC shows a general decline in victimization-related crimes across the world between 1995–2009. These crimes include rape, robbery and burglary (figure 22).

These results are, however, inconsistent across regions. Studies in 11 African countries show that out of three victimization crimes, burglary is the most prevalent, followed by assault and threats then robbery (see figure 22).

**Figure 22. Trends in conventional types of crime in countries for which long-term trend data are available, 1995-2009**



**Figure 23. One-year victimization rates (percentage) for burglary, assault/threats and robbery in 11 African countries**



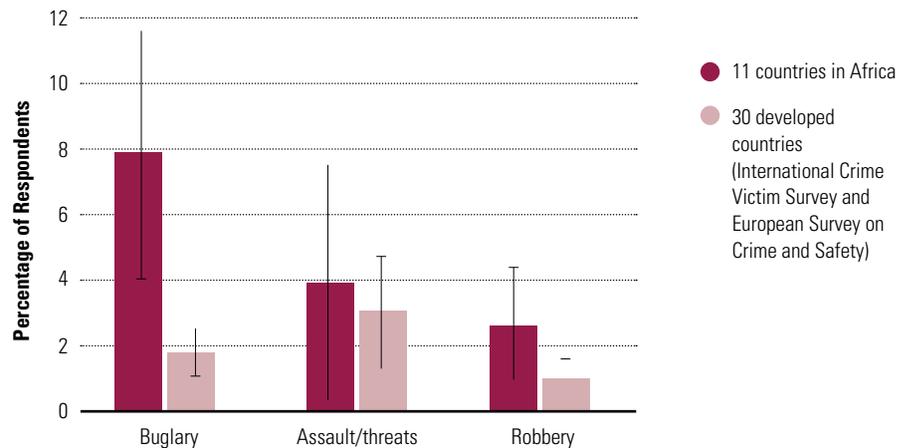
With respect to victimization through burglary, assault/threats, and robbery, respondents in African countries experienced higher victimization rates than those in a sample of developed countries (mostly European countries, but also Australia, Japan, Mexico and the United States of America). See figure 24).

Indicator 11.7.2 emphasizes the disaggregation by gender because physical and sexual violence is particularly high against women. A 2014 survey conducted by the European Union Fundamental Rights Agency (AFR, 2014) suggested that more than half of women in the European Union had experienced sexual harassment in their lifetime and every fifth woman had been sexually harassed in the preceding 12 months. However, some national studies show that up to 70 per cent of women have experienced physical or sexual violence from an intimate partner in their lifetime<sup>xxxvii</sup> (WHO, 2013). There is also a high prevalence of psychological violence against women as 43 per cent of women in the European Union have experienced this form of violence from an intimate partner in their lifetime<sup>xxxviii</sup> (AFR, 2014).

### **Awareness.**

The role and importance of public spaces in urban development has been attracting a lot of interest and focus, with recent recognitions identifying them as critical backbones of cities. As a result, significant progress has been made regarding the institutionalization of development and management of public spaces over the past decade. Several global and local movements have been formed to demand more friendly living areas attainable through public space provision. UN-Habitat's Safer Cities Programme has been organizing and promoting regional and international

**Figure 24. One-year victimization rates (percentage) for burglary, assault/threats and robbery in 11 countries in Africa and 30 developed countries.**



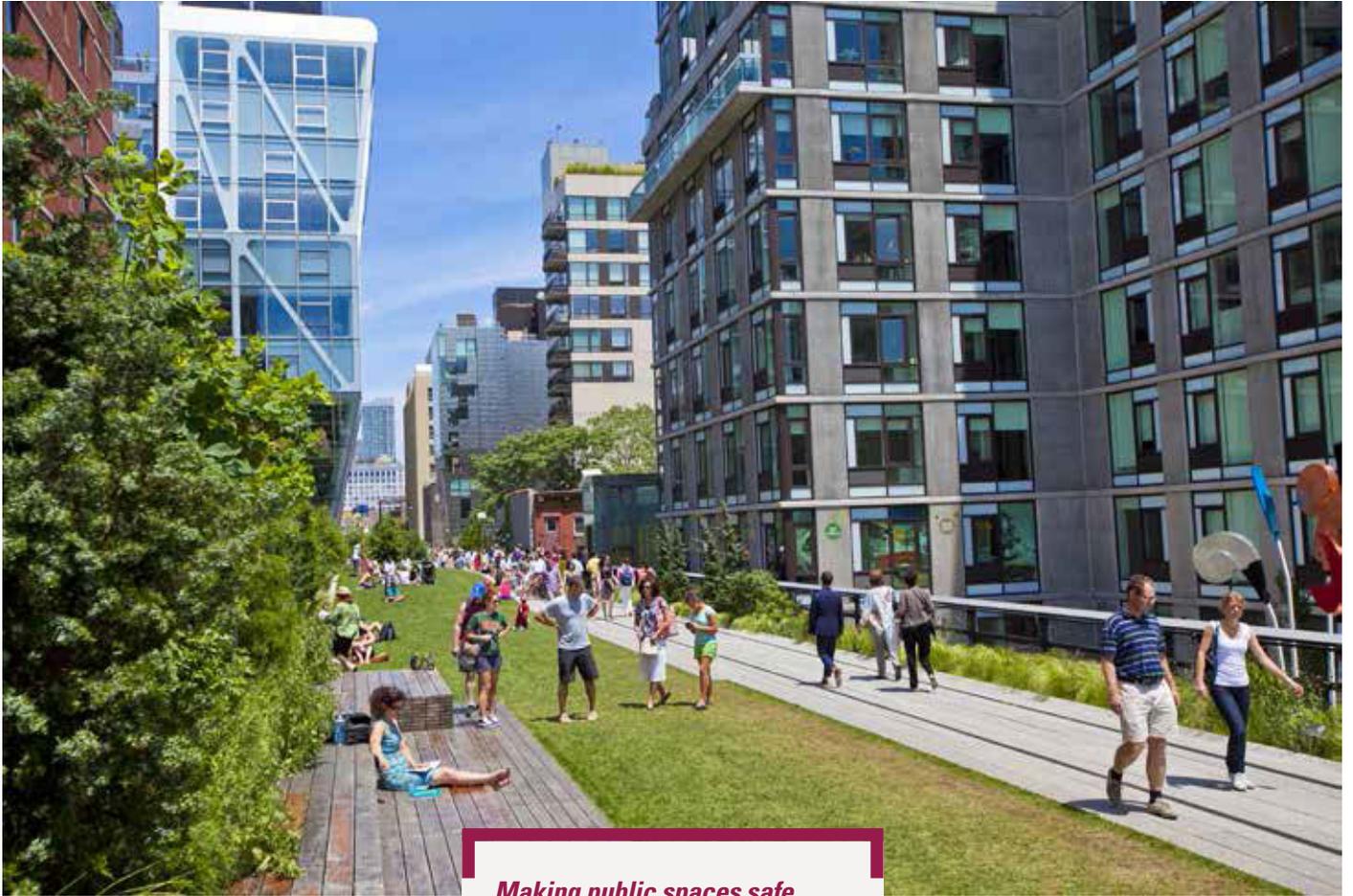
Source: Adapted from UNESCO (2011) Commission on Crime Prevention and Criminal Justice, 20th session.

### **Box 21. Making public spaces safe and accessible for all**

Green and public spaces must be safe, inclusive and accessible for all. In many countries, however, most young women do not feel safe in such places, especially after dark or when walking alone. For a public space to be seen as safe and comfortable, it needs to be used by a diverse range of people at various hours of the day. In a workshop at the 2017 EcoCity World Summit in Melbourne, Australia, experts discussed challenges in everyday practices of developing and maintaining inclusive public spaces. The discussions led to a common understanding of what these spaces look like:

- **Open access:** Public space should not favour specific groups or promote gentrification. Sometimes, architectural design of public spaces can restrict their free use.
- **Diversity:** Inclusive spaces work by encouraging a diverse mix of people who feel safe and comfortable in them. This mix should be intergenerational as well as intercultural.
- **Multiple purpose:** Inclusive spaces can thrive only when they are open, free and accessible. The space should allow some flexibility in its use to suit changing needs. When streets and plazas accommodate multiple activities, they are activated always, even if used differently at different times.
- **Accounting for children's needs:** Inclusive spaces must respect and acknowledge the needs of all gender and recognize children as active users of space. World Vision International, for instance, engages children as change agents who inform planning decisions for better and safer spaces.
- **Integration into the urban fabric:** Public space is accessible when it is well integrated and connected with surrounding land uses and transport options.

Source: <https://www.independent.co.uk/life-style/design/public-spaces-community-engagement-sustainable-development-public-park-a8221216.html>



High Line Park, New York City, USA  
© Shutterstock/Stuart Monk

***Making public spaces safe and accessible for all. Public space should not favour specific groups or promote gentrification. Sometimes, architectural design of public spaces can restrict their free use***

#### **Partnerships:**

UNODC is custodian agency for this indicator and is working with UN Women and UN-Habitat as main supporting agencies. The agencies also play a key role in the Global Safer Cities Programme which has been coordinated by UN-Habitat since its launch in 1996 at the request of African Mayors seeking to tackle urban crime and violence in their cities. The Safer Cities approach was initially developed in collaboration with the International Centre for the Prevention of Crime, the European Forum on Urban Safety, a network of over 300 cities, and with research institutes such as the South

debates on urban crime prevention within its international network of partners. This has resulted in the creation of a Global Network for Safer Cities. The role of the network is to advocate for urban safety and local crime prevention all over the world. The network is a reference for local, national and regional authorities to confront the current and future challenges cities are facing regarding safety. The network has a wide coverage of regions and targets multiple cities and a coalition of local stakeholders to work together towards enhancing urban safety. Within the network, there is exchange of knowledge and experiences on urban crime and violence prevention among cities and citizens. In recognition

of the importance of public spaces in cities, at the 23<sup>rd</sup> Governing Council of UN-Habitat, Member States mandated and challenged the agency to deal with the issue of public space and how this can contribute to sustainable urban development and an improved quality of life.<sup>36</sup> Since then, the agency has created the “Global Programme on Public Space” to service this request from the Member States.

African Institute for Security Studies. The programme has since expanded to several cities across the world and oversees the advocacy and awareness creations on issues to do with safer cities. Local authorities have a key role to play in responding to the rising public demand to reduce crime and violence. Success depends on partnerships between local governments and other stakeholders. Therefore, UN-Habitat's Safer Cities supports local authorities in developing and implementing crime and violence prevention strategies using a systematic participatory approach that involves identifying and mobilizing diverse local partners who can contribute to reduce and prevent crime and violence. It also includes creating a local safety coalition led by a public leader, ideally the mayor, and then assessing, measuring and understanding the local safety and security problems. This concludes with the development of a local crime prevention strategy and a detailed plan of action.

This strategy aims to institutionalize a local participatory approach by incorporating security as a cross-cutting dimension in decisions in the various departments of institutions such as local government, the criminal justice system and civil society, and improving urban safety policies. UNODC, UN-Habitat, and UN Women continue to focus on urban safety challenges by working with several global and local partners such as the Huairou Commission and Women in Cities International, the Inter-American Coalition on Violence Prevention, local government associations (CITYNET among others), and the United Cities and Local Governments. In addition, UN-Habitat is collaborating with UNDP and other United Nations agencies in the Inter-agency Armed Violence Prevention Programme; with UN-Women and

UNICEF on the "Safe Cities free from violence against women and girls" and on a joint project on "Safe and Friendly Cities for all" as well as with UNODC on the United Nation's Guidelines on Crime Prevention and Criminal Justice.

### **Financing.**

The bulk of the support on monitoring safer cities comes from existing projects and programmes linked to Safer Cities Technical Co-operation and Global Activities. At the local level, cities and municipalities have also invested resources to collect relevant data linked to safety in public spaces. Global funds to build the capacity of urban, local and national governments and their partners in initiating effective urban safety policies for all are still needed. This support also needs to ensure that systems such as local urban safety surveys are supported to collect the local data need to assess the safety in public spaces in a timely manner and with higher levels of disaggregation of the information. The New Urban Agenda acknowledges the responsibility of local authorities in preventing crime and violence, but many local authorities need relevant tools and guidelines which UN-Habitat, UNODC and other partners have developed and disseminated.

### **Capacity development.**

Capacities of local authorities to collect and report on safer cities and safety in public spaces need enhancing. The Safer Cities approach will continue to spearhead the urban crime prevention drives. Capacities development sessions for monitoring and reporting on safety in public spaces in several cities have been built around some global initiatives. Some of these initiatives are the UN Guidelines on Safer Cities;

City to City Cooperation (learning and exchange between local authorities and communities); the Global Award on Safer Cities; the Global Safety Index for Cities; the Global Safer Public Spaces Awareness Campaign; and the Global Social Media Portal on Safer Cities.

### **Technology.**

Effective planning requires proactive involvement of citizens to create inclusive spaces and foster a sense of belonging. Crowdsourcing is one approach to tap into the community and encourage them to share their expectations, use and experience of public space. Platforms such as Plan International's map-based community engagement tool have allowed women to chart safe and unsafe spaces in the city and comment on them.<sup>xxxix</sup>

Similarly, a recent project with schoolchildren in socioeconomically contrasting areas in Liverpool (United Kingdom) has been able to make spatially visible and systematically categorize differently perceived barriers to access to open space.<sup>xl</sup> By combining quantitative and participatory methods, such as questionnaire surveys, local site analyses, digitizable perception mapping and brief, textual descriptions, the project systematically identified the schoolchildren's definitions of their open space and categorized their perceptions to generate taxonomic categories of access to urban community localities within their neighbourhood (ibid.). These kinds of approaches could be extended to inform indicator 11.7.2 by systematically categorizing and spatially identifying heterogeneous stakeholder perceptions regarding safe access to public spaces.

### 3.8 Target 11.a: Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

**Indicator 11.a.1 (current): Proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city.**

#### Key messages

The distinction between urban and rural settlements has been an element of data disaggregation for most part of the history of settlement monitoring. However, historical development trends show that urban-rural linkages include important flows (people, natural resources, capital, goods, ecosystem services, information, technology, ideas and innovation) that are drivers of economic growth and development. The indicator puts emphasis on the interdependency, interconnection and complementary of these settlement systems.

Since the monitoring of this indicator is difficult to measure, ambiguous and not suitable for strengthening national and regional development planning, experts agreed to a revision and a rewording to measure national urban policy or regional development plans. Currently, data can be measured for at least 108 countries with important level of thematic disaggregation, using the UN-Habitat National Urban Policy Database. This platform remains a key resource for monitoring progress on indicator 11.a.1 and the New Urban Agenda.

In line with the SDGs and NUA, many countries are going back to the feasibility phase to revise their National Urban Policies, as is evidenced in the increase in number of countries in this phase from **9** in 2015 to **24** in 2018.



#### National Urban Policies

Since Habitat III, there is a one third increase in countries with National Urban Policies. Up to 180 countries are implementing National Urban policies. The spatial structure and economic development of cities are the most prominent components of these national urban policies.

#### Context

The distinction between urban and rural settlements is used in almost all aspects of development, from land use to economic and social aspects of growth. When policymakers decide on important issues such as poverty reduction and economic development, then they classify the activities as either rural or urban. In many instances however, this distinction has been used to show differences between the two settlement patterns, and consistently has overlooked their interlinkages, complementarities and synergies.<sup>xli</sup> This has been against recorded historical development trends which have shown that, urban-rural linkages include important flows of people, natural resources, capital, goods, ecosystem services, information, technology, ideas and innovation. These are important drivers of economic activities and contribute significantly to overall poverty reduction in a region.<sup>xlii</sup> This illustrates interdependent, intertwined and complementary functional and productive settlement systems. Strong linkages among urban, rural, peri-urban and other settlements enhance sustainable development, because they channel resources to where they have the largest net economic and social benefits.

#### Data challenges and trends.

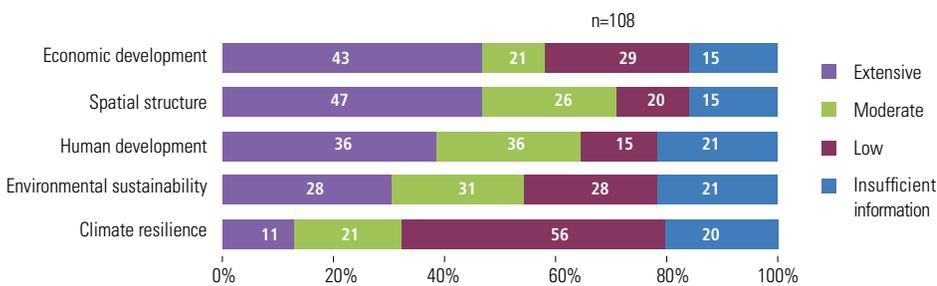
The 2016 United Nations Secretary-General's Report on SDG recommended that the next report should consider the disaggregation by development themes. Experts working on this indicator from several United Nations agencies and partners agreed that a good proxy

indicator to measure cities implementing urban and regional development plans is through the assessment of national urban policies (NUP). National urban policies are the most elaborate forms of urban and regional development plans. In that effect, the 2018 Global Report on National Urban Policy<sup>xliii</sup> disaggregated policies in 108 countries in five sectors: economic development, spatial structure,

human development, environmental sustainability, and climate resilience. The report highlights that spatial structure and economic development are globally covered at the rate of 47 per cent and 43 per cent, respectively (see figure 25). Human settlements, environment and climate change consideration were reflected at 36 per cent, 28 per cent and 10 per cent, respectively.

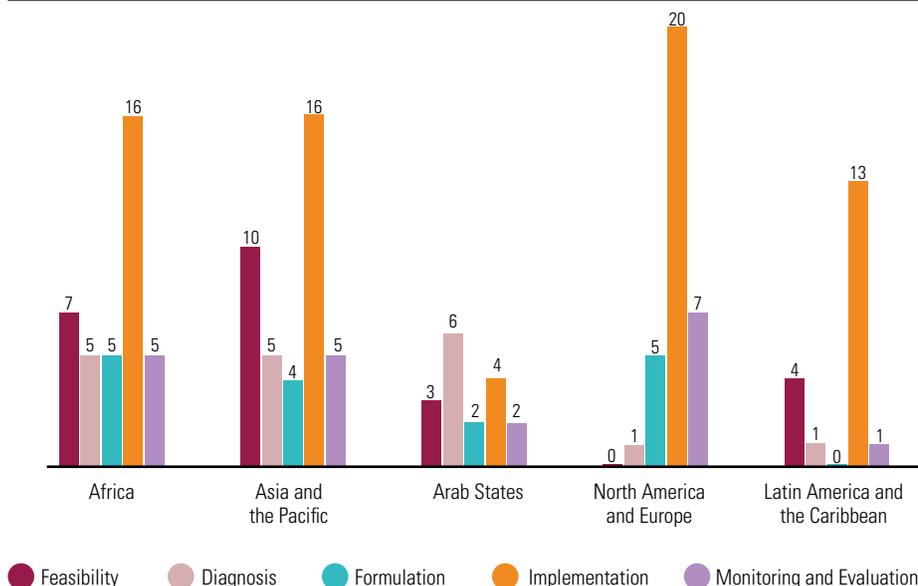
Between 2017 and 2018, UN-Habitat also released regional reports of the status of national urban policies in sub-Saharan Africa, Arab States, Latin America, Asia and the Pacific, North America, and Europe.<sup>xliiv</sup> Furthermore, UN-Habitat prepared the NUP thematic guides as related to the SDGs. These guides include slum upgrading and climate change.<sup>xliv</sup> In total, 20 per cent of countries in Europe and North America, 16 per cent in Africa, 16 per cent in Asia and the Pacific, and 13 per cent in Latin America and the Caribbean are implementing NUPs (see figure 26).

**Figure 25. Levels of attention given to selected themes in the NUPS in the formulation stage or beyond, Global Scale**



Source: 2018 Global Report on National Urban Policy, Page 27

**Figure 26. Status of NUP in Countries**



Source: UN Habitat and OECD (2018), Global State of National Urban Policy, United Nations Human Settlements Programme, Nairobi

**Measurement challenges of the indicator and rationale for its revision**

Monitoring of progress towards attainment of target 11.a is being done through collecting data for indicator 11.a.1, which seeks to measure the “proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city”. A review of this indicator by experts and partners working in regional development and the national urban policy field in March 2016 noted several challenges in implementing the monitoring of this indicator, adequately. Among many other reasons, they pointed out that “the indicator is difficult to measure, ambiguous and not suitable for strengthening national and regional development planning.” This is justified by the facts that:

- the indicator 11.a.1 evaluates “cities that implement urban and regional development plans.” This is practically impossible to measure since cities do not implement regional development plans as those are above their jurisdiction. Only regional or national governments have the capacity to plan at the regional level.

- measuring the indicator by the “percentage of population living in cities...” may result in some governments mainly focusing on large cities to have higher coverage in the indicator. This would leave behind smaller cities that would not contribute to the improvement of the rating.
- the proposed disaggregation “by size of city” is not applicable to the indicator, unless the unit of measurement is changed to “number of cities”: Under the proposed indicator, a single city will either be “implementing urban development plans” or not. Therefore, the 100 per cent of its population will be counted as positive or negative for the national aggregation.

As a result, experts agreed to a revision and a rewording of the indicator to read as: “Number of countries that have a National Urban Policy or Regional Development Plans that (a) respond to population dynamics, (b) ensure balanced territorial development, and (c) increase local fiscal space.”

Following this recommendation, UN-Habitat and UNFPA are lined up to submit a request for revision of this indicator to the Inter-Agency Expert Group SDGs as part of the 2020 comprehensive SDGs indicator review process. The solid methodology on NUPs monitoring, and the 2016 State of National Urban Policy report can be used as baseline information for the proposed indicator.

### **Awareness:**

The will of the international community to undertake urban and rural development in a complementary and mutually reinforcing manner was further reaffirmed during intergovernmental negotiations towards

the post-2015 agenda and Habitat III (particularly Habitat III Issue Paper 10 on Urban-Rural Linkages), which translated into the SDG 11a target and subsequently into the NUA.

SDG indicator 11a.1 calls for support for positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning. The NUA stresses the need to reduce urban-rural disparities, to foster equitable development across urban-rural areas, to encourage urban-rural interactions and connectivity. This can be done by strengthening transport, technology and communication networks and infrastructure, underpinned by planning instruments based on a territorial approach to maximize the potential of these sectors for enhanced productivity, social, economic, and territorial cohesion, and environmental sustainability. Collectively, the SDGs and NUA recognize the importance of rural and urban development in the planning process, the role of different actors in enhancing service delivery, and collective development in which no place and no one is left behind.

### **Policy:**

Optimal performance of the rural-peri-urban-urban continuum (and hence attainment of sustainable development) however requires deliberate policy guidance, to reduce system inefficiencies and promote equitable distribution of benefits. Such policy guidance is attainable through national and regional development planning interventions that tend to reduce disparities and ensure a more harmonious development.

A National Urban Policy is a coherent set of decisions derived through a

deliberate government-led process of coordinating and rallying various actors for a common vision and goal that will promote more transformative, productive, inclusive development. The policies have been identified as one of the key tools which governments can use to promote sustainable development that cuts across urban, peri-urban and rural areas, in response to the target and related indicator. This has to do with the policies’ ability to provide a structure and organization to the process of spatial transformation, population dynamics, territorial inequalities and financial accountability, which covers the entire scope of the urban-rural continuum.

A national urban policy is the overarching coordinating framework that supports the spatial organization and operation of a system of cities. It functions to promote the positive role of urbanization in national socioeconomic development through maximizing the benefits of urbanization, reducing inequalities, mitigating potential adverse externalities, reasserting urban space, and rallying various urban actors. It is a product and a process to harness the dynamism of cities and urbanization.<sup>xlvi</sup> A coordinated effort from the national level government in the form of an urbanization policy that integrates regional and local level inputs provides an opportunity for the development of an inclusive nationwide development framework. This framework would promote stronger linkages between urban, peri-urban and rural areas by a) linking sectorial policies; b) connecting national, regional and local governments and policies; c) strengthening urban, peri-urban, and rural links through integrated territorial development; and d) increasing subnational governments’ resources in order to achieve a full access of basic services at the local level. This is also fundamental to the attainment of many other SDG targets (see figure 27).

**Figure 27. Linkage of NUP to other SDG Targets**

### Partnerships.

The NUPs which conceptually and methodologically underpin the proposed indicator (11.a.1) have already been developed by UN-Habitat in collaboration with partners, with a local context in every country. One example of a NUP and how it involves partners – from civil society, local, and international – is below.

### Programmes and Projects.

Progress towards the utilization of this proposed indicator has also been made. As part of its global mandate to promote sustainable urbanization, UN-Habitat developed the National Urban Policy Database which provides a global overview of the state of urban policy at the national level. This platform remains a key resource for monitoring progress on indicator 11.a.1 and the NUA. Tracking of progress in NUP development is done through five phases: feasibility, diagnosis, formulation, implementation and monitoring & evaluation. Latest information in the National Urban Policy database

### Box 22. NUP in Liberia: using a participatory process for changing mindsets in Liberia

Liberia is one of the countries where UN-Habitat and its partners such as Cities Alliance have deployed an inclusive and participatory NUP process, which is changing the policymaking mindset and setting the framework for a transformative urbanization agenda. Given the challenges faced by Liberia, UN-Habitat and its partners undertook to design and implement an inclusive policy process that would rally all forces to tackle together the country's challenges. This approach was supported by the realization that most stakeholders were eager to contribute actively to the reconstruction of the nation, with urban development at the centre of such efforts. In addition, for years policies developed from the central government had not yielded expected benefits. An inclusive urban policy was therefore designed as a tool for reassuring all segments of the society that their voices count.

Liberia convened its first National Urban Forum in 2015. For the first time, a policy process was validated by the coalition of urban poor, young professional, national and subnational governments. Such a move towards inclusive policymaking had not been witnessed before, especially considering the country's recent history of conflict. So far, multiple stakeholders had jointly validated 10 policy focus areas, along with three overarching interventions. In 2017, the young professionals, the mayors' association, the interest groups of urban poor and other vulnerable population groups validated the major findings from the feasibility stage of the national urban policy development process for Liberia.

**Figure 28. Countries supported by UN-Habitat with National Urban Policy Development**

shows credible progress: 150 (against 142 in 2015) countries are developing national-level urban policies; of these, 73 are in the process of implementation, and 19 have reached the monitoring and evaluation phase. A significant proportion of countries are in the early stages of policy development: 24 are in the feasibility phase, 18 are in diagnosis, and 16 are in the formulation phase. This illustrates an increase in the interest for developing or renewing the policies. Regionally, Asia Pacific region has the highest number of ongoing policy formulation activities, followed by Africa, Europe and North America (see figure 28).

UN-Habitat is supporting 39 countries with the development of their urban policies, in collaboration with a variety of partners.

Given the importance of urbanization as a tool for development, many countries are now embarking on the development and implementation of the policies as tangible instruments to coordinate stakeholders' efforts and harness the benefits of urbanization while mitigating its externalities. This proposed indicator is most relevant for tracking national progress on all other areas of the SDGs, and targets where urban policies are mentioned along fiscal space. The proposed revisions of indicator 11a.1 provide key metrics to benchmark and monitor urbanization and help to assess the national leadership and political will of national governments. A coordinated effort from national or governments through a policy or a regional development plan provides the best opportunity for achieving sustainable urbanization and balanced

territorial development by linking sectorial policies, connecting national, regional and local government policies, strengthening urban, peri-urban and rural links through balanced territorial development.

The indicator provides a good barometer on global progress on sustainable national urban policies. It serves as gap analysis to support policy recommendations. It can identify good practices and policies among countries that can promote partnership and cooperation between all stakeholders. In addition, the indicator is not only process oriented but also aspirational. Moreover, the indicator has the potential to support the validation of Goal 11 and other SDGs indicators with an urban component. The indicator can also be applicable at multi-jurisdictional levels; that is to say covering several areas while

taking care of urban challenges in a more integrated national manner.

Urban challenges and opportunities vary widely across cities and countries, translating to varying contexts of policy intervention. Each national urban policy must thus focus on specific local needs to which they should respond. There is no single model or approach guaranteed to produce a desirable outcome that can be replicated in different situations. However, attempts to introduce national urban policies need to be responsive to the national context and sensitive to the political culture as well as an appetite for such a policy. This makes it vital to understand the distinctive history and evolution of urban policy in each place, including the role of other territorial, rural and regional policies.<sup>xlvii</sup> From March 2018, UN-Habitat has been supporting subnational urban policies in Niger State (Nigeria), Sinaola (Mexico), and Zanzibar (Tanzania). An effectively formulated national urban policy should be able to help governments cultivate and maintain an enabling environment for regional development, where balanced investment is made which gives citizens choices on where to live whether in rural, peri-urban, or urban areas.

### **Financing.**

As countries design their national urban policies, they should consider existing legislation, interconnectivity between urban, peri-urban, and rural areas, partnerships of all involved actors, participation, and financing mechanisms. Policies can attract investment - connecting big cities to intermediate ones, which provide the necessary linkages with rural areas. Such interconnectivity and policies, then, create the prerequisites for sustainable development.



Different programmes have been established to support financing. Among them are the Global NUP programme with OECD and Cities Alliance, which includes seed funding from the governments of Germany and Republic of Korea; a regional programme funded by different actors including the United Nations Development Account for Arab States and the Government of Italy. Country programmes are funded by development partners and countries themselves (including funding from Cities Alliance, Sweden, Germany with BMZ, Spain, and various countries funding their own policy development).

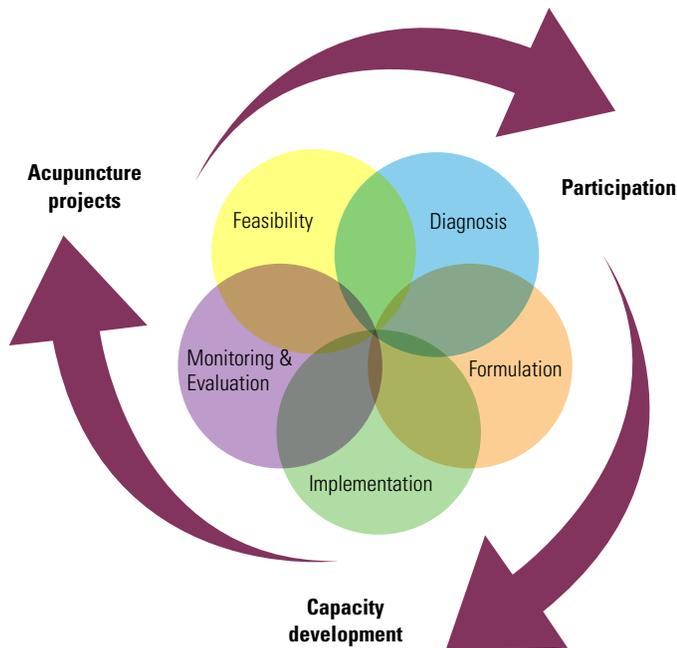
The funding is organized at four levels: The global, regional, country, and subnational. The subnational and regional authorities also fund their own policy development. Funding mechanisms vary from one country to another. Through partnerships and collaborations, countries such as Argentina, Afghanistan, India, Mexico, and Sweden, are funding their own NUP development with the technical support

and guidance of UN-Habitat. Many countries are willing to embark on their policy processes but are unable to do so now due to a lack of funds.

### **Capacity development and tools.**

The *Global Report on the State of National Urban Policy* is a joint publication between UN-Habitat, Cities Alliance and OECD, which conducts global monitoring to analyze the status of NUPs in 150 countries. The annual report collects, disseminates, and exchanges information on NUPs at the global, regional and subregional levels. It is a valuable mechanism for developing capacity and consistent standards in measuring NUPs globally. Complementing this, are four regional reports (Africa, Arab states, Latin America and Caribbean, North America and Europe) which assesses the state of NUPs at the regional levels.

Capacity development is one of the three main pillars of the NUP process. It starts from the notion that people are best

**Figure 29. The National Urban Policy Process**

Source: UN-Habitat (2015), *National Urban Policy: A Guiding Framework*, UN-Habitat, Nairobi.



**National Urban Forums create unique platforms and act as effective tools for capacity development, as they bring together partners and stakeholders to create participatory and responsive policies**

empowered to realize urban sustainability when the means of development are put in place. The capacity of institutions and individuals is central to the success of a NUP, which is why UN-Habitat and its partners develop tailored training programs to strengthen the ability of cities and municipalities to manage urban development with relevant data, knowledge and tools. To support the NUP process, training programmes are initiated through various conferences and workshops.

As a process rather than a result, the development and successful creation and implementation of NUPs allows for stronger support for all of the SDG11 targets and creates an enabling

environment for the achievement of many of the other SDG targets and indicators.

UN-Habitat also encourages each country to hold frequent National Urban Forums (NUFs) for the continuous discussion and advancement on urban policies. These forums include elements such as national consultations, workshops and other capacity building and advocacy activities. NUFs create unique platforms and act as effective tools for capacity development, as they bring together partners and stakeholders to create participatory and responsive policies. They enhance knowledge and improve data collection methodologies at the national level; and have proven to produce positive results in countries where they have been implemented.

### **Technology.**

Because NUPs are a participatory process to be better adapted to the national context, technology has the potential to play an important role in advocating on the need and importance of NUPs, supporting monitoring of the process and the outcomes. Social media has been critical in the NUPs of Cameroon, facilitating people's engagement and creating a platform to express their views. Technology can also be utilized to maximize the diversity of audiences and participation, as the UrbanPolicyPlatform.org that is used to capture and disseminate knowledge and practices on NUPs.

### 3.9 Target 11c: Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

**Indicator 11c.1** Proportion of financial support to the least developed countries that is allocated to the construction and retrofitting of sustainable, resilient and resource-efficient buildings utilizing local materials.

#### Key messages

The construction industry has major implications on urban livelihoods and human comfort, but also on pollution standards. While progress has been made on sustainability initiatives of this industry at global level, the connection to local actions is still rather weak. An agreed definition on what constitutes “local building materials” is being discussed but many experts agree that the use of materials within the same region are cost-efficient, and easier to reuse and recycle. This indicator is about the measurement of financial support from developed countries to the less advanced on the construction of sustainable and resilience buildings using local materials. Although data is available for a few countries, it needs to be re-packaged to allow for disaggregation by relevant variables.



#### Sustainable and Resilient buildings

Construction and use of local materials contribute to sustainability development. Local materials provide efficient ways for energy conservation and protection from disasters. In developing economies between 7 and 10% of the labour force are involved in residential construction.

#### Context

The construction industry has significant impact on material extraction, consumption of natural resources and human comfort. Globally, the industry is one of the largest users of energy, material resources, and water, and it is a formidable polluter.<sup>xlviii</sup> For example, buildings consume energy through extraction of materials, during construction as well as throughout their operation (e.g. for lighting, heating). While a diversity of sustainability initiatives and strategies have been proposed for the industry at the macro level, there has been weak linkage of these to micro-level actions, where decisions have the highest cumulative significance to the elements of sustainability. SDG target 11.c is among the first major attempts to link the global aspirations to local actions in the construction industry, by focusing on construction materials and international assistance (financial and technical) in the building industry, with attention on the least developed countries where actions (or lack thereof) in the industry have the highest cumulative impacts. At the local level, there has been increasing interest among development actors and organizations, who agree that appropriate strategies and actions are needed to make building activities more sustainable.

While there is no universally agreed definition for what constitutes “local building material”, the term is used to refer to materials of which the entire production process takes place within the same region. The lifecycle includes all steps of the production chain from extraction of raw materials,

manufacturing into building products, sale and use of building products, and recycling to end-of-life). Local building materials commonly implies a lower impact compared to 'non-local' material associated with the embodied energy of transport requirements from extraction, to manufacturing, and to delivery at site. Use of locally sourced materials reduce investment costs since materials are often cheaper, demand less maintenance owing to their adaptation to the local climate, and are easier to recycle.

#### **Data trends and challenges.**

Target 11c under the urban Goal 11 aims to promote global cooperation in the construction of sustainable and resilient buildings using local materials, particularly by increasing the financial and technical

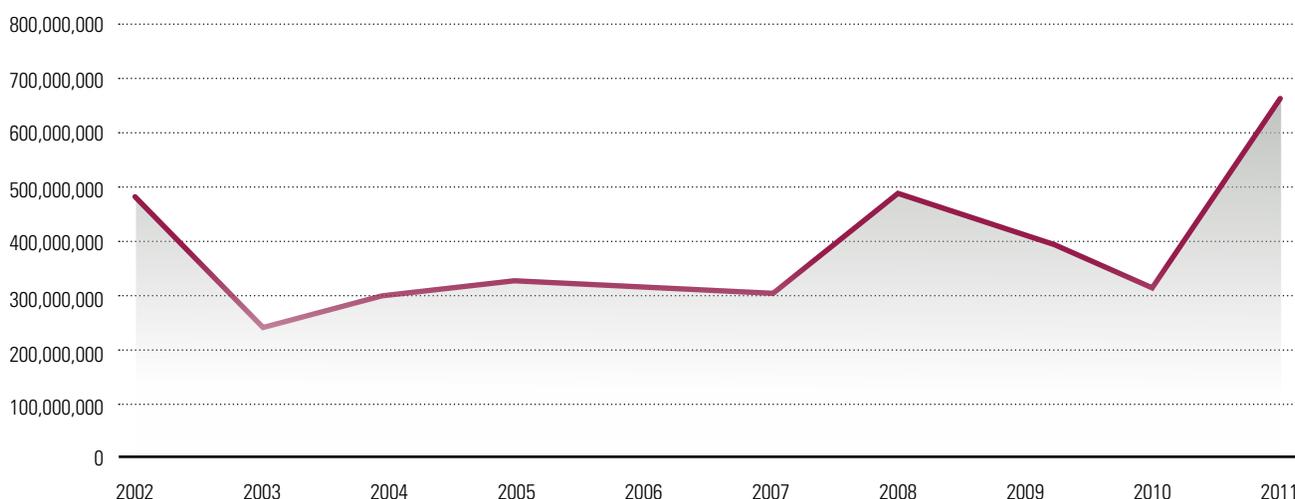
support offered to the least developed countries towards this goal. While data on the flow of financial support from more developed to less developed and least developed countries is largely available, the utilization of such assistance in the construction industry is not one of the disaggregation elements available. Available data indicates that residential construction makes up between 7 per cent and 10 per cent of the total labour force in developing economies. Data on global financial assistance—measured as net disbursements of official development assistance (ODA) by the members of the OECD Development Assistance Committee (DAC)—indicates a net increase in the amount of help available to aid receiving countries. Between 1960 and 2017, ODA at 2016 prices and exchange rates more than quadrupled, increasing

from only USD 35.67 billion in 1960 to USD 144.16 billion in 2017.

At the regional level, data for selected countries from sub-Saharan Africa (all income levels) is available but only for a cluster of sectors (industry, mining and construction), which again echoes the need to separate these figures in official reporting systems to extract the share for construction industry (see figure 30).

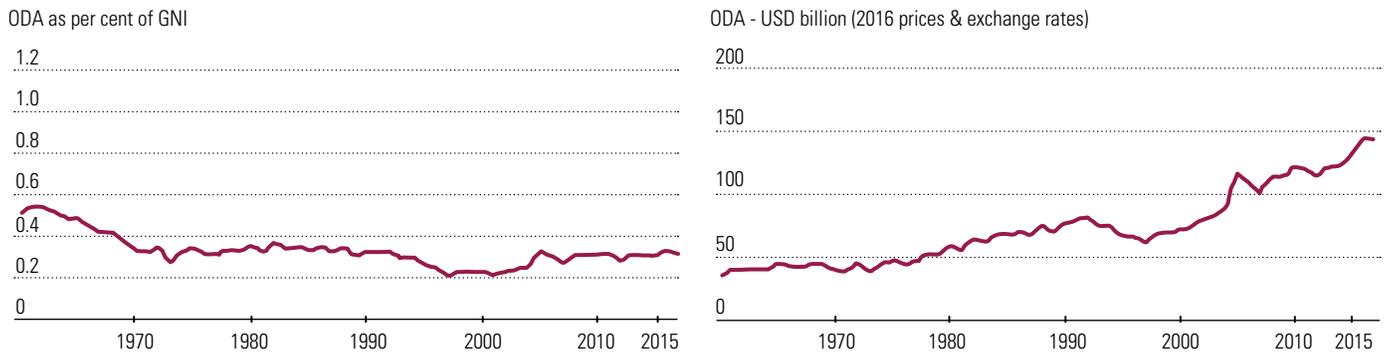
The share of ODA as a percentage of the gross national income (GNI) has, however, been on the decline, recording a decrease from 0.51 per cent in 1960 to 0.31 per cent in 2017 (see figure 24). This is against a global target of 0.7 per cent of donor country's GNI.<sup>37</sup>

**Figure 30. Gross ODA aid disbursement for industry, mining and construction, DAC donors total (current US\$)**



Source: World Bank\*

\* World bank. Sourced from Development Assistance Committee of the Organisation for Economic Co-operation and Development, Geographical Distribution of Financial Flows to Developing Countries, Development Co-operation Report, and International Development Statistics database. Data are available online at: [www.oecd.org/dac/stats/idsonline](http://www.oecd.org/dac/stats/idsonline).

**Figure 31. Changes in ODA as percentage of GNI and in 2016 prices (1960 – 2017)**

Source: <http://www2.compareyourcountry.org/oda?cr=20001&cr1=oced&lg=en&page=1>

#### **Awareness:**

Advocacy for this indicator has come through various fora including expert group meetings organized on the sidelines of major gatherings such as the World Urban Forum and the World Data Forums. Several capacity development sessions were conducted in several regions and in selected countries. Sessions have most attracted the participation of national statistical organizations, relevant line ministries and departments, local authorities, civil society, academia, and other non-traditional partners such as the private sector and foundations.

#### **Policy:**

Extraction and use of locally available materials contributes substantially to the objectives of the sustainable and resilient building design and construction. For example, use of local materials which are adaptable to weather conditions reduces the regular need for energy use (combined with responsive design), reduces transportation related costs and emissions – contributing to energy conservation; and assures residents of protection from disasters. Equally, it contributes to conservation of the materials (resources)

because extraction is informed by demand as opposed to externalities such as economies of transportation. Therefore, the relative use of local building materials and resources in the construction industry has a substantial effect in the way in which the construction industry can be harnessed to enable growth in the local economies of LDCs. The development of local sustainable building materials and technologies may also boost the associated retail and consulting industries.

#### **Partnership and Financing opportunities:**

The United Nation's Secretary General Independent Advisory Group on Data Revolution for Sustainable Development emphasizes the need for high-quality and reliable data, and on areas which are still barely covered by existing data at the national levels. Data on shares of ODA that goes into the construction industry is one of those areas that need setting up of new systems to support data collection and requires establishing new partnerships at the national levels and local authorities' levels. Opportunities for coordinating international action to improve data for this indicator exists through ministries of planning or housing or urban development.

#### **Capacity development:**

This indicator is still under Tier III with no data available but with a refined methodology ready for global deployment. Indeed, not every country has a comparable national database for the various targeted dimensions for this indicator with the same level of consistency. While considerable research is conducted in some countries on local building materials, only a few of these research initiatives offer global monitoring ideas to track the use of local building materials. As a result, no readily available global definitions were developed to monitor indicator 11.c.1 prior to SDGs. Hence more efforts will be placed in standardizing many of these systems of reporting. However, UN Habitat has now developed complete guides for this indicator that are being disseminated through workshops organized in collaboration with regional commissions, specifically the Economic Commission for Africa (ECA), ESCAP, ESCWA and ECLAC. Overall, there is an urgent need to develop suitable protocols for construction industry metrics, which should then be incorporated into local government and national data systems.



## Notes

1. UN-Habitat 'Financing Urban Shelter: Global Report on Human Settlements 2005
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  4. Thirty-six from sub-Saharan Africa, 22 from West Asia and North Africa, 11 from Central and Southern Asia, 13 from East and South-Eastern Asia, 19 from LAC, 42 from North America and Europe, and Australia and New Zealand
  5. Available from <https://unstats.un.org/sdgs/metadata/files/SDG-indicator-metadata.zip>
  6. SDG 11.2.1: "Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities."
  7. Network Analysis based on the street network that will help to measure the pedestrian access and walking distance of 500m to a public transport stop.
  8. Additional metrics of access to transit may include a longer distance for cycling access (for example, availability of cycling infrastructure or bike share systems), such as 2,000m.
  9. Public transit is defined as shared passenger transport service that is available to the general public and is provided for the public good. It may also include informal modes of transport (paratransit) that can be reliably accessed for trips, despite often lacking in formally designated routes or stops.
  10. UN-Habitat's CPI that has been implemented in about 400 cities around the world includes the variables related to this indicator and working with transport stakeholders these metrics can be further developed.
  11. <http://www.unescap.org/publications/monograph-series-sustainable-and-inclusive-transport-assessment-urban-transport-systems>
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  14. <http://www.unescap.org/events/capacity-building-workshop-sustainable-urban-transport-index-suti>
  15. Data generated using spatial methods as part of the Global Human Settlements initiative of the European Commission Joint Research Centre shows that the world is more urban than is periodically reported through United Nations estimates
  16. UN-Habitat (2009) p.27
  17. Angel S. 2012. Planet of Cities. USA: Lincoln Institute of Land Policy.
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  19. In Somalia, Kenya and Rwanda, UN-Habitat has developed One-Stop Youth Centres, in partnership with local authorities and local youth groups. The Centres act as community spaces, and have various facilities such as gyms, clinics and classrooms.
  20. NUA, Article 10, 26, 28, 45 and 60.
  21. This builds on recommendations such as the Historic Urban Landscape (2011) that deals with the need to integrate and frame better the urban heritage within sustainable development.
  22. Targets A - mortality; B – people affected; C – economic loss; D – critical infrastructure and services; E – disaster risk reduction strategies; F – international cooperation; G – early warning and risk information.
  23. OIEWG was established by the General Assembly (resolution 69/284) and the recommendation was endorsed by the UNGA (OIEWG report A/71/644).
  24. <https://www.preventionweb.net/publications/view/54970>
  25. Available from <https://www.desinventar.net/>
  26. Including earthquakes, volcanos, tsunamis, tropical cyclone winds, tropical cyclone storm surge and floods. The analysis is based on a single return period for each hazard, in order to focus the attention on the change over time.
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  35. <https://unstats.un.org/sdgs/metadata/files/Metadata-11-07-01.pdf>
  36. Resolution 23/4 on Sustainable Urban Development through Access to Public Spaces.
  37. Around 1970's, rich country governments agreed to give 0.7 per cent of their GNI (gross national income) as official aid to poor countries for development assistance. The average aid delivered each year has actually been between 0.2 per cent and 0.4 per cent. The shortfall has therefore accumulated to just under USD 5 trillion dollars at 2012 prices, while total aid delivered in that same time frame has reached just over USD 3.6 trillion (Anup Shah (2014) Social, Political, Economic and Environmental Issues That Affect Us All. Retrieved on 15/05/2018, from: <http://www.globalissues.org/article/35/foreign-aid-development-assistance>)
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## Summary and Conclusions

Residents committee from Majengo village going through the new maps after successful participatory design and mapping exercise in Kilifi, Kenya © Julius Mwelu/ UN-Habitat

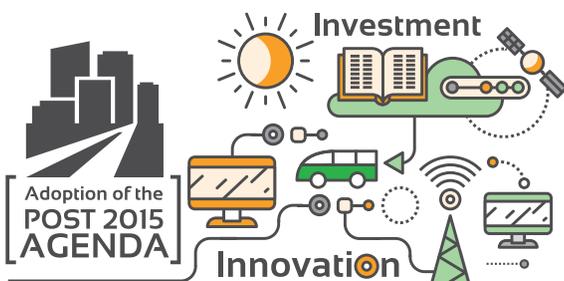
The 2030 Agenda for Sustainable Development, particularly Goal 11 and other urban indicators, alongside the 2016 New Urban Agenda, offer a renewed opportunity for the global community to confront several emerging global urban challenges. Among these are the urgent need to halt uncontrolled urban sprawl, reverse the growth of urban slum populations, institute smart, safe and efficient urban transport systems, improve urban environments through creating safe public spaces, manage air pollution and municipal solid waste, as well as promote sustainable buildings, ecosystem corridors and consumption and production patterns. All the targets and indicators of SDG 11 require sufficient planning and informed strategies, which are largely articulated in the need to have well-informed national urban policies. Many of these indicators build on the notable achievements registered during previous global agendas especially MDGs and the Habitat Agenda, including the notable fact that some targets now have reliable baselines to work with, many others are new and come as a response to the challenges and opportunities that urban areas face today in search of sustainable development outcomes. Lessons from previous experiences, especially the MDGs setting

the right targets for the right timelines and putting in place process-oriented indicators, are now well integrated in the SDGs and NUA frameworks.

The 2018 High-level Political Forum on Sustainable Development review for which Goal 11 is featured comes barely years after since agreement on Agenda 2030, and two years after the adoption of the NUA. These periods are sufficiently long for the global community to have learnt a lot about the existing challenges of implementing the SDGs and how to deal with the teething problems in monitoring and reporting. Clearly, achieving Goal 11 targets by 2030 will require focus on a range of cross-cutting, routine and persistent challenges. Some of these challenges include financing at the local and national levels and establishing new partnerships for strengthening statistical data production systems, especially in developing countries. At the indicator level, there is an urgent need to face emerging challenges such as defining new concepts, agreeing on

operational definitions, proposing new monitoring tools and approaches, building capacities internally and externally, and establishing new baselines. Countries and international agencies are exploring ways to tackle these difficulties by involving various actors, processes and systems; readjusting governance structures; examining alternative sources of finance; and encouraging collaboration and cooperation across stakeholders, sectors and regions. The pace and depth of attending to these challenges are reflected in the status of the Goal 11 indicators classification, according to the Inter-Agency Expert Group on SDGs where Goal 11 has 9 indicators classified in the Tier I and II categories, and 6 in Tier III category.\* This report reflects on the efforts undertaken, so far, by the international community in refining the overall monitoring framework to move indicators to Tier I and II, presents some of the data available, and the enabling factors such as policies, capacity development and finance that have enable progress in this Goal and related indicators.

\* Tier 1: Indicator is conceptually clear, has an internationally established methodology and standards are available, and data are regularly produced by countries for at least 50 per cent of countries and of the population in every region where the indicator is relevant. Tier 2: Indicator is conceptually clear, has an internationally established methodology and standards are available, but data are not regularly produced by countries. Tier 3: No internationally established methodology or standards are yet available for the indicator, but methodology/standards are being (or will be) developed or tested.



There is need to invest in cities to address socio-economic inequalities, social exclusion, extreme poverty, high unemployment, poor environmental conditions, and drivers of climate change.



## Placing housing at the centre

Housing can play a central role in ensuring sustainable development of cities and communities. This requires adoption of policies, strategies and legislation.

For Goal 11, this report has shown the opportunities and best practices developed so far alongside the existing and emerging challenges. These challenges range from the need to apply common definitions of concepts and standards for monitoring and reporting on the performance of cities within and across countries, supporting cities and local institutions to set up reporting mechanisms, as well as building new alliances between national ministries and NSO.

Countries are now aware of the need to monitor locally, but report progress on cities and human settlements at the national level. Urban issues are an entry agenda and are cross-cutting for many other sustainable development goals and targets. This calls for policy coherence and the need to build vertical and horizontal systems of collaboration and monitoring. It is only through collective efforts that it will be possible to produce the necessary data with the right disaggregation at different levels and forms in order to report consistently on performance at the urban, subnational and national levels. Countries with many cities, and those with limited human resources and funds, need to adopt various strategies to cope with large

data demands, and the national sample of cities approach developed and piloted by UN-Habitat is an important mechanism to aggregate national urban performances in a consistent and systematic manner. The sample offers the low-cost option of monitoring fewer representative sets of cities consistently and being able to report, seamlessly, national level performances of their systems of cities.

Amidst all other priorities for which city managers are responsible, servicing the new demands for SDGs and New Urban Agenda requires additional human and financial resources, and the strengthening of existing local and national partnerships. Cities and national governments need monitoring systems that produce accurate and close to real-time data and information, to design and inform their actions and policies aimed at uplifting urban services and the quality of life of their residents. Urban observatories that UN-Habitat had supported and promoted for more than two decades appeared to have been efficient platforms for local and national data collection during the MDGs era. They can continue to be the adequate systems and best practices for supporting cities locally to collect,

manage and process urban data for local and national policy formulation, if properly strengthened and reinforced. Urban observatories can link local urban stakeholders and actors and promote coordination among them in ways that facilitate engagement in the policy and institutional frameworks that are useful for the achievement of SDGs and New Urban Agenda at the local levels. At the same time, local urban observatories are connected to the global networks of other regional urban observatories which allows them to benefit directly from access to latest tools, guides and global best practices, including agreed monitoring methods and approaches.

SDG 11 targets and indicators require new partnerships at the local, national and global levels to succeed. At the global level, non-traditional stakeholders such as space agencies, universities, the private sector, civil society are participating with the aim of enhancing the reach and possibilities of scaling up implementation and global monitoring efforts. At the national level, data producers, with a clear mandate and specified role and responsibility, are working more with data users to articulate data and policy formulation. National



## Smart integrated transport systems

Investing in smart and green integrated transport systems that are inclusive, safe, accessible and affordable is critical.



## Culture: a driver for sustainable urban development

Local and national authorities must recognize the positive role that culture and heritage plays for sustainable development. When cities promote culture, they enhance social cohesion, collective identity, sense of belonging and participation.

statistical systems are coordinating with local authorities, urban observatories and service providers to collect information at city level, using conventional and new data collection mechanisms, such as crowdsourcing and community-generated data. At the local level, city authorities and local development partners and stakeholders are putting in place strategies to localize the SDGs and NUA agendas, supported by regional and global networks. They are also aligning plans, creating or reinforcing monitoring mechanisms and using tools to articulate data and policies better. United Nations custodian agencies involved in Goal 11 are supporting— with the development of monitoring frameworks and tools — capacity-building, policy coherence and alignment, and partnership development,

As a result of all these efforts, city and national urban data has been integrated into global databases for various indicators. For example, UN-Habitat's City Prosperity Initiative has over 450 cities with 72 urban- indicator data points available, and this has been complemented by other global data from 200 cities from the Global Sample of Cities. The growth of this large

set of data has offered a platform to study various cities in countries and across regions as well across several indicators. This helps city managers to assess the urban policy implications at the national or regional levels that goes beyond the silo assessments of the single urban indicators. For example, slum data has now been expanded and new components of informality and inadequate housing are now available. Additionally, aggregate data shows that people who live in slums are also deprived of many other urban services such as access to adequate health care, reliable transport, safe public spaces, and that these residents live in more hazardous environments where municipal solid waste collection services are unavailable.

Despite significant progress in developing the monitoring tools and methods for SDG 11, further work is needed especially in terms of reaching out to all countries in all regions. Capacity-building to align data collection processes and methods, adopt agreed definitions and approaches, articulate efforts and localize actions requires time and concerted actions. As such, additional resources are needed to allow custodian agencies to reinforce

their coordination roles and for efficient monitoring for the next three years. Enhancing political, legal and institutional frameworks, coordination mechanisms as well as financial support at the local levels is also needed. More demonstrative efforts articulating local monitoring with national reporting are needed, including governance mechanisms of data production, use, and dissemination.

The slum target that was directly inherited from the MDGs now covers the additional housing dimensions of informality and inadequacy in order to ensure its universality in application. Based on deprivation measures of slums an estimated 883 million people live in slum-like conditions today, a number that will certainly increase when capturing informal settlements and housing affordability (a proxy of inadequate housing). With the use of new satellite-based technologies, it will be possible to identify slum areas and obtain more accuracy on this indicator. Access to adequate housing contributes to various economic, social and cultural aspects of development for individuals, households and communities, making this new indicator a strong predictor of the right to housing.



## Waste management makes economic sense

When local authorities develop solid waste management systems, they not only improve the environment, but promote youth and women employment, contribute to energy saving, and reduce CO<sub>2</sub> emissions.



## Improvement in data collection mechanisms have helped capture levels of air pollution

and its adverse effects on human health worldwide, although there is need for increased investments in collection of high resolution data on air quality in cities including use of earth observation techniques.

SDG target 11.2 provides an entry point to monitor urban transport systems for the first time at the global level. Efficient transport and mobility systems are at the core of poverty and exclusion policies. Connectivity is crucial for prosperity and development to occur, and for integrating people to places, opportunities, markets and jobs. Data shows that the world's demand for public transport has increased by nearly one fifth. However, adequate transport is unavailable for the world's poorest and most vulnerable people, most of whom are in the developing countries. To leave no one behind, governments and urban managers need to invest in smart and green integrated transport systems that are inclusive, safe, accessible and affordable. The indicator captures the 'accessibility' dimension of the target, which is a tiny proportion of the efficient urban transport needs. This indicator needs to be analyzed along with other SDG indicators that cover the rural connectivity, or safety in transport. On this basis, experts also suggest complementary forms to measure other critical dimensions of sustainable transport and mobility.

Efficient land use is paramount for the sustainable development of cities. However, urban sprawl has largely been

characterized by urban land consumption rates being much higher than that of the urban population growth. The preference for suburbia and the increased use of the automobile are key factors of this growth. This has resulted in reducing urban densities, increased travel times, and increased costs of servicing urban residents – all of which are characteristics of unsustainable urban settlements. The UN-Habitat's led Global Sample of Cities provides good proxy information on the land consumption rates with a wider set of measures that offer explanations of the observed trends. More analysis on urban sprawl will explore the connections to planning guidelines that promote connectivity and compactness. Effective urban planning relies on up-to-date data, and the participation of all urban stakeholders, at local and global levels. Evidence based on an early assessment of the levels of civic participation and consultation in urban planning and management in cities provides a mixed bag of results. Less than half of all cities assessed so far engage or consult civil society or citizens on proposals to set up major roads or highway or alteration in zoning or any other major public projects. For SDGs localization to succeed, participation needs to be mainstreamed in

Goal 11 targets, and this process-oriented indicator provides its basis.

The direct and indirect worth of cultural and natural heritage found in many urban areas across the globe is massive. For many cultural cities employment, including that of youth and women, has been growing. Culture and heritage are inherent elements of urban systems and need to be integrated into local development projects. They provide urban identity, social cohesion, contribute to shape the urban space, encourage participation in most aspects of life, and act as a tool for local urban development. The attainment of these benefits, however, requires deliberate actions by city managers, as well as national governments towards financial investments in processes that support conservation and preservation of cultural and natural heritage in cities. This indicator needs to be further refined to support policy efforts in this area.

Globally, natural and human-made disasters have been increasing in terms of frequency and intensity. Their destructive effects are consistently more severe in urban areas, and disproportionately affect less developed regions as well as the vulnerable populations. Today, no place is



## Public spaces are the heart of the city

Cities function in an efficient, equitable and sustainable manner only when private and public spaces work in a symbiotic relation to enhance each other. Public space generates equality, sense of belonging and identity.

Local authorities should plan in advance sufficient public space well distributed in the city.

Streets are a key factor in the quality of life, the most important and immediate type of public space.



## Security and safety

With city growth comes increase in crime and safety concerns due to concentrated populations.

Urban centres that demonstrate robust safety and security strategies and adopt appropriate technologies will be better able to leverage new investments and improve quality of life.

immune to disasters, necessitating the need to consider disaster risk reduction and resilience strategies into the urban development process. The interconnected nature of SDG 11 and the Sendai Framework offer a unique opportunity for collective local and global action towards risk reduction and enhanced resilience, which is hugely supported by the emergence of a multiplicity of data collection methods which can accurately access risk and predict disasters, resulting in less damage. However, governments must localize disaster risk reduction strategies, including the development of frameworks that support generation of disaster related data close to real time to allow informed decisions on risk exposure.

Cities produce millions of tons of solid waste daily. Managing waste well and affordably is one of the key global urban challenges. If well-managed and processed, municipal solid waste provides numerous urban benefits such as employment opportunities for youth and women, low-cost energy, and helps to improve the overall urban environments leading to improved quality of life. The waste indicator strongly connects with other dimensions of sustainability. Cities are also facing high levels of air pollution, with the number of deaths associated to outdoor air pollution estimated to have increased in recent years. Rapidly industrializing countries with large urban populations are experiencing rapid deterioration in air quality. Unlike solid waste management, exposure to air pollutants is largely beyond the control of individuals, and requires action by public authorities at the national, regional and international levels. A multisectoral approach is required, involving relevant sectors such as transport, housing, energy production and industry, to implement long-term and proven policies effectively and thereby reverse current

trends. Investments in collection of high resolution data for all urban settlements on prevailing air quality is needed, and new methods that involve earth observation techniques can substantially contribute to this target.

Public spaces are a key component to urban functionality and promote social cohesion, higher equality, safety and improved health and well-being. They increase property values, retail activity multiplication and city attractiveness. Unfortunately, data shows that land allocated to public spaces is not sufficient and in many cities this share is reducing, particularly with regards to the measurement of streets, as public spaces. To change the current trends, deliberate action at the city level will be required focusing on designing new urban development plans. These policies ensure that the right balances of open public spaces within human settlements will be struck.

The 2030 Agenda for Sustainable Development and the New Urban Agenda emphasize the need to ensure urban and regional territorial developments, and advocate for the need to invest in urban and rural interlinkages. Urbanization plays a key role in facilitating and ensuring that there is a harmonious regional development that offers tangible connections and benefits across urban

and rural areas. Cities work as markets for rural products and vice versa. Cities are also incubators of new technologies and knowledge and offer several other benefits that should be enjoyed by all residents and visitors. Regional and national urban development plans must be guided by well-designed national urban policies. Urban policies provide a structure and organization to the process of spatial transformation, population dynamics and financial accountability; which covers the entire scope of the urban- –rural continuum. Many countries have existing national urban policies, others are developing them, while a considerable number have shown commitment to development of national urban policies that are needed to guide urban growth that is line with the aims of the SDGs and the NUA.

All these targets and indicators should not be examined in isolation. They are fundamentally integrated and interdependent, as the overall agenda for sustainable development. Understanding better the range of positive and negative interactions among them is key to unlocking their full potential. Connecting land to housing, transport, air quality, public space, participatory planning will permit to develop synergetic interactions with long-lasting results, a key ingredient for ensuring the success of sustainable urban development.



## Strengthening local and global partnerships

Partnerships need to be established with UN Agencies, space agencies, universities, private sector, civil society with the aim of enhancing the reach and possibilities of scaling up implementation and global monitoring efforts for SDG 11 targets and indicators.

## ANNEXES

**Annex 1: List of workshops and expert group meetings on SDG 11 methodological developments**

Name	Venue	Date	About
First Technical meeting on Human Settlements Indicators for SDGs	Naivasha, Kenya	13 to 17 February 2017	Assessing gaps in the production of human settlement Indicators
EGM on 1.4.2	Washington DC - USA	25th – 26th May	International expert group meeting on land tenure security to develop a set of household survey questionnaire to monitor indicator 1.4.2
Expert Group Meeting on 1.4.1	Virtual	28th September 2017	Methodology and Indicator refinement
Expert Group Meeting on 11.2.1	Berlin - Germany	28th September 2017	Methodology and Indicator refinement
Expert Group Meeting on 11.3.1	New York - USA	19th -20th May 2016	Methodology and Indicator refinement
Expert Group Meeting on 11.3.2	Virtual	21st November 2016	Methodology and Indicator refinement
Expert Group Meeting on 11.4.1	Paris - France	26th – 28th September 2016	Methodology and Indicator refinement
Expert Group Meeting on 11.7.1	Virtual	9th December 2016	Methodology and Indicator refinement
Expert Group Meeting on 11. a.1	Virtual	15th September 2016	Methodology and Indicator refinement
Expert Group Meeting on 11. a.1	UN-Habitat- OED boardroom	22nd September 2016	Methodology and Indicator refinement
Expert Group Meeting on 11. 6.1	Virtual	26th January 2017	Methodology and Indicator refinement
Expert Group Meeting on 11. c.1	Virtual	16th July 2017	Methodology and Indicator refinement
Expert Group Meeting on Geospatial Definitions for Human Settlements Indicators of the SDGs	Brussels, Belgium	26 to 28 April 2017	Address the issues surrounding definitions of the urban extent that is most appropriate for monitoring the SDGs, and explore implications of the urban extents on land related indicators including those based on rural definitions
Technical Workshop on Data Disaggregation Methodology	Addis Ababa – Ethiopia	19 – 20th October 2017	Demystify the data disaggregation methodology for the SDGs
Regional Training Workshop on Human Settlement Indicators for Africa	Gaborone-Botswana	13-15th December 2017	Acquaint national statistical agencies with the ongoing efforts towards monitoring of SDG 11 and other urban related SDG indicators;
Regional Training Workshop on Human Settlement Indicators for Asia-Pacific	Bangkok, Thailand,	26 - 29 March 2018	Acquaint national statistical agencies with the ongoing efforts towards monitoring of SDG 11 and other urban related SDG indicators;
Regional Training Workshop on Human Settlement Indicators for Western Asia	Cairo-Egypt	2-5h July, 2018	Acquaint national statistical agencies with the ongoing efforts towards monitoring of SDG 11 and other urban related SDG indicators;



