

UNECE

Guidelines on evidence-based policies and decision-making for sustainable housing and urban development



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EXECUTIVE SUMMARY

Countries and cities in the UNECE region face diverse urban development challenges: uncontrolled urbanization, urban sprawl, informal development, homelessness, climate change and environmental pollution, and providing access to urban infrastructure and services, most notably to adequate and affordable housing for all. The situation becomes particularly challenging in light of emergency situations such as earthquakes, floods and most recently, the spread of the COVID-19 virus in countries and cities in the UNECE region. Despite considerable efforts made by governments of UNECE countries to develop policies, projects and programmes, and to build partnerships addressing these issues, multiple challenges remain.

There is a common understanding among policymakers, practitioners and scholars that the lack of reliable data and evidence and the insufficient capacity of governments to use this data constrain opportunities to develop adequate policy responses and are the key reasons why many policies fail to induce a tangible change and improve urban environments. The effect of this is that progress towards achieving the Sustainable Development Goals (SDGs), especially SDG 11: “Make cities and human settlements inclusive, safe, resilient and sustainable”, in the UNECE region remains limited and this is why establishing better standards for the production, management and use of data and evidence in policymaking is one of the priority tasks under the *2030 Agenda for Sustainable Development* (2030 Agenda) to ensure its timely implementation.

The guidelines in this document (Guidelines) aim to support the efforts of governments in the UNECE region to improve evidence-based policymaking on sustainable urban development and housing. They inform discussions that took place during the national workshops conducted within the United Nations Development Account (UNDA) tenth tranche project: “Evidence-based policies for sustainable housing and urban development in selected countries with economies in transition”, which demonstrated that national, regional and local governments, in addition to other stakeholders in the UNECE region, (i) require further support to develop national and local sets of indicators for monitoring and implementing sustainable housing and urban development policies and the SDGs and (ii) need to improve production, management and use of evidence in the policy processes and decision-making for sustainable urban development.

With a view to improving the implementation and review of the *2030 Agenda* at all levels of governance and achieving the SDGs, especially SDG 11, as well as the implementation of the *Geneva UN Charter on Sustainable Housing* and other international agreements, the Guidelines:

- (a) Capture the diversity of ongoing activities of policymakers at national and local levels and other stakeholders in the UNECE region to develop evidence-based policies on sustainable urban development with a focus on housing;
- (b) Present the benefits of deploying evidence-based approach(es) to policymaking in relation to the production/ collection of data and the development of evidence and decision-making, in the context of national, regional and local development agendas;
- (c) Demonstrate the application of various policy approaches (frameworks, methodologies, and other tools) into practice, in order to improve the review and to reinforce the efforts in meeting SDG 11 and other urban related targets in the UNECE region.

This document serves as a practical reference for policymakers and for other experts involved in the development, review and implementation of policies on sustainable housing and urban development at all levels of governance. The Guidelines can be used at all stages of policy development – from agenda setting and policy formulation to implementation/review and evaluation.

The Guidelines refer to the UNECE region, where the UNDA project has been implemented since 2016. However, the document and its recommendations also apply to countries outside the UNECE region.

Implementation of the *2030 Agenda* requires taking a broad view of housing and urban issues and applying a strategic approach to addressing them. This requires policymakers to develop, implement and review approaches to the production of data, and developing evidence and decision-making, in order to ensure rigour in the policy process and that policy decisions are well targeted and proportional.

In recognition of the growing importance of data in policymaking and with a view to improve the review and implementation of the *2030 Agenda* in the UNECE region, the Guidelines document (i) outlines selected challenges and opportunities for evidence-based policymaking in the UNECE region; (ii) provides examples of the ongoing activities to inform the review and implementation of the *2030 Agenda* in the UNECE region; and (iii) demonstrates the benefits of applying selected approaches to evidence-based policymaking.

The introduction recognizes that the efforts of policymakers to effectively address urban development challenges, such as the limited supply of decent quality affordable housing, are hindered by a range of factors, including insufficient capacities to carry out collection and analysis of data in a comprehensive and timely manner, and insufficient coordination between and among data producers and data users in the process. It therefore emphasizes that the *2030 Agenda* envisages a new, more rigorous approach to policy development and implementation and encourages decision makers to embrace opportunities stemming from the “data revolution”, while also ensuring that “no one is left behind”. The chapter explains the meaning attributed to “data”, “evidence” and “evidence-based policymaking” in the Guidelines.

Chapter one considers the role of data in evidence-based policymaking. It indicates how to acquire/collect high quality data for sustainable housing and urban development policies. It maps key data providers and mainstream sources of data for sustainable housing and urban development policies, especially the housing and population censuses and household surveys. It portrays how the data revolution, including the rise of “big data”, “geospatial information”, “citizen data” and private sector data, have changed the landscape of production and governance of data in UNECE countries. The chapter outlines opportunities stemming from collaborative data production and the value of “data collaboratives” to improve the production of urban data in view of the limited capacities of public budgets; and to ensure that the data and evidence used in decision-making processes is credible and relevant to housing and urban challenges “on the ground”.

Chapter two describes how data becomes evidence and multiple ways of ensuring that evidence used in policy development and decision-making is high quality and relevant. It demonstrates how to implement the key values of the *2030 Agenda* into an evidence-based policy process. The chapter highlights why and how policymakers should carry out data analysis so that “no one is left behind” and flags the importance of disaggregating data per gender, age, ethnicity, income, disability and migratory status. The chapter finally stresses that quality assurance is one of preconditions for crafting reliable evidence and designing an indicator set.

Chapter three focuses on how data and evidence should be used to inform sustainable housing and urban development policies to ensure the highest reliability and accuracy of policy responses to housing challenges in countries and cities in the UNECE region. It points to the role of comprehensive approaches to decision-making in relation to housing and urban development. It concerns for instance the use of Key Performance Indicators for Smart and Sustainable Cities (KPI4SSC) to produce data for sustainable housing and urban development policies and to guide decision-making; or the role of “in advance” approaches to the production of data and decision-making, especially foresight and scenario-based methodologies, integrated sustainability assessment and regulatory impact assessments.

Last but not least, the chapter concludes that evidence-based policymaking for sustainable housing and urban development requires a “universal” and collaborative approach to policy process and decision-making and also embracing the challenges and opportunities stemming from international “policy transfer”.

This Guidelines document provides a range of recommendations, with a view to improve evidence-based policymaking for sustainable housing and urban development in the UNECE region and to ensure the alignment of housing and urban development policies with the *2030 Agenda*. It flags the importance of improving policy coherence, and better aligning policy initiatives and the corresponding review mechanisms to the review of the implementation of the *2030 Agenda*. Its recommendations highlight the need for policymakers to ensure an integrated and coordinated approach to the implementation of the *2030 Agenda* and monitoring progress towards SDGs, with the participation of all relevant stakeholders at the global, regional, national, subnational, sub-regional, and local levels. This document also recommends governments to be aware of the emerging reporting requirements resulting from the implementation of the *2030 Agenda* in their country and to promote this across the institutional spectrum.

The Guidelines emphasize the importance of data to develop policies for sustainable housing and urban development and to monitor progress towards SDGs. The production of high-quality and relevant policies and successful reporting on SDGs require improving the capacities of urban data producers, openness in data sharing and transparency in the use of data in policy responses. This highlights the need to improve the capacities of national statistical offices (NSOs) in the UNECE region to produce timely urban data, as well as to improve cooperation with other organizations and agencies comprising national statistical systems in UNECE countries to leverage considerable amount of data for policymaking. Furthermore, as cities play active role in the realization of the *2030 Agenda*, it is essential: to promote the initiatives of measuring progress towards sustainable development at the local level, to support local data production, and to explore the use of non-statistical and administrative indicators in the review of implementation of the *2030 Agenda* and in the development of evidence-based policies. This concerns especially the use of already existing global standards to evaluate the performance of cities (communicate outcomes in the process), such as the KPI4SSC.

Policymakers should consider making various types of data publicly available, which provides an additional measure to verify accuracy and relevance of data, and evidence used in policy process and decision-making. However, improving openness of data and developing partnerships with private sector organizations should ensure data privacy and anonymity while keeping the Government, private sector organizations and/or other stakeholders involved in the process accountable for data handling at the same time.

The complex nature of housing and urban development challenges and their solutions require understanding in order to effectively address them. Policymakers should ensure a comprehensive approach to evidence-based policymaking and decision-making with an intent to maximise the potential of data in the policy process and improve the quality and reliability of policy proposals. Better recognition of the “externalities” of policy interventions, e.g. their positive and negative “effects”, is required to improve the quality of evidence-based policy process. The process involves producing/acquiring data and developing evidence that corresponds to the outcomes and effects of policy interventions in relation to various aspects of urban life; and whenever appropriate, at various scales – regional, national and supra-national. Integrated and comprehensive methodologies, frameworks and other tools should be used better to assess the complex impacts of housing and urban interventions, and to help design adequate proposals of future policies, programmes and projects.

Just as importantly, this document emphasizes that effective policy interventions should be impartial and objective. In this regard, it is important to consider the following: i) breaking the “silo mentality” in connection with housing and urban policies is important (increasing the pace of building houses without consideration of environmental standards and urban planning cannot successfully improve access to decent quality, affordable housing); ii) the effective use of impact assessments and integrated sustainability assessments, including foresight, to make decision-making more forward-looking and to improve management of risks resulting from adverse effects of policy initiatives; iii) sharing knowledge and “good practices” regarding available policy instruments and policy tools for the review of SDG 11 and other housing and urban-related targets; and iv) communicating policy initiatives to the general public in a clear, transparent manner, using the best available tools and removing technical, cultural and economic access barriers, as much as possible.



INTRODUCTION

Policy context

Countries and cities in the UNECE region face diverse challenges: uncontrolled urbanization, urban sprawl, informal development, homelessness, climate change and environmental pollution, outdated urban infrastructure, fuel poverty, and most notably, limited access to adequate and affordable housing for all. Policymakers make considerable efforts to address these issues by generating policies, projects and programmes that are based on the best available data, the most reliable evidence and to ensure such initiatives are delivered in a timely manner. However, considering the limited capacities of data producers and data analysis and the challenges of inter- and intra-institutional coordination, the implementation of evidence-based sustainable housing and urban development policies remains a challenge.

Over the last decade, housing has become an increasingly more important subject of public debate. Housing market dynamics triggered the global financial crisis, the legacy of which is still alive. Growing social and economic inequalities in cities, the development of informal settlements and slums on the one side, and gated communities on the other side, as well as the ever increasing costs of urban interventions, have demanded further action from policymakers and induced global policy responses including the introduction of the *Right to Adequate Housing*, in the context of the *Habitat Agenda* (1996). Housing has been placed at the centre of the *2030 Agenda*, the *New Urban Agenda*, and the *Geneva UN Charter on Sustainable Housing*.

The *Right to Adequate Housing* and the *Geneva UN Charter for Sustainable Housing* point out that the access to decent quality and affordable housing for all is a precondition for improving quality of life, social cohesion, and increasing the pace of economically viable and green growth of countries in cities. The *2030 Agenda* emphasizes that limited access to affordable housing, uncontrolled urban sprawl and growing urban slum populations are global problems. In addition, the SDG 11 addresses a need to improve urban environments by creating smart, safe and efficient urban transport systems. The recently enacted *New Urban Agenda* focuses on enabling policymakers to develop and put into action evidence-based sustainable housing and urban development policies.

The transversal values of the *2030 Agenda* and the commitment to its realization has been embraced by the European Union (EU) institutions, as sustainable development is a fundamental objective of the EU in the Treaty of Amsterdam established in 1997. Despite not having any specific mandate regarding housing, land management and urban planning, the EU institutions influence the development of housing and urban policies in the EU member states. They concern, for instance, the EU regulations on energy efficiency, the State Aid rules, the Urban Agenda for the EU, the European Pillar of Social Rights, and the corresponding mechanisms, funding, international cooperation, international aid programmes and many others.

Policymakers in the UNECE region have recognised that implementation of the *2030 Agenda* is limited by the availability of reliable data and inefficient data processing. Establishing better standards for the production/ collection and use of data and evidence was therefore discussed in the United Nations Millennium Development Goals (MDGs) and the SDGs¹ of the *2030 Agenda*.

The MDGs emphasized the importance of gathering and monitoring data in order to achieve the Goals, they also put forward objectives to strengthen the use of data in decision-making in order to generate more targeted policy responses.² The MDGs, however: (i) focused only on developing countries and were not of an immediate interest to more developed countries; (ii) centred data collection at the national level, while housing and urban development are in many countries managed by local authorities; and (iii) did not specifically focus on gender and indigenous groups in relation to data collection and analysis (data on these groups of population was not collected by some NSOs considering they are the groups that frequently lagged far in benefitting from development progress).

Adoption of the *2030 Agenda* with its 17 SDGs addressed these shortcomings. The *2030 Agenda* not only put forward a range of urban-related Goals and targets that serve as milestones for developing evidence-based policies so

¹ United Nations, *The Millennium Development Goals Report* (2015).

² Ibid.

that “no one is left behind” (see list of SDG11 targets in annex 1), but it envisages a new, more rigorous approach to the role of data in the policy process. It concerns developing a set of national monitoring indicators, strengthening statistical capacities and capitalizing on the “data revolution”, harnessing new technologies and new sources of data, creating partnerships to meet monitoring requirements of the *2030 Agenda* (also in less developed countries), and focusing on data generation for and at the local level.³

For instance, the *2030 Agenda* calls for the development of innovative approaches and technologies to support the production and collection of data, especially in countries that lack capacities for data gathering. Goal 17 on capacity-building seeks to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.⁴ In this connection, further efforts are to be made to ensure equitable data gathering and reduce the gaps between the information-poor and information-rich countries and to support those that still do not have sufficient capacities or tools for producing the needed data.

Responsibilities for delivering the SDGs and for carrying out the review of the implementation of the *2030 Agenda* in a timely manner lie primarily with national governments. Since 2016, many countries have developed national sustainable development strategies and action plans. The 2018 round of Voluntary National Reviews (VNRs) on the implementation of the *2030 Agenda* demonstrated that policymakers have made efforts to mainstream SDGs across various policy areas, including statistics, and to establish SDG implementation platforms.⁵ Cities in the UNECE region continue demonstrating their determination to develop data-driven and evidence-based policies, to measure progress towards sustainable development and to produce relevant measurement tools.⁶ In this regard, there is a need to take further actions to improve governance for sustainable development and

to develop and implement evidence-based urban and housing policies in the UNECE region. The set of indicators adopted by the United Nations Statistical Commission in 2016 are being refined to ensure they are relevant and can be easily translated into the national contexts of the UNECE countries. Policymakers need to harmonize their approaches better to the review of implementation of the *2030 Agenda* and in developing housing and urban policies. Policymakers should also invest better in the collection/production of data, and in the development and use of evidence-based policy processes to accelerate progress towards the realization of the *2030 Agenda* to ensure that “no one is left behind”. Policy research, analyses, appraisals or evaluations should be more rigorous and better tailored to the needs of decision makers in policy circles within UNECE countries.

Just as important is the realization of the *Right to Adequate Housing* which warrants further attention given estimations that the struggle to obtain adequate and affordable housing could affect at least 1.6 billion people globally within a decade. Especially as in the year 2019, there are only eleven years remaining for the implementation of the *2030 Agenda*.

About the Guidelines

The Guidelines were prepared within the UNDA tenth tranche project “Strengthening national capacities for the development of evidence-based policies and accountability mechanisms for sustainable urban development in the UNECE region”, which has been implemented by the UNECE Housing and Land Management Unit and UN-Habitat Housing Unit since 2016. The objective of the project is to strengthen national capacities for the development of evidence-based policies and accountability mechanisms for inclusive and sustainable urban development in the UNECE region.

The aim of the Guidelines document is to support the development, review and implementation of evidence-based policies on sustainable housing and urban development, with a view to improving the review of SDG 11 and other urban-related SDGs in the UNECE region.

The Guidelines have three objectives:

- (a) To explain the benefits of applying evidence-based approach(es) to policymaking in relation to sustainable housing and urban development;
- (b) To provide examples of policy tools and instruments that can be used to collect and use data and evidence for policy and decision-making;

³ United Nations, “Secretary-General Calls for ‘Data Revolution’, Stronger Capacity, in Message for World Statistics Day”, press release, 19 October 2015. Available at <https://www.un.org/press/en/2015/sgsm17245.doc.htm>

⁴ United Nations, “Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development”, SDG Indicators: Metadata repository. Available at <https://unstats.un.org/sdgs/metadata/>

⁵ United Nations, “Voluntary National Reviews Database”. Available at <https://sustainabledevelopment.un.org/vnrs/>

⁶ “In-depth review of statistics and data on cities”, ECE/CES/2019/17.

- (c) To provide information about ways to improve the review and implementation of the *2030 Agenda* in UNECE countries, especially in relation to SDG 11 and other urban-related SDGs.

Approach, definitions and scope of the guidelines

The Guidelines address the topic on adequate and affordable housing and take into account that access to adequate and affordable housing is linked with energy efficiency of buildings, access to land for housing construction, urban and territorial planning and among others.⁷

In the Guidelines it is recognised that housing is a critical component of sustainable urban development and is a prerequisite for improving quality of life, social cohesion and economic growth in cities. The Guidelines build on the key principles on provision of housing in the UNECE region as defined in the *Geneva UN Charter on Sustainable Housing*: environmental protection, economic effectiveness, social inclusion and participation, and cultural adequacy.⁸

In the Guidelines, evidence-based policymaking⁹ is considered as an approach which: “helps people make well-informed decisions about policies, programmes and projects by putting the best available evidence at the heart of policy development and implementation”.¹⁰ Evidence-based policymaking is a cyclical and an iterative process that consists of many overlapping stages.¹¹

⁷ Office of the United States High Commissioner for Human Rights and UN-Habitat. *The Right to Adequate Housing* (2014). Using UN Habitat methodology, housing is considered adequate if it fulfils the following criteria: (1) security of tenure, (2) availability of services, materials, facilities and infrastructure, (3) affordability, (4) habitability, (5) accessibility, (6) location and (7) cultural adequacy

⁸ United Nations Economic Commission for Europe. *The Geneva UN Charter on Sustainable Housing* (2015). Available at <https://www.unece.org/housing/charter.html>.

⁹ The concept that is difficult to define. There is a variety of ways to discuss the role of evidence in policy development and decision-making; it includes e.g. “evidence-informed policy-making” (Oxman et al., 2009); or “evidence-based practice”. More on the subject in: Paul Cairney, *The Politics of Evidence-based Policy Making* (Palgrave MacMillan, London/New York, 2016).

¹⁰ Philip Davies, “What is evidence-based education?”, *British Journal of Educational Studies*, vol 47, No. 2 (1999), p. 108-121.

¹¹ In fact, data is mainly collected at early stages of the policy process, there is no one single entry point for data in the process. As new data emerges, it is included in policy processes within which it ‘circulates’ and enriches the stock of knowledge about a policy issue and ways of addressing it.

In the Guidelines, data is defined as the facts or numbers which are collected to be analysed and used in decision-making. Data on its own does not provide information about a phenomenon and its characteristics. The essence of the evidence is that it emerges as a result of data analysis and that it is used in relation to a particular policy option – it creates: “the case for a specific policy response”,¹² and an argument for and/or against it.¹³

Evidence-based policymaking entails the production of data and evidence, which is relevant to current policy challenges; using data and evidence to define new policies/programmes and redefine existing ones; and supporting systems of production and management of data and information, all of which are discussed in the Guidelines.

Development and use of the guidelines

The Guidelines were developed primarily based on documentary data. Documentary data was collected through desk review between July 2018 and February 2019 and includes for example, United Nations official documents, reports, and publications, including most notably the *Habitat III Regional Report on Sustainable Housing and Urban Development in the UNECE Region*; and policy documents, laws and reports produced by the EU institutions and other international organizations, and by the UNECE countries.

Insights from informal, semi structured interviews with the selected representatives of ministries of the UNECE countries, the EU institutions including the Committee of the Regions, the Directorate General for Regional and Urban Policy (DG Regio), Eurostat, the Directorate General Joint Research Centre (DG JRC), and the EU Parliament, were used to guide development of the Guidelines.

The Guidelines serve as a practical reference point, a go-to resource for policy officials and technical staff involved in the development, review and implementation of sustainable housing and urban development policies, and other professionals in the field. The Guidelines can be used at various stages of policy development: agenda-

¹² New Zealand, Office of the Prime Minister’s Science Advisory Committee, “The role of evidence in policy formation and implementation”, report from the Prime Minister’s Chief Science Advisor, September 2013.

¹³ Informing housing and urban development policies is described in the following chapter.

setting, policy formulation, implementation/review and evaluation.¹⁴

The Guidelines are complementary to the *International Guidelines on Urban and Territorial Planning*,¹⁵ *Road Map on Statistics for Sustainable Development Goals*,¹⁶ *Guidelines on the use of registers and administrative data for population and housing censuses*,¹⁷ *Measuring population and housing - Practices of UNECE countries in the 2010 round of censuses (2013)*¹⁸ and many others.¹⁹ The Guidelines, however, feature a greater focus on the production, management and use of data and evidence in the policy process, and identifies practical ways to improve decision-making at all levels of governance.

This Guidelines document acknowledges the complexities of urban development and housing and evidence-based policymaking on the ground. However, given the wealth of theoretical approaches to evidence-based policymaking and approaches to the review and implementation of the *2030 Agenda* in the UNECE countries, the Guidelines do not constitute an exhaustive resource on the subject. The Guidelines relate to the UNECE region,²⁰ however, they are also relevant to other countries, outside the UNECE region.

¹⁴ Paul Sabatier. *Theories of the policy process*, 2nd ed. (Colorado, Westview Press, 2007).

¹⁵ UN-Habitat, *International Guidelines on Urban and Territorial Planning* (Nairobi, Un-Habitat, 2015).

¹⁶ United Nations Economic Commission for Europe, *Conference of European Statisticians: Road Map on Statistics for Sustainable Development Goals* (United Nations, New York and Geneva, Sales No. E.17.II.E.22, 2017).

¹⁷ United Nations Economic Commission for Europe, *Guidelines on the Use of Registers and Administrative Data for Populations and Housing Censuses* (United Nations, New York and Geneva, Sales No.: E.19.II.E.4, 2018).

¹⁸ United Nations Economic Commission for Europe. *Measuring population and housing: Practices of UNECE countries in the 2010 round of censuses* (United Nations, New York and Geneva, 2014).

¹⁹ Full list of the UNECE publications can be found at <https://www.unece.org/publications/oes/welcome.html> and the UN-Habitat publications at <https://unhabitat.org/urban-knowledge/publications/>.

²⁰ Details of the UNECE region can be found at www.unece.org.





CHAPTER 1

PRODUCING DATA FOR SUSTAINABLE HOUSING AND URBAN DEVELOPMENT POLICIES

Production and collection of data lies in the centre of evidence-based policymaking for sustainable housing and urban development. The processes are essential to understanding a specific problem and the reasons why the problem requires action and solutions.

In evidence-based policy process, data can be understood as: “facts and figures which relay something specific, but which are not organized in any way and do not provide further information regarding patterns, context, etc.”²¹ Data can be expressed in numerical and non-numerical language (often textual or visual).²² Although data exists without context, only contextualized and analysed data can be used for developing evidence and to inform policies.²³

Data to be used in policy processes should be relevant, of high-quality, with sufficient detail and timely. The role of policymakers is to identify various types of data producers and data sources and to carry out assessment of data needs and data gaps, especially to assess (i) whether there is enough data on this issue or a need to collect additional data, (ii) what new data have already existing policies and how to use that data in crafting new policies, and (iii) what new data is needed to address this particular issue, who produces it and how is it sourced.

To these ends, the following section maps the key data providers and mainstream sources of data for sustainable housing and urban development policies, including the Housing and Population Census and household surveys. It outlines opportunities stemming from collaborative data production and the value of “data collaboratives” in both improving the production of urban data taking

into account the limited capacities of public budgets and ensuring that the data and evidence used in decision-making processes is credible and relevant to housing and urban challenges “on the ground”. Finally, the section points to the fact that the rise of “big data”, “geospatial information” and “citizen data” have changed the landscape of data production and data governance in UNECE countries.

Main data producers and sources

Access to good quality data (data of a sufficient detail and granularity) is a precondition for developing well targeted housing and urban development policies and it is essential for fulfilling the obligations stemming from the realization of the *2030 Agenda* in the UNECE region. In this context primarily, responsibilities lie with NSOs and other key actors comprising the national statistical systems²⁴ in UNECE countries.

The NSOs produce official statistics²⁵ and other statistical data used for official reporting on SDGs at a national level and for producing VNRs. They also play a key role in producing essential data for housing and urban policies using for instance, the Housing and Population Census. The organization of NSOs in UNECE differ and the NSO can have regional and local offices that can also produce regional or local statistics. Data produced by NSOs is publicly available.

Apart from NSOs, other important producers of data for evidence-based policies on sustainable housing and urban development are the organizations comprising the national statistical systems in UNECE countries. The organizations, including municipalities, non-

²¹ Knowledge Management Tools, “Defining Knowledge, Information, Data”, 2018. Available at <http://www.knowledge-management-tools.net/knowledge-information-data.html>.

²² CESSDA Training Team, “Data in the social sciences”, CESSDA Data Management Expert Guide. Available at <https://www.cessda.eu/DMGuide>.

²³ David Wilkinson, “What’s the difference between data and evidence? Evidence-based practice”, The Oxford Review. Available at <https://www.oxford-review.com/data-v-evidence/>.

²⁴ A National Statistical System is an assembly of statistical organizations and institutions that produce/collect, process and disseminate statistics, and disseminate the official statistics on behalf of a national governments.

²⁵ See the Fundamental Principles of Official Statistics at <https://www.unece.org/stats/fps.html>.

governmental organizations and academia, are all discussed in the sections below.

Housing and Population Census

A housing and population census provides a comprehensive source of statistical data. It relies on assessing conditions in human settlements, research and commercial uses²⁶ and is used for economic and social development planning, administration.

The Statistics Division of the United Nations Department of Economic and Social Affairs (UN DESA) defines a housing census as: “the total process of collecting, compiling, evaluating, analysing and publishing or otherwise disseminating statistical data pertaining, at a specified time, to all living quarters and occupants thereof in a country or in a well delimited part of a country”.²⁷ The housing census also provides an assessment of the living conditions of vulnerable populations and allows gaining details on the spatial characteristics of shelter quality, costs, facilities, surroundings and how they may affect: economic activity, health, social intercourse and general outlook.²⁸ Whereas a population census gathers data on household characteristics in terms of demography, a housing census gathers data on the physical characteristics of housing units.

Data collected using censuses is used as basis for development of housing and human settlement programmes and policies, land-use planning, and planning for disaster risk reduction.

The principles of any Housing and Population Census entail: individual enumeration, universality within a defined territory, simultaneity, defined periodicity, and capacity to produce small-area statistics.²⁹

For the 2020 round of censuses, the Censuses of Housing and Population should include focus on:

- (a) Type of living quarters;

- (b) Housing arrangements;
- (c) Occupancy status of conventional dwellings;
- (d) Type of ownership;
- (e) Number of occupants;
- (f) Useful floor space and/or number of rooms of housing units;
- (g) Density Standard (Derived);
- (h) Water supply system;
- (i) Toilet facilities;
- (j) Bathing facilities;
- (k) Type of heating;
- (l) Dwellings by type of building;
- (m) Dwellings by period of construction of building.³⁰

More information about the Housing and Population Census, including the overview of standards and methods to plan, organize and conduct a census, can be found at: <https://unstats.un.org/unsd/demographic-social/Standards-and-Methods/>

More information about the 2020 Housing and Population Census can be found at <https://unstats.un.org/unsd/demographic/sources/census/census3.htm>

A census is not a sufficient tool to provide a comprehensive data for housing and urban development policies. As it runs every ten years,³¹ it does not capture rapidly emerging dynamics or changes that occur on a more recurrent basis, which is particularly problematic as many countries and cities in the UNECE region experience frequent demographic or housing changes.

Policymakers should also use tools better for the collection of housing and urban data such as household surveys³² and recognise that the census data can be further used as a reference point while conducting specialized housing surveys and housing assessments analyses, as well as when comparing certain geographic areas or the housing conditions of certain groups, to national norms as established by the housing census and others.

²⁶ United Nations Department of Economic and Social Affairs. *Principles and Recommendations for Population and Housing Censuses* (United Nations, New York, Sales No. E.15.XVII.10, 2017), p. 4.

²⁷ *Ibid*, p. 8.

²⁸ *Ibid*, p.158

²⁹ *Ibid*, p. 8. (1) Data must be disaggregated at the individual and living quarters level, (2) data should be exhaustive in scope within the delineated territory, (3) collection should refer to a well-defined time period whether done with a small gap or through a rolling census method (4) data should be taken at regular intervals and (5) census should produce data on the lowest appropriate level.

³⁰ United Nations Economic Commission for Europe, *Conference of European Statisticians: Recommendations for the 2020 Censuses of Population and Housing* (United Nations, New York and Geneva, 2015), p. 214.

³¹ In terms of regularity, for most countries, UN DESA recommends “that a national census be taken at least every 10 years”. UN DESA, *Principles and Recommendations for Population and Housing Censuses* (2017).

³² Registers and administrative data are also the sources of data for population of censuses in UNECE countries.

Household surveys

Household surveys constitute another source of data for housing and urban development policies. They can be launched by NSOs, Governments (national/regional/local),³³ and other public sector organizations and agencies.

Censuses and surveys differ in their scope since a census is a complete enumeration (i.e. a study of every unit, everyone or everything, in a population) while a survey constitutes a partial enumeration (i.e. a subset of units in a population, selected to represent all units in a population of interest).³⁴ Surveys are a more feasible and cheaper method of gathering data than for instance, a census.

Household surveys should be carried out alongside population censuses in order to link data on household demographics and socioeconomic conditions with data on physical characteristics of housing. The value-added of the surveys is that they “provide reliable data on a range of demographic and socio-economic characteristics” of various populations of interest.³⁵

Household surveys can be used to measure the socioeconomic characteristics of a given population at a specific point in time. Therefore, they are particularly relevant to targeted urban policies. They can be used to assess the volume of population living in inadequate housing (e.g. slums), even in a disaggregated manner (by geographic area, gender, age, income and ethnic group). Household surveys carried out in many countries at a similar time allow the comparison of housing and urban development dynamics in various countries.³⁶

Household surveys are conducted on a sample taken from a certain population. This requires employing appropriate sampling techniques for the target population. Sampling methods include probability sampling and non-probability sampling. The former is more accurate since

³³ Many cities directly collect data at the local level through household surveys. For instance, New York City has an Open Data portal in which one can find information about a variety of topics ranging from City Government to Education and Health among others.

³⁴ Australian Bureau of Statistics, “Statistical Language - Census and Sample”, 3 July 2013. Available at <http://www.abs.gov.au/websitedbs/a3121120.nsf/home/statistical+language++census+and+sample>.

³⁵ United Nations Department of Economic and Social Affairs. *Household sample surveys in developing and transition countries*. (United Nations, New York, Sales No. E.05.XVII.6, 2005), p. 4.

³⁶ UN DESA, *Principles and Recommendations for Population and Housing Censuses*. p. 16.

the results reflect the characteristics of the population from which they are selected. More information on conducting household surveys can be found at <https://www.unecce.org/stats/ces/in-depth-reviews/hsm.html>.

Registers and administrative data

Registers and “administrative data” play an important role in the development of sustainable housing and urban development policies.

In some countries administrative data is considered a synonym for “register-based” data. However, registers can be defined as: “a systematic collection of unit-level data organized in such a way that updating is possible, where updating is the processing of identifiable information with the purpose of establishing, bringing up-to-date, correcting, or extending the register, that is, keeping track of any changes in the data describing the units and their attributes”.³⁷ On the other hand, administrative data is typically: “data holdings that contain information collected primarily for administrative (not research or statistical) purposes”.³⁸ Administrative data is collected by national/federal, regional or local governments.

Of particular relevance to evidence-based policymaking on sustainable housing and urban development is administrative data collected from land registers and cadastres.

Land registers are organizations that register information relating to the real estate and provide information on land ownership, as well as the value and use of land. They shed light on the ownership of land, the security of tenure, investments and other private and public rights in real estate, helping to ensure fairness in land and property taxation. Cadastres concern themselves primarily with land surveys (a cadastre is not exclusively concerned with ownership). For instance, a cadastre provides detailed information at the individual land parcel level and includes a series of maps or plans showing the size and location of all land parcels, together with text records that describe the attributes of the land.

Data retrieved from a cadastre or a land register can be integrated with sociological, economic and environmental data to be used for a range of activities, such as asset management, credit security, development control, emergency planning and management,

³⁷ UNECE, *Guidelines on the Use of Registers and Administrative Data for Populations and Housing Censuses*.

³⁸ Ibid.

environmental impact assessment, housing transactions and land market analysis, land and property ownership, land reform, monitoring statistical data, physical planning, public communication, site location, site management, site protection, and others.

Up-to-date large-scale cadastral plans of urban areas provide the basic framework for urban and physical planning. Urban and land-use planning must therefore operate in conjunction with land registration since it involves measures that create new subdivisions of the land and new patterns of land use. Failure to identify existing patterns and rights of ownership can lead to delays or even failure in development programmes, especially in urban areas.³⁹

Local data producers and sources

The development of sustainable housing and urban development policies based on high-quality and relevant data in a timely manner plays a key role in accelerating progress towards SDGs. In order to do this, policymakers need to recognise better not only the role of national statistical offices and their regional, local branches, but also the role of data producers at the local level, especially municipalities, universities and non-governmental organizations (NGOs).

In many countries in the UNECE region the municipalities need additional support to improve their capacities to produce or collect high-quality data and/or to carry out data sourcing in an efficient manner. Cities are the engines for economic growth and sustainable development, and they play a critical role in the implementation of all 17 SDGs. In cities, municipalities are the arms of the government closest to citizens. They provide essential infrastructure and services, and in UNECE countries, with devolved power and administrative structures they also hold competencies regarding planning for housing and urban development. Furthermore, municipalities have an in-depth knowledge about local urban development challenges, including homelessness, access to affordable housing and poor condition of the housing stock. Municipalities also produce or collect the “local data” - the type of data that has a particular spatial attribute - which is contained within the administrative boundaries of a

³⁹ United Nations Economic Commission for Europe, *Land Administration Guidelines: With Special Reference to Countries in Transition* (United Nations, New York and Geneva, Sales No E.96.II.E.7, 1996).

city, for instance rich administrative data (register-based data and cadastre discussed in the previous section).

Policymakers at all levels should promote the development of partnerships between municipalities and NSOs to improve the quality and the timeliness of data for evidence-based policies. One successful example of such initiative is the CBS Urban & Regional Data Centres in the Netherlands (see box 1).

Box 1 CBS Urban Data Centres⁴⁰

CBS Urban Data Centres (UDCs) are tailor-made data centres that emerged as a result of collaboration between Statistics Netherlands (CBS), which produces 100 per cent of official national statistics in the Netherlands,⁴¹ and municipalities in the Netherlands. The objective of UDCs is: “to broaden, deepen and improve data at local level by combining the knowledge, data and expertise of CBS and a municipality”⁴²

In order to intensify its interaction with society and adapt its services to the needs of the users, Statistics Netherlands took the initiative to transform the national system of data production and collection towards a better focus on data for policymaking at regional and local levels and to create Urban Data Centres. The underlying idea is that this will result in a broader and better basis for decision-making at municipal level and provide a solid basis for municipal forecasts. Since the start in 2016, the Urban Data Centres have proven to lead to: a better understanding of a city; better city decisions (facts based and data driven); better city finances; and harmonized, standardized and benchmarked local, regional, national and international data.

To improve the processes of the production of data for sustainable housing and urban policies, policymakers should also support the processes of data collection

⁴⁰ Statistics Netherlands, “CBS Urban data centers: substance and added value”, Statistics Netherlands, 2020. Available at <https://www.cbs.nl/en-gb/dossier/regional-statistics/cbs-urban-data-centres-substance-and-added-value>.

⁴¹ It uses three major data sources. First source: around 20 national surveys. Second source: 200 national administrative (register) data sources coming from (semi-)governmental organizations. Under the Dutch statistics law all these organizations are obliged to provide Statistics Netherlands with their administrative data (register) data sources. The third source, one of fast-growing importance, is big data.

⁴² Ibid.

(and analysis) carried out by universities and better utilize the potential of collaboration with universities to develop evidence-based sustainable housing and urban development.

Universities are guardians of knowledge and they produce objective, high quality data and evidence for housing and urban development policies. As they develop case studies, policy and programme evaluations, they inform and facilitate the implementation of housing policies and derive “best practices” in the field. For example, researchers at the University of Bern, through the ResiDENSE: Governance of Densification for Sustainable Housing Development in Swiss municipalities under the Increasing Densification Pressure project, are actively involved in analysing local governance mechanisms relating to housing densification at the municipal level through case study analyses. Using the case study approach the study collects qualitative data on mechanisms of inner-city densification initiatives and whether they are promoting or preventing socially sustainable neighbourhood development in cities.⁴³

Last, but as important, policymakers in the UNECE region should recognise the role of NGOs better in the production and collection of data for policy and work closer with them to develop more grounded sustainable housing and urban development policies. NGOs supplement the work of Governments in areas such as development and welfare policies, for example by providing shelter and care-related service to low income earners and disadvantaged groups. They have a good, practical understanding of challenges and needs on the ground. Therefore, they are in a good position to support the activities of national and local statistical institutes and organizations by providing inputs and comments to policy initiatives, statistical and research reports and gathering relevant, often difficult to access, data (see box 2).

Other data sources and new data

Finally, it is the role of policymakers to explore the opportunities and challenges in the use of the “other”,

⁴³ Gabriela Debrunner, “ResiDENSE – Governance of densification for the socially sustainable development of the housing resource in urban neighborhoods”, PhD workshop at the International Academic Association on Planning, Law, and Property Rights Annual PLPR Conference in Novi Sad, Novi Sad, Serbia, 2018. Available at http://www.plpr2018.uns.ac.rs/images/doc/workshop/PLPR_Gabriela_Debrunner.pdf.

“new” sources of data to develop sustainable housing and urban development policies and monitor the SDGs. This requires drawing on changes brought about by globalization, especially digitalization and the development of information and communication technologies (ICTs).

Box 2 Counting rough sleepers in Barcelona

Development of evidence-based housing and urban policies entails acquiring reliable and accurate data on the number of persons sleeping rough on the streets and addressing homelessness on this basis. Policies and allocation of resources to address homelessness issues are typically found at the city level. In 2015, working closely with the municipality of Barcelona, Fundació Arrels (Arrels Foundation) together with the Network for Attention to the Homeless; XAPSELL⁴⁴ undertook an initiative to count number of homeless persons sleeping rough, on the streets in the city.

The NGO used 700 volunteers – in groups of three or four – to comb 160 areas of the city during the night. This approach has been deployed internationally and acknowledged as a particularly useful approach to assess the scale of the phenomenon periodically.⁴⁵ The Barcelona-based NGO registered minimum 892 persons sleeping on the streets on 27 May 2015. Having repeated the initiative, at the last count, in May 2018, 966 people were counted as sleeping on the street.⁴⁶

The process of digitalization has redefined evidence-based policymaking for sustainable housing and urban development in various ways (see box 3). It has also affected the production of data in UNECE countries insofar as currently, many companies collect data “passively” through daily transactions via the use of mobile phones. The use and widespread diffusion of ICTs has led to increases in the volume of collected data with estimates suggesting that: “90 per cent of the data in the world has been created in the last two years and is projected to increase by 40 per cent annually”.⁴⁷

⁴⁴ For more information about XAPSELL visit <http://sensellarisme.cat/es/>.

⁴⁵ Catalan News, “Almost 900 homeless sleeping on Barcelona’s streets, according to the Fundació Arrels” Catalan News, 27 May 2015. Available at <http://www.catalannews.com/society-science/item/almost-900-homeless-sleeping-on-barcelona-s-streets-according-to-the-fundacio-arrels>.

⁴⁶ Arrels Fundació, “The problem”, 2018. Available at <https://www.arrelsfundacio.org/en/homeless-people/the-problem/>.

⁴⁷ United Nations, “Big Data for Sustainable Development”. Available at <http://www.un.org/en/sections/issues-depth/big-data-sustainable-development/index.html>.

Box 3 Digitalization as an opportunity and challenge for housing policy

Over the past few years, digital transformation has risen in the agenda across Europe for a variety of reasons, including the fact that strategically applied and proficiently used information technologies can deliver savings to citizens, housing providers, local authorities and governments and bring about a new quality in policy and practice for sustainable urban development.

Digital transformation has changed housing policy and practice. It has affected the ways in which buildings and infrastructure are designed, constructed and managed. For instance, the Building Information Modelling (BIM), an intelligent 3D model-based process, provides architects and engineers the tools to plan, design and construct buildings with unprecedented efficiency and insight.

On the other hand, digitalization brings serious challenges to the housing sector. Home-sharing platforms have been shown to have a negative impact on housing affordability and communal cohesion. Indeed, ongoing debates about the importance of introducing tighter regulation of such platforms testify to the seriousness of this issue in some cities. Finally, as this data becomes an important resource for housing policy, the ethical questions associated with data privacy continue to figure prominently.

The use of ICTs for data production and collection brought about a range of benefits:

- (a) An extended breadth – For example, telecoms, social media platforms, financial institutions and high-tech corporations allow the gathering of data on population trends including the everyday behaviour of households in relation to expenditure, transport and other behavioural trends.⁴⁸
- (b) An improved quality – For example, companies instantaneously collect data of a high-level granularity, in a timely manner. The private sector has also developed specific indexes in some domains, of which the Zillow US House Value Index is an interesting example since its value and the

associated forecast may influence the decision of housing investment in a complementary way to other indicators that are in the purview of local authorities (e.g. national statistics and those produced by local authorities).

Furthermore, the development of ICT companies and technologies has supported the rise of big data which, as a new source of data, plays an increasingly important role in evidence-based policy process.

Big data

Policymakers at all levels of governance should reflect on both the opportunities and the challenges stemming from the use of “big data” for policy.

Big data emerged as a result of data revolution, characterised by high volume, high velocity and high variety of data. Big data can be referred to as a data generated automatically at a quick pace as a result of “data exhaust”, which consists of a “passively collected data” that is generated instantaneously as a result of daily usage of digital services such as financial services, communication services or information services (e.g. data about banking transactions, mobile phone use or social media interactions). Big data consists of several types of data, including electronic transactions, social media, automatic sensors, satellite images, text, audio, video and phone, and can contain both open-source and privately held types of data. This can make the aggregation of different data types complex.

One of the advantages of big data is its comprehensiveness owing to high level of granularity and volume. Urban-based big data can be applied to classical urban models including “models of housing dynamics and residential location theory”. It can be useful to explore and understand: “disparities relating to social justice and distributional aspects of transportation, housing, and land-use”; and the environment.⁴⁹

However, the complexity and size of such datasets warrant the use of large and powerful storage and delivery technologies. As such, big data: “cannot be analysed using conventional data analysis systems”⁵⁰ (see box 4). Furthermore, policymakers should ensure that

⁴⁸ The Economist, “Leveraging data successfully for development: A lack of adequate data quality can undermine efforts to use data analytics for social and economic development”, 2017. Available at <https://expectexceptional.economist.com/leveraging-data-successfully-for-development.html>.

⁴⁹ Piyushmita Thakuria, Nebiyou Tilahun and Moira Zellner. “Proceedings of NSF Workshop on Big Data and Urban Informatics”, 2014, p. 11. Available at <https://urbanbigdata.uic.edu/proceedings/>.

⁵⁰ Ibid, p. 35.

appropriate measures are taken to mitigate risks relating to handling big data, including data privacy.

Box 4 Challenges in the use of big data

Production and use of big data can pose a range of challenges relating to “data acquisition, storage, retention, use and presentation”.⁵¹ One issue is data privacy. Individuals have a limited understanding about the data they release and are often unaware of how this data is used. Research shows that it is possible to “de-anonymise” previously anonymised data sets.⁵² Also, the security of data storage can be challenged by data breaches.⁵³ Private corporations holding data are often reluctant to share their data, for analysis that informs policy decisions.⁵⁴

Secondly, analysing big data generates the following challenges: “(1) getting the picture right, i.e. summarising the data, (2) interpreting, or making sense of the data through inferences, and (3) defining and detecting anomalies”.⁵⁵ Also, there are “particular challenges to using big data in low- and middle-income cities” due to the introduction of potential sources of bias that can arise due to unrepresentative data, especially at the lower end of the income distribution.⁵⁶ This may then lead to policy analysis which is not catered to certain groups at the lower end of the income spectrum.

Although big data produced by private sector companies can be shared for public benefit on a voluntary basis,⁵⁷ policymakers need to ensure the capacities to analyse the data exist. On the other side, creating partnerships

with private, for-profit organizations, warrants special attention and requires addressing ethical issues regarding data privacy, data quality and anonymity, including the protection of sensitive personal data (e.g. through the process of de-identification). In some cases, companies may not be willing to share data: “due to concerns about their competitiveness and their customers’ privacy”.⁵⁸

In order to mitigate these issues two potential solutions can be applied:⁵⁹

- (a) Creation of a “data commons” where some kinds of data are shared publicly after adequate anonymization and aggregation. Data commons can empower a variety of public and private actors to innovate by developing new tools and solutions around the disclosed datasets, some of which then benefit the entire community. An example would be the London Datastore, releasing open data regarding the city of London, which powers such projects as the London School Atlas, helping citizens select suitable schools for their children relative to their place of residency.⁶⁰
- (b) Creation of an “alerting network”, where sensitive data is analysed by companies for specific signals that can alert them to potential effects to their business or to an element that is sensitive to international development policy.

Geospatial data

Geospatial data is data that is gathered in relation to a spatial attribute (longitude and latitude or an address). As such, it allows the accurate overlay of data on maps, enabling easier comparisons across regions and the display of trends and correlations that would be difficult to interpret from statistical tables alone. Geospatial data is used to analyse service provision, disaster risk reduction, and population distribution⁶¹ and has seen an explosion in the context of the adoption of technologies with GPS tracking and internet access.

⁵¹ UN Global Pulse, *Big Data for Development: Challenges and Opportunities* (2012), p. 25.

⁵² Ibid.

⁵³ Rachna Khaira, “Data Breach: Aadhaar details up for grabs for just Rs 500”, *The Wire*, 4 January 2018. Available at <https://thewire.in/210497/data-breach-aadhaar-details-grabs-just-rs-500/>

⁵⁴ UN Global Pulse, *Big Data for Development: Challenges and Opportunities*, p. 25.

⁵⁵ Ibid, p. 26.

⁵⁶ World Bank, *Big Data and Thriving Cities: Innovations in Analytics to Build Sustainable, Resilient, Equitable and Livable Urban Spaces* (World Bank, Washington, DC, 2017), p. 3.

⁵⁷ This data is for use within the international development landscape. For instance, the Global System for Mobile Applications (GSMA) launched the ‘Big Data for Social Good’ initiative which will leverage data from 16 mobile operators which collectively account for ‘over two billion connections across more than 100 countries’ to address development issues such as humanitarian crises, epidemics and natural disasters.

⁵⁸ UN Global Pulse, *Big Data for Development: A Primer* (2013), p. 6.

⁵⁹ Anoush Rima Tatevossian, “Data Philanthropy: Public & Private Sector Data Sharing for Global Resilience”, UN Global Pulse, 16 September 2011. Available at <https://www.unglobalpulse.org/blog/data-philanthropy-public-private-sector-data-sharing-global-resilience>.

⁶⁰ Available at <https://maps.london.gov.uk/schools/>.

⁶¹ Eurostat, Geographic Information System of the Commission (European Union, 2015), p. 2, Available at <http://ec.europa.eu/eurostat/documents/4031688/6917606/KS-04-14-908-EN-N.pdf>

In other forms of statistics centralised NSOs play a leading role. However, due to the decentralised nature of geospatial data collection it is likely that new and innovative partnerships will be required for public bodies to make effective use of available data. Due to the widespread offering of geospatial information tools by private companies, the expectation of the public is that geospatial data, tools and application programming interface (API) will be available openly and at no cost. Increased engagement with open data, along with free and open source software tools, by public bodies will be required in order to make use of the large amounts of crowdsourced geospatial data available.

This individual level of data is also not particularly important for data gathering, as the value of this crowdsourced “big” geospatial data lies primarily in aggregated data that displays trends and concentrations of activity. The “hard” data of individuals’ data is much less valuable than the “fuzzy” data of generally observed trends and correlations.

While this fuzzy data gathered passively is of immense value, for it to be usable it requires some type of standard categorisation and order for analysis. Due to the wide range of users of geospatial data, “open” standards are encouraged to be used, meaning standards which are publicly available, and usable by anyone without any restrictions. This data will then have the added value of being transferable across different operating systems and devices and will be universally usable in data analysis and programme development.

People-generated data

Historically, considerable amounts of data have been produced by statisticians. However, in light of the development of ICTs, more and more data are generated outside these systems on the ground in connection with the everyday lives of citizens. The process is prompted using smart devices, closed-circuit televisions (CCTVs), shopping transactions and many others. This can be observed in relation to environmental monitoring.

People-generated data can play various roles in policymaking. It has a potential to empower individuals to better manage their situations and take informed decisions, and bring new stocks of data, information and knowledge into the policy process by enabling people science (i.e. people-driven data collection and/or analysis). It also enables achieving the SDGs by creating “new spaces for people and government to engage and include citizens in public decision-making” and can

“help ensure responsive and inclusive decision-making at different levels of government”. People-generated data can play a particularly important complementary role in relation to institutional data as it “can complement and enhance official data supporting policies, programmes, and projects to achieve the SDGs, and efforts to monitor progress.” However, due to a range of barriers to using it as a primary research tool, it should not be treated as a replacement for official statistics and analyses.⁶²

⁶² Global partnership for Sustainable Development Data, “Citizen-Generated Data Task Team”, 2016. Available at <http://www.data4sdgs.org/initiatives/citizen-generated-data-task-team>.





CHAPTER 2

DEVELOPING EVIDENCE FOR SUSTAINABLE HOUSING AND URBAN DEVELOPMENT POLICIES

Having secured access to a high-quality data, there is a need to analyse it in order to develop evidence. "Evidence" is an essential part of the policy process and used to create a "case for a specific policy response" - an argument for and/or against it.⁶³

The development of evidence for sustainable housing and urban development is a complex, non-linear and iterative process. There is no one approach to the analysis of data and the development of evidence for policy. The process is bound to policy objectives, chosen methodologies and techniques of data analysis. In view of this, an efficient and effective data analysis and the development of evidence requires "ordering" the data and disregarding those of a low quality and/or irrelevant to policy. Depending on the data characteristics, the process may require disaggregation or aggregation⁶⁴ in relation to relevant categories, in order to shed a better light on the scale and extent of the housing and urban development challenges and measure the influence and impact of policy initiatives.

From these perspectives, this chapter focuses on the process of disaggregation, understood as "the breakdown of observations, usually within a common branch of a hierarchy, to a more detailed level to that at which detailed observations are taken"⁶⁵ in order to develop timely and reliable (e.g. data of a high granularity)⁶⁶ evidence. It demonstrates how the *2030 Agenda* redefined data

analysis and development of evidence in evidence-based policy process so that "no one is left behind", especially how data should be disaggregated in order for housing and urban development policies to correspond to the key values of the *2030 Agenda* and enable its implementation at all levels of governance.

Leaving no one behind

In accordance with the *2030 Agenda* and the *Geneva UN Charter on Sustainable Housing*, policymakers need to ensure that the evidence gathered accurately takes stock of urban and housing dynamics, especially the challenges facing disadvantaged groups. The process includes primarily the disaggregation of data so that "no one is left behind".

In the *2030 Agenda* data disaggregation is the second key aspect of the data revolution and is supported by SDG Target 17.18 which seeks: "to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts".⁶⁷ In this context, disaggregation of data entails a comparison of vulnerable groups to national averages and identification of the groups that are "lagging behind", which in turn allows for policy responses to be targeted towards the well-being and livelihood of vulnerable and disadvantaged groups.

Many SDG targets and indicators have disaggregated data requirements; this especially concerns the SDG 11 indicators. For instance, the indicator 11.1.1: "Proportion of urban population living in slums, informal settlements or inadequate housing", currently needs to be disaggregated per the size and location of settlements. In the future the official SDG monitoring and report will require disaggregation of indicator by location, income, race,

⁶³ New Zealand, Office of the Prime Minister's Science Advisory Committee, "The role of evidence in policy formation and implementation".

⁶⁴ In the case when the collected data represents a high level of 'granularity', there may also be a need to aggregate the data to develop evidence. However, for the purpose of the guidelines, the focus of the section is on the process of the 'disaggregation' of data.

⁶⁵ Organisation for Economic Co-operation and Development, "Glossary of Statistical Terms: Disaggregation" Glossary of Statistical Terms, 29 January 2002. Available at <https://stats.oecd.org/glossary/detail.asp?ID=4337>.

⁶⁶ Granularity refers to the level of detail found within any dataset, with high granularity associated with finer detail. In essence, high granularity levels for any data means that there is also high disaggregation present within that data.

⁶⁷ United Nations, "Sustainable Development Goal 17", Sustainable Development Goals Knowledge Platform. Available at <https://sustainabledevelopment.un.org/sdg17>

ethnicity, religion, migratory status, and disability. This disaggregation will serve to highlight disparities between national or city-wide averages, and disadvantaged groups, leading to increased capacity to target programmes to ensure equitable development.⁶⁸ This is also true of the SDG indicator 11.2.1: “Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities”. In the future disaggregation of the indicator as per location, income, race, ethnicity, and migratory status will be required.⁶⁹

It is the role of policy makers at all levels of governance to develop and use the statistical tools and standards necessary to carry out the disaggregation of data effectively and efficiently. The requirements of disaggregation are produced by the United Nations Statistics Division (UNSD) and are outlined at <https://unstats.un.org/sdgs/iaeg-sdgs/disaggregation/>.

Policy makers are encouraged to use international standards for data disaggregation, such as the *Overview of standards for data disaggregation* available at <https://unstats.un.org/sdgs/files/Overview%20of%20Standards%20for%20Data%20Disaggregation.pdf>.

The section below outlines the rationale and the value of disaggregating data in categories such as gender, age, income, disability, migratory status and location.

Gender

One of the key issues of the *2030 Agenda* is ensuring sustainable and inclusive urbanization that accounts for the issues of gender and gender dynamics. This, in turn, demands a good understanding of how urban development dynamics relate to gender.

The SDG 5: “Achieve gender equality and empower all women and girls” specifically addresses gender equality. All other SDGs also possess a gender dimension, for instance, the indicators of SDG 11 call for equitable access to adequate housing, transportation and safe open spaces for all. Highlighting gender-based access to these key urban amenities means that for policy to be effective it must be informed by a data-based analysis of what barriers exist to women enjoying these basic rights.

⁶⁸ United Nations, *The Sustainable Development Goals Report: 2017* (United Nations, New York, 2017), p. 14.

⁶⁹ United Nations, “Compilation on Data Disaggregation Dimensions and Categories for Global SDG Indicators”, 2019. Available at: <https://unstats.un.org/sdgs/iaeg-sdgs/disaggregation/>.

In many countries women’s access to land and housing is dictated by relationships to men.⁷⁰ This lack of formal recognition of women’s rights to land can lead to increased tenure insecurity, frequency of forced eviction, and reliance on the informal sector for housing. Even in countries where women have well-established legal land rights and housing independent to relationships to men, they still face challenges in social acceptance of their rights.

In some countries of the UNECE region, there is a large gender data gap. Issues such as time use, poverty and domestic violence, tending to affect women more than men, are not well measured in official statistics. Data gathering failures also occur in household surveys which “currently capture 75 per cent of men’s economic activities but no more than 30 per cent of women’s activities”.⁷¹ This results from the fact that “only 13 per cent of countries have a dedicated budget for collecting and analysing gender statistics”.⁷²

Inclusion of gender-specific statistics in data collection at country-level and in budgeting practices has begun with the project “Evidence and Data for Gender Equality” comprising five pilot projects including one in Georgia.⁷³

Age

In view of youth unemployment and the ageing population which is reaching the retirement age and is economically inactive, there is an increasing need to measure the welfare of different age groups and how different age groups are affected by housing and urban development processes.

Disaggregation of entire populations by age sheds light on how urban growth and access to quality, affordable housing affects different age groups, and facilitates comparative analysis. The *UNECE Recommendations on*

⁷⁰ UN-Habitat, *Gender equality for smarter cities: challenges and progress* (United Nations Human Settlements Programme, Nairobi, 2010), p. 4.

⁷¹ Bill and Melinda Gates Foundation. “Closing the Gender Data Gap: How Efforts to Collect Data about Women and Girls Drive Global Economic and Social Progress”, New York Times, 2018. Available at <https://paidpost.nytimes.com/gates-foundation/closing-the-gender-data-gap.html>

⁷² Data 2x, “Gender Data and the Sustainable Development Goals: Political Action Toward 2030”, 2017. Available at http://www.data2x.org/wp-content/uploads/2017/07/GenderDataSDGs_PoliticalAction2030.pdf

⁷³ United Nations, United Nations Statistics Division, “Overview”, Evidence and Data for Gender Equality, 2020. Available at <https://unstats.un.org/edge/pilot/overview/>.

Ageing-related Statistics suggest that the older population be defined as those aged 55 and over, this definition being based on typical needs for extra care from younger generations. This produces a wide variety of ages which require different policy responses. For example, those aged 55-60 have different needs than those 75 and over. The Guidelines therefore recommend that age-related statistics be disaggregated in five-year increments for those over 55.⁷⁴ However, those younger than this may still face age-related discrimination, as in the case of Georgia where those in their late forties face difficulties finding employment due to concerns about their age affecting their performance.⁷⁵

This is especially relevant in transition economies, since young people in these countries find themselves caught in the transition from a State that was duty-bound to provide housing for all, and a market economy with a private construction sector lacking the capacity to provide adequate housing for all. This emerging generational housing gap requires targeted responses based on evidence of housing conditions and opportunities of young people.⁷⁶

The different challenges faced by elderly and young people highlight the flaws of using national averages as basis for policy making. Different groups require targeted responses based on specific problems, which can be highlighted by using disaggregated data, which is notably a requirement for official SDG monitoring process in relation to SDGs 1, 3, 5, 8, and 16.⁷⁷

Income

Evidence-based policymaking on sustainable housing and urban development benefits also from disaggregation of income data. Differentials of income can be measured using the Gini coefficient at the country level and using

the GDP per capita at international level (e.g. GDP per capita country level comparisons).

Improving data for measuring income may be particularly appropriate as many social development policies are means-tested, with qualification occurring based on a certain threshold. Obtaining data disaggregated by income may also allow statisticians to understand patterns in individual behaviour that occur as a result of income differences. Often countries use the headcount ratio, which measures the percentage of the population living below the poverty line, as a measurement tool to target anti-poverty policies better.⁷⁸

For example, it is estimated that in Kyrgyzstan 70 per cent of the labour force is employed informally, making it harder to accurately record household income. This also means that census survey data relies on people accurately reporting their incomes.⁷⁹

Finally, income is important for understanding behavioural patterns of low-income individuals. Poverty cannot be understood as solely referring to individuals with low incomes, but it is true that having a low income would change one's behaviour especially in a developing country. For instance, low-income individuals in poor countries tend to adopt risk mitigation behaviours by diversifying income-generating activities, with many families adopting strategies such as temporary migration; holding multiple plots in different villages; or being conservative in the running of farms or businesses.⁸⁰ Measuring income and further data analysis to identify behavioural patterns among low-income individuals is key in generating evidence-informed anti-poverty measures.

The official SDG monitoring process requires that policymakers collect data disaggregated per income in relation to SDG targets 1.3.1, 1.4.1, 3.1.1, and 10.1.1.⁸¹

⁷⁴ United Nations Economic Commission for Europe, *Recommendations on Ageing-related Statistics* (United Nations, New York and Geneva, Sales No.: E.16.II.E.22, 2016).

⁷⁵ United Nations Economic Commission for Europe. *Road map for Mainstreaming Ageing: Georgia* (United Nations, New York and Geneva, 2015).

⁷⁶ UN-Habitat. *Land, Tenure and Housing Issues for Conflict-Displaced Populations in Georgia: Analysis and Proposals for Post-Conflict Recovery* (United Nations Human Settlements Programme, Nairobi, 2008), p. 44.

⁷⁷ United Nations, United Nations Statistics Division, "Data Disaggregation and SDG Indicators: Policy Priorities and Current and Future Disaggregation Plans", 2020. Available at <https://unstats.un.org/unsd/statcom/50th-session/documents>.

⁷⁸ The poverty line is defined at the country-level according to a minimum level of income deemed adequate with measurement criteria varying depending on the country. For instance, the World Bank defines the poverty line at \$1.90 in PPP-adjustable terms.

⁷⁹ People might not accurately report their income due to the inexistence of any accounting/ bookkeeping mechanisms and important variation in income levels on a monthly basis.

⁸⁰ Abhijit Banerjee and Esther Duflo, *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty* (PublicAffairs, 2011), p. 141-142.

⁸¹ United Nations, United Nations Statistics Division, "Data Disaggregation and SDG Indicators: Policy Priorities and Current and Future Disaggregation Plans".

Disability

Analysis of data in terms of disability status is essential at all levels of governance to develop policies that improve access to affordable, decent housing and inclusive human settlements and to fulfil obligations stemming from the realization of the *2030 Agenda* in the UNECE region.

The disaggregation of data per disability status and obtaining accurate disability data is a difficult task. Given the stigma associated with disability, persons with disabilities often underreport their condition in household surveys and census exercises.

According to the World Health Organization, approximately 15 per cent of the world's population has some type of disability, understood as any impairment, activity limitation or participation restriction that may plague an individual.⁸² Most of these individuals reside in the developing world and are at greater risk of experiencing adverse socioeconomic outcomes such as: "less education, poorer health outcomes, lower levels of employment, and higher poverty rates."⁸³

In order to address this, the UN DESA Population and Housing Census guidelines recommend including questions with the following four categories to determine disability status: (i) walking, (ii) seeing, (iii) hearing, and (iv) cognition.⁸⁴ Other data tools include the joint World Health Organization-World Bank model disability survey, which is a general population survey that is sensitive to the needs of persons with disabilities.

Alternatively, the Washington Group set of questions can be used to better identify and target individuals with disabilities. A number of countries have already incorporated the set of questions, including Albania in its 2011 Census. The Washington Group on Disability Statistics is a United Nations city group that seeks to "address the urgent need for cross-nationally comparable population-based measures of disability."⁸⁵ They have developed both short and long sets of questions that measure disability

from a sampled population. For instance, the 2011 India Census reported 2.21 per cent of the population as possessing disabilities, whereas the prevalence rate was 16.7 per cent when using the Washington Group Short Set of Questions on a sample of 24,518 patients.⁸⁶

Collecting data on disability enhances the possibility of conducting international comparisons, allowing progress on frameworks such as the *Convention of the Rights of Persons with Disabilities* to be monitored and allowing disability friendly policies in urban development once the needs of persons with disabilities have been identified.

The monitoring of SDGs requires governments to produce data disaggregated per disability status in relation to SDG 1: "End poverty in all its forms everywhere" (target 1.3.1) and SDG 8: "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" (target 8.5.2).⁸⁷

Migratory status

Analysis of data as per migratory status becomes even more important for planning for sustainable development that leaves no one behind, especially with the recent migration crisis.

Migrants⁸⁸ often face challenges in "attaining equality of opportunity" in host countries or cities. Barriers such as language, cultural attitudes, and weak social ties mean that many migrants are far behind national averages in terms of well-being. This is also recognised at the normative level; the *New Urban Agenda* commits to "ensure the full respect for human rights and humane treatment of refugees, internally displaced persons, and migrants, regardless of migration status."⁸⁹ Many of the SDGs directly address various aspects of the topic of migration including targets

in-september-2015-world-leaders-adopted-the-global-goals-which-frame-development-for-the-next-c7556b87e2e0.

⁸⁶ Sightsavers. "Our experience of Using Disability Disaggregated Data", (2015).

⁸⁷ United Nations, United Nations Statistics Division, "Data Disaggregation and SDG Indicators: Policy Priorities and Current and Future Disaggregation Plans".

⁸⁸ According to the International Organization for Migration a migrant can be defined as a person: "who is moving or has moved across an international border or within a State away from his/her habitual place of residence, regardless of (1) the person's legal status; (2) whether the movement is voluntary or involuntary; (3) what the causes for the movement are; or (4) what the length of the stay is". International Organization for Migration, "Who is a migrant?", 2019. Available at <https://www.iom.int/who-is-a-migrant>.

⁸⁹ United Nations. *New Urban Agenda* (United Nations, 2017). Paragraph 28.

⁸² World Health Organization, "Disability and health", 2018. Available at <https://www.who.int/news-room/fact-sheets/detail/disability-and-health>.

⁸³ World Bank, "Disability Inclusion Overview", 2019. Available at <http://www.worldbank.org/en/topic/disability>.

⁸⁴ United Nations Department of Economic and Social Affairs. *Principles and Recommendations for Population and Housing Censuses*. These categories are also useful in that they allow international comparisons to be conducted.

⁸⁵ More information can be found at <http://www.washingtongroup-disability.com/>; and Sightsavers International Share Learning, "Our experience of using disability disaggregated data", Medium, 2015. Available at https://medium.com/@DFID_Inclusive/

5.2, 8.7, 8.8, 10.7, and 16.2.⁹⁰ Monitoring of SDGs requires the disaggregation of data per migratory status for targets 4.1.1, 4.6.1, and 8.8.1.⁹¹

Obtaining data on migration is key to addressing issues of urban development since access to adequate and affordable housing is often more difficult for migrants. This may be explained by both formal barriers (e.g. of a legal nature) and informal barriers (e.g. discrimination). Migrants, and refugees, as well as internally displaced persons (IDPs), face particular challenges when integrating in their new urban settings and are often forced to live in informal settlements.

In addition, the UN DESA *Principles and Recommendations for Population and Housing Censuses* recommends inclusion of the following three characteristics to facilitate the recognition of international migrants in national censuses:⁹²

- (a) Country of birth;
- (b) Country of citizenship;
- (c) Year or period of arrival.

Adoption of the criteria above should facilitate obtaining data regarding migration. However, criteria (c) was only included by 50.3 per cent of countries during the 2010 household census round. Finally, encouraging additional tabulation and dissemination of international migration data as recommended in the report of the Secretary-General on International Migration and Development will enhance the exchange of statistical information between countries, facilitate the identification of factors contributing to human vulnerability and will help to inform public policies that will “endeavour to reach the furthest behind first.”⁹³

Geographical location

Better implementation of the *2030 Agenda* and the *New Urban Agenda* will require policymakers to take stock of the urban processes and if necessary, review their approach to the collection of local data – a type of data

that has a particular spatial attribute – that is within the administrative boundaries of a city.

Monitoring of SDGs requires governments to produce data disaggregated per geographical location. This requirement currently applies not only to SDG 11 target 11.1: “Ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums”, but also to other targets of SDG 11 and SDGs 1, 2, 4, 5, 6, 7, 9, 10, 13, 15, 16, and 17.⁹⁴

Measuring at the city scale can, however, pose challenges, as outlined in box 5. For instance, it requires defining the administrative boundaries and functional areas of cities, as well as recognising that some cities have functional areas wider than the administrative boundaries defined by Governments. Functional areas of cities can be defined based on transportation infrastructure, commuting patterns, and ensuring urban plans are not limited to administrative boundaries but also consider “soft” boundaries where the influence of cities reach those beyond official borders.⁹⁵

Box 5 Measuring at the city scale

Collection and analysis of data for sustainable housing and urban policies and in line with SDG 11 requires defining the meaning and the scope of various spatial entities that encompass the notion of a city. A range of scales can be defined:

- (a) City proper: a single political jurisdiction containing the historic city centre;
- (b) Metropolitan area: the set of formal local government areas which comprise the urban area and its primary commuter areas;
- (c) Urban agglomeration: the built up or densely populated area containing the city proper, suburbs, and continuously settled commuter areas;
- (d) Human settlements: the distinct population cluster in which the inhabitants live in neighbourhood sets of living quarters.⁹⁶

⁹⁰ These three sets of targets address respectively the issue of labour rights for migrants, the process of migration and the issue of human trafficking.

⁹¹ United Nations, United Nations Statistics Division, “Data Disaggregation and SDG Indicators: Policy Priorities and Current and Future Disaggregation Plans”.

⁹² UN DESA, *Principles and Recommendations for Population and Housing Censuses*, p. 108.

⁹³ United Nations. *Transforming Our World: The 2030 Agenda for Sustainable Development* (United Nations, 2015).

⁹⁴ United Nations, United Nations Statistics Division, “Data Disaggregation and SDG Indicators: Policy Priorities and Current and Future Disaggregation Plans”.

⁹⁵ Andreas Faludi, “Territorial cohesion, territorialism, territoriality and soft planning: A critical review” *Environment and Planning*, vol. 45, (2013), p.1309.

⁹⁶ United Nations. UN-Habitat, “A guide to assist national and local governments to monitor and report on SDG Goals 11+ indicators” p. 11. Available at <http://localizingthesdgs.org/library/60/SDG-Goal-11-Monitoring-Framework-A-guide-to-assist-national-and-local-governments-to-monitor-and-report-on-SDG-goal-11-indicators.pdf>.

As importantly, policymakers should recognise that the analysis of data with regard to ethnicity is also of crucial importance for developing evidence-based policies.

Data analysis methodologies and methods

There are multiple methodologies, techniques, methods and tools that allow effective and efficient analysis of data in evidence-based policy cycles. Of a particular value to understanding housing, and urban development dynamics and ways of addressing them are the methodologies that allow: (i) an analysis and appraisal of the past urban dynamics based on the best available historical data series, (ii) the mapping of the housing and urban dynamics, and (iii) the modelling and prediction of future urban development dynamics.

Policymakers should note the strengths of international frameworks and methods that support the analysis of data and the development of evidence in an evidence-based policy cycle, such as the Strategic Environmental Assessment (SEA), Land Use-based Integrated Sustainability Assessment (LUISA), and others.

SEA97 is a forward-looking approach to evidence-based policymaking. Its objective is to promote sound economic development choices that benefit human health and the environment alike, as well as the integration of green economy targets into strategic and project-related decision-making. Introduced early in decision-making processes, SEA ensures consideration is given to the likely significant environmental effects (including health) of projects, plans and programmes. It entails collecting data on characteristics of the environment, and the potential local and transboundary environmental effects of the project. Based on this evidence, measures to prevent or mitigate adverse environmental effects are then proposed. Decision-making on projects involving a SEA is, therefore, drawn from evidence produced through logical, systematic processes. Guidelines on SEA can be found at: <https://www.unece.org/index.php?id=42853&L=0>.

⁹⁷ United Nations, United Nations Economic Commission for Europe, "Protocol on Strategic Environmental Assessment to the Convention of Environment Impact Assessment in a Transboundary Context". Available at <https://www.unece.org/fileadmin/DAM/env/eia/documents/legaltexts/protocolenglish.pdf>.

LUISA is a territorial modelling platform that allows assessing policies with regard to their direct or indirect territorial impact.⁹⁸ LUISA stems from the concern over the effect of urbanization on the quality of life.⁹⁹ LUISA allows understanding "dynamic land functions" (relationships between land and population, services and activities) one of which being, for instance, provision of housing. LUISA promotes scenario-based approaches to data collection and analysis. The model was used to assess how European cities could potentially evolve over the time period 2010-2050.¹⁰⁰

Improving data analysis

Data and information literacy are important factors that influence the development of evidence for policy.

"Information literacy" can be defined as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information."¹⁰¹ Improving information literacy requires investing in human and material resources. Those that can effectively and efficiently make sense of data that is often complex, and information and/or knowledge claims, especially to accurately and effectively interpret information gathered by NSOs, are the qualified analysts knowledgeable about policy process and social science, economic science and environmental research methods, and those proficient in quantitative and qualitative data collection and management (statistician, econometrists).

Information literate people can:

- (a) Determine the extent of information needed;
- (b) Access the needed information effectively and efficiently;
- (c) Evaluate information and its sources critically;
- (d) Incorporate selected information into one's knowledge base;

⁹⁸ Kompil Mert and others, "European cities: territorial analysis of characteristics and trends - An application of the LUISA Modelling Platform" (Publications Office of the European Union, 2015).

⁹⁹ Ibid.

¹⁰⁰ This was subject of an exercised carried out by the JRC: Kompil Mert and others, 'European cities: territorial analysis of characteristics and trends - An application of the LUISA Modelling Platform'.

¹⁰¹ American Library Association, "Information Literacy Competency Standards for Higher Education", 2020. Available at <http://www.ala.org/Template.cfm?Section=Home&template=/ContentManagement/ContentDisplay.cfm&ContentID=33553>.

- (e) Use information effectively to accomplish a specific purpose;
- (f) Understand the economic, legal and social issues surrounding the use of information, and access and use information ethically and legally.

Improving information literacy also relies on embracing challenges and opportunities brought about by the digitalization of practices and processes in the public and private sectors, as outlined in chapter three. Decision makers and analysts in the UNECE countries can still improve their local data collection processes, aiming to integrate them with those conducted at the national level. In Georgia, for instance, 15 out of 27 local government units continue using basic spreadsheet software (available commercially, at a fee) for data storage and analysis. This suggests that alternative and more professional software could be used in the future.



CHAPTER 3

INFORMING HOUSING AND URBAN DEVELOPMENT POLICY AND DECISION-MAKING

Previous chapters of the document focused on the production of data and the development of evidence for policies on sustainable housing and urban development. This final chapter focuses on decision-making that ensures the gathered data and evidence is used to effectively inform policy and that it contributes to a more effective and timely delivery of the *2030 Agenda* in countries and cities of the UNECE region.

Decision-making in evidence-based policy cycles spreads across various stages of the process, from data collection and analysis to the definition of policy objectives and targets. Decisions taken in one stage of policy cycle affect other stages. For instance, decisions about data collection are usually taken at the early stages of policy development, yet they influence the scope and character of the evidence produced and ultimately define the character and scope of policy interventions.

Development of evidence-based policies is a complex social and political process, based on a mix of value judgements, cultural assumptions, and scientific evidence. It reflects political, organizational, social values and realities on the ground, and personal and other biases.¹⁰² In this context, policymakers can use various approaches to improve objectivity of decision-making and to ensure the alignment with SDGs and the *2030 Agenda*.

From these points of view, the chapter highlights opportunities for the use of the global and regional development agendas and monitoring frameworks as reference points in evidence-based policymaking. It concerns especially the global and regional agendas for cities, for instance the *United for Smart Sustainable Cities* (U4SSC) and the *City Prosperity Initiative* (CPI), which promote a rigorous approach to the production/collection of data in evidence-based policy process and propose a sound and clear methodological pathway to achieve it.

¹⁰² This can be referred to as “evidence-informed policy”. For information see Greg Marston, “Tampering with the evidence: a critical appraisal of evidence-based policy-making” *The Drawing Board: an Australian Review of Public Affairs*, vol 3, No. 3. (2003), p. 143-163.

It further emphasizes that the *2030 Agenda* calls for a timely response to the challenges of urban development and that policymakers have various tools at hand to ensure a timely production of data, evidence and decision-making (such as an “ex ante” evaluation of policies, programs and projects). Last but as important, the chapter reiterates that policymakers should embrace the “universality” of housing and urban development in relation to the collection of data and evidence and engage better in a collaboration with other policymakers and data producers.

It recognises that international policy transfer dynamics and benchmarking practices strongly influence decision-making in a contemporary, globalized world, yet pose both the challenges and opportunities for successful urban policies and practices.

Using the global and regional set of indicators

The development of the global (and regional)¹⁰³ monitoring frameworks and indicator sets for countries and cities, following the adoption of the *2030 Agenda*, has proven useful in supporting not only national SDG monitoring processes, but also other activities on housing and urban development, insofar as it equipped policymakers with a selection of indicators that can be used for the development, review and implementation of sustainable housing and urban development policies.

All indicators of the SDG frameworks are ready to be used for evidence-based policymaking at a national level (and local level, where indicated). This concerns both the SDG 11, especially the indicator corresponding to target 11.1.1: “Proportion of urban population living in slums, informal settlements or inadequate housing”, and a range of other indicators in the SDG framework: especially indicators corresponding to the issues of homelessness

¹⁰³ This concerns for instance a range of EU monitoring frameworks and indicator sets that focus on SDGs and policy areas that have a particularly strong relationship with housing (see annex 5).

(SDG 11.1), building standards and energy efficiency (SDG 7.1.1/2), land management (SDG 11.3.1), participatory urban governance (SDG 11.3), health (SDG 3.9.1) and knowledge production (SDG 17.19). The overview of housing-related indicators in the SDG indicator set can be found in annex 2.

In light of growing social exclusion, homelessness and soaring rental housing costs in urban areas, policymakers need to develop and use housing affordability indicators. "Housing affordability" is often depicted as a ratio of the "cost" of the house to households' "income"¹⁰⁴ (see annex 4). However, this way of defining and measuring housing affordability only partially reflects the nature of the problems in countries and cities in the UNECE region. It may not take into account the costs of housing-related charges (the costs relating to the quality of the housing, such as energy efficiency of a building) or the location of a particular dwelling (the costs of commuting can increase the total cost of housing). It also does not reflect on the "local" nature of housing market and emerging disparities between national and local averages relating to this.

In this context, the policymakers should ensure that the indicator is used in a disaggregated manner (at a neighbourhood/quarter scale) as it is commonly known that some quarters in a city are more expensive than others, and per gender as there is evidence that women and children are at greater risk of housing exclusion. In line with the *Geneva UN Charter on Sustainable Housing*, it is also essential to develop measures that define the "affordability" and "sustainability" of housing.

As housing is one of the key factors that determine quality of life, policymakers should also develop and use indicators that connect housing with quality of life, such as a "space in the dwelling", the overcrowding¹⁰⁵ rate, "housing

deprivation rate" and "satisfaction with accommodation."¹⁰⁶ More information about selected indicators for housing and urban development policies can be found in annex 3.

Lastly, in order to develop evidence-based policies on sustainable housing and urban development at the local level, policymakers should use the indicators included in the global and regional agendas for cities: the U4SSC and the CPI. The monitoring frameworks and indicators are based on the premises of the *2030 Agenda* and the *New Urban Agenda* and support their implementation. Moreover, they promote a rigorous approach to the production/collection of data and evidence and propose a sound and clear methodological pathway to achieve it.

Key Performance Indicators for Smart Sustainable Cities

The Key Performance Indicators for Smart and Sustainable Cities (KPI4SSC) is a public, free of charge, standard developed by UNECE and International Telecommunication Union (ITU) in 2015 and was included in the U4SSC framework.

The U4SSC is a United Nations initiative coordinated by ITU, UNECE and UN-Habitat and supported by fourteen other UN agencies¹⁰⁷ to achieve SDG 11.

The KPI4SSC provides cities with a consistent and standardised method for collecting data and measure performance and progress towards:

- (a) Achieving the SDGs and implementing the *2030 Agenda*;
- (b) Becoming a smarter city;
- (c) Becoming a more sustainable city.¹⁰⁸

¹⁰⁶ Eurostat. *Final Report of the Expert Group on Quality of Life Indicators: 2017 edition* (European Union, Luxembourg, 2017).

¹⁰⁷ CBD (Convention on Biological Diversity), ECLAC (Economic Commission for Latin America and the Caribbean), FAO (Food and Agriculture Organization), UNDP (United Nations Development Programme), UNECA (United Nations Economic Commission for Africa), UNESCO (United Nations Educational Scientific and Cultural Organization), UNEP Environment (United Nations Environment Programme), UNEP-FI (United Nations Environment Programme Finance Initiative), UNFCCC (United Nations Framework Convention on Climate Change), UNIDO (United Nations Industrial Development Organization), UNU-EGOV (United Nations University Operating Unit on Policy-Driven Electronic Governance), UN-Women and WMO (World Meteorological Organization).

¹⁰⁸ Within the KPI framework, a smart sustainable city is defined as "an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of

¹⁰⁴ For instance, Eurostat measures the "Housing cost overburden rate" as a 'percentage of the population living in a household where total housing costs (net of housing allowances) represent more than 40 per cent of the total disposable household income (net of housing allowances)' in relation to the European Union Member States. Eurostat, "Housing Cost Overburden Rate", Products Datasets. Available at <https://ec.europa.eu/eurostat/web/products-datasets/product?code=tespm140>.

¹⁰⁵ Eurostat emphasizes the importance of collecting data on material aspects of housing - overcrowding - the overcrowding indicator portrays (i) physical health related issues, in line with the WHO, assuming that space is a basic requirement for preventing health issues; (ii) broader well-being issues as, the lack of privacy is considered a source of stress and (iii) matters relating to space use as under occupation of dwelling is not considered as efficient and environmentally friendly use of space. Data to inform the Quality of life survey indicators is Data gathered within the EU-SILC.

They can also be used as a backbone for the development of the Voluntary Local Reviews.

The KPI4SSC includes 91 indicators at the interface of the three dimensions of sustainability (economy, environment, and society and culture) and Information and Communication Technology. The indicators have been tested and implemented globally, in over 150 cities all over in the world.¹⁰⁹

In the context of KPI4SSC, policymakers are encouraged to use the “Housing Expenditure” and “Informal Settlements” indicators to develop, review and implement local policies and to improve decision-making in relation to sustainable housing and urban development. In order to comprehensively understand, capture and address housing issues, the use of these indicators should be supported by the use of the key performance indicators (KPIs) for smart sustainable cities (SSC) that shed light on the material characteristics of housing and the housing infrastructure, such as:

- (a) Household sanitation;
- (b) Basic water supply;
- (c) Potable water supply;
- (d) Access to electricity;
- (e) Public building sustainability;
- (f) Integrated building management systems in public buildings;
- (g) Household access to ICT;
- (h) Residential thermal energy consumption;
- (i) Public buildings energy consumption.

Selected KPIs for SSC can be found in annex 4 and the full list of indicators in *Collection Methodology for Key Performance Indicators for Smart Sustainable Cities* are available at <https://www.unece.org/>

present and future generations with respect to economic, social and environmental as well as cultural aspects”. United Nations Economic Commission for Europe, “Sustainable Smart Cities”. Available at <https://www.unece.org/housing-and-land-management/areas-of-work/housingurbandevlopment/sustainable-smart-cities.html>.

¹⁰⁹ It includes Voznesensk (Ukraine), Goris (Armenia), Pully (Switzerland), Dubai (United Arab Emirates), Singapore (Singapore), Shanghai (China), Buenos Aires (Argentina), Moscow (Russia) and many others. In the period 2019 to 2023, UNECE foresees that the Key Performance Indicators for Smart Sustainable Cities will be further applied to evaluate the smartness and sustainability of 17 Norwegian cities, Grodno (Belarus), Bishkek (Kyrgyzstan), Tbilisi (Georgia), Tirana (Albania), Podgorica (Montenegro), Almaty and Nursultan (Kazakhstan) and others.

<fileadmin/DAM/hlm/documents/Publications/U4SSC-CollectionMethodologyforKPIfoSSC-2017.pdf>.

More information about the U4SSC framework and its tools, including guidelines, can be found at <https://www.unece.org/housing-and-land-management/unit-ed-4-smart-sustainable-cities-u4ssc.html>

City Prosperity Indicators

The City Prosperity indicator framework is part of the CPI and was developed by UN-Habitat.¹¹⁰ The indicators have been used to monitor urban development in more than 400 cities across the world, including the evaluation in the ways in which housing initiatives (policies or programmes) influence the prosperity of cities and ensure policy objectives at the local level are aligned with SDGs. For instance, in the case of Mexico City, CPI “was used as a strategy to evaluate how the housing sector can impact on urban prosperity and contribute to design more integrated housing policies.”¹¹¹

The CPI allows the monitoring of SDGs at the city-level and it is based on a sound statistical approach that integrates and measures all indicators of SDG 11 and a selected number of other SDG indicators.

The CPI measures 72 indicators grouped in six prosperity dimensions:

- (a) Productivity;
- (b) Infrastructure development;
- (c) Quality of life;
- (d) Equity and social inclusion;
- (e) Environmental sustainability;
- (f) Urban governance and legislation.

Access to adequate housing, water and sanitation are included in many of the human rights treaties and are the integral parts of the CPI indicators and other metrics that include the “Housing Infrastructure sub-index” with six housing indicators: (i) Improved Shelter, (ii) Access to Improved Water, (iii) Access to Improved Sanitation, (iv) Access to Electricity, (v) Sufficient Living Area, and (vi) Population Density.

More information on how to use the CPI for crafting evidence-based policies and decision-making at a local level can be found at <http://cpi.unhabitat.org/>

¹¹⁰ City Prosperity Initiative, “About Us”, 2017. Available at <http://www.perceptionindex.org/Public/About>.

¹¹¹ UN-Habitat, *2015 Global City Report* (United Nations, 2015).

Focusing on the past and the future

As the *2030 Agenda* calls for a timely response to the challenges of contemporary urban development, one of the key aspects of decision-making for sustainable housing and urban development is the selection of approaches to the evaluation of policy interventions.

One of the most commonly used approaches to the evaluation of policy intervention at all levels of governance is an “ex post evaluation”. Ex post evaluation of policies, programs and projects is an inherent part of evidence-based policy cycle and is used for the review of the policies, programmes and projects, after they have been implemented¹¹². It relies on assessing the actual effects of policy interventions and whether the intervention was needed and/or proportional.

However, the ex post evaluation often provides only a partial image of the effects of policy interventions. The ex post approaches often focus on the short-term and immediate effects of policies, programmes and projects, for instance the number of housing units built as a result of a housing policy intervention. Data and evidence emerging from the evaluation often does not provide a comprehensive view of changes that emerged as a result of the implementation of a policy/programme and may not capture emerging new trends and others. At all times, policymakers also need to ensure that the evidence of one policy cycle that emerged from ex post evaluation is also used in the following policy cycle.

In this regard, policymakers should also make use of approaches to policy evaluation, including relevant methodologies, which allow the assessment of medium and long-term impacts/effects of policies and programmes. They should also ensure that the information is used as a basis for the review and development of policies, as often data and evidence emerging as a result of ex post evaluation is not fed back into policy cycles. Policymakers at all levels should complement an ex post evaluation with an “ex ante evaluation” of approaches, methodologies and methods.

¹¹² For instance, pilot projects can be evaluated using e.g. the Randomized Control Trials. See: Brett Theodos and others, “Randomized Control Trials and Financial Capability: Why, When and How”, Metropolitan Housing and Communities Policy Center Brief, Urban Institute, June 2014.

Ex ante evaluation allows the drawing of lessons from the past to forecast the future and is essential for a timely response to housing and urban development challenges in countries and cities. It entails the use of data, information and evidence about past events (processes and practices) to build up information about the future and can be executed using foresight¹¹³ tools, methodologies and frameworks that enable horizon scanning, visioning, scenario building, system analysis and others.

Foresight uses qualitative logic to overcome “tunnel thinking” in the production, collection, management and use of data in evidence-based policy processes. It brings about multiple perspectives and a diversity of knowledge into policymaking, using lessons from the past and an understanding of the present to make sense of the future, particularly useful from the point of view of minimizing risks today and charting a course towards the future in a volatile, uncertain, complex and often ambiguous world. The strategy enriches a strategic understanding of policy problems and relevant policy responses by drawing possible consequences of current trends and has been used by policymakers in France, Ireland and the United Kingdom.¹¹⁴

Another type of ex ante evaluation is a regulatory impact assessment (RIA). RIA is used in advance to decision-making about the scope and character of policy objectives, to understand the potential impact of policy interventions, including economic cost-benefit analysis and long-term impacts across various areas of sustainability: society, economy and environment. RIA can be applied at any level of governance and allows understanding of whether there is a need for a particular policy action and if so, the way to carry out policy interventions in the most efficient and effective way.¹¹⁵ Regulatory impact assessment measures are promoted

¹¹³ The objective of foresight is to build on inclusive and systematic participatory processes to create collective intelligence about the medium-to-long-term future, in order to build plausible rationales of possible alternative future developments.

¹¹⁴ United Nations, United Nations Interagency Task Team on Science, Technology and Innovation for the SDGs, “Science, Technology and Innovation for SDGs Roadmaps”, paper for the Forum for Science, Technology and Innovation, New York, June 2018. Available at https://sustainabledevelopment.un.org/content/documents/19009STI_Roadmap_Background_Paper_pre_STI_Forum_Final_Draft.pdf.

¹¹⁵ European Commission, “Impact Assessments”. Available at https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/impact-assessments_en.

at the international level and by the EU and OECD and have been applied by the United Kingdom to assess housing policy proposals.¹¹⁶

Bottom lines in evidence-based policymaking

The last section of the Guidelines focuses on the universality of housing and urban development as policy domains and the collaborative nature of evidence-based policymaking in contemporary democracies. It stresses that informing sustainable housing and urban development policies at all levels of governance and decision-making for housing and urban development activities requires taking a holistic view on housing and urban development challenges and the ways of addressing them, also in relation to data collection and the development of evidence. Furthermore, it points out that the lack of decent quality, affordable housing, as well as the social, economic and spatial polarisation of urban development are collective issues and they require the mobilisation of various groups of stakeholders, at local, national and international levels of governance.

The chapter concludes with the observation that evidence-based policymaking for sustainable housing and urban development takes place in an increasingly globalized context, one in which policy transfer dynamics strongly affect decision-making. Sourcing solutions to housing and urban development from “elsewhere” poses both challenges and opportunities for policymakers. Lastly, the chapter emphasizes that the successful implementation of the *2030 Agenda* in the UNECE region requires the harmonisation of policy objectives and relevant implementation mechanisms at all levels of governance.

Embracing the universal character of housing

Housing and urban development are “universal” policy domains that are relevant to all dimensions of sustainable development. This, in turn, requires that policymakers

at all levels of governance take a holistic approach to decision-making in relation to activities on housing and urban development, including the collection and analysis of data and the definition of policy objectives and targets.

It is the role of policymakers to ensure that the data gathered is comprehensive and sheds light on social, economic, environmental and governance-related dimensions of housing and urban development challenges, including the characteristics of population, housing market dynamics, types of housing providers, types of tenure, energy-efficiency of buildings, spatial planning regulations and many others. An overview of the types of data for development, review and implementation of sustainable housing and urban policies can be found in annex 8. Additionally, given that numerical data can only partially depict the nature of housing problems, such as with regard to residential satisfaction, it is essential that policymakers better recognise the contribution of both quantitative and qualitative data to understanding and addressing housing and urban development problems (see annex 9).

Policymakers should also use integrated assessment methodologies, models and tools (outlined in the previous chapter) as they have a particularly comprehensive character and facilitate defining and evaluating “the relationships between environmental, social and economic processes in order to optimise socio-economic outcomes within the context of resource and environmental constraints.”¹¹⁷

Lastly, they should identify “synergy effects” of housing policies, where the realization of housing policy objective supports or constrains the realization of policy objectives in other policy areas. In particular they should account for the potential adverse effects of inadequate housing in relation to environmental pollution, energy efficiency, health and others, especially in relation to the assessment of policy impacts; and both the positive effects (“externalities”) of housing policies such as the reduction of drug use, crime and vandalism, and the negative effects such as loss of green space, greater congestion, and environmental pollution.¹¹⁸

¹¹⁶ In the form of the “Impact Assessment for Affordable Bill” or the “Integrated Impact Assessment to the Homes for London: the London Housing Strategy”. Impact assessment is of interest of international organizations, including the EU (European Commission “Impact Assessments”. Available at https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/impact-assessments_en) and the OECD (See, for example, *OECD Framework for Regulatory Policy Evaluation*, (2014); *EU Smart and Better Regulation Agendas* (2010/2013/2015).

¹¹⁷ European Commission, “Integrated sustainability assessments”, EU Science Hub, 2016. Available at <https://ec.europa.eu/jrc/en/research-topic/integrated-sustainability-assessments>

¹¹⁸ Esteban Rossi-Hansberg and Pierre-Daniel Sarte, “Economics of Housing Externalities” *International Encyclopedia of Housing and Home*, vol. 2, (2012), p. 47-50.

Evidence-based policymaking as a collective process

The *2030 Agenda* emphasizes that the lack of decent quality, affordable housing, and uneven and unsustainable urban development are collective issues and that there is a need to mobilise various groups of stakeholders, at local, national and international levels, to overcome them.

Evidence-based policymaking and decision-making on sustainable housing and urban development requires a collaborative approach to the production and collection of data and development of evidence as this allows the achievement of better quality and frequency of data. In this context, it is essential that policymakers work to improve the capacities the NSOs as main producers of data for sustainable housing and urban development policies and for SDG11 monitoring, as well as other organizations and agencies comprising national statistical systems in UNECE countries.

On the other hand, the NSOs themselves must commence an evolution from data producer to coordinator, managing the various data inputs from the broader ecosystem, ensuring data quality, comparability and harmonization. This will ensure that data streams are relevant and useful for national policymakers and other stakeholders looking to manage and monitor progress.¹¹⁹ They also need to embrace opportunities stemming from collaborative evidence-based policymaking and work more closely with various stakeholders including local and regional governments, private companies, academia, civil society, and citizens¹²⁰ (as outlined in chapter 2).

With a view to improving decision-making on sustainable housing and urban development, it is essential to strengthen communication and collaboration within and between policymakers across policy areas and the levels of government (central, regional/federal and local) and to address “institutional siloing” (see box 6): one of the key challenges to effective evidence-based policymaking.

Institutional siloing can be addressed by introducing better coordination and communication mechanisms, better harmonization procedures at early stages of policymaking, and developing cross-field databases which include data that pertains to: (i) social, economic,

environmental and other aspects of housing and urban development, and (ii) data that portrays not only short-term and immediate but also medium and long-term effects of policy interventions. Communication about data needs and data collection and analysis efforts can be improved through periodic meetings and workshops and bilateral meetings.

Box 6 Institutional siloing as a challenge for evidence-based housing and urban development policies

In public policy, one of the main challenges to multi-stakeholder cooperation for the purposes of evidence-based urban and housing policies is “institutional siloing”.

Institutional siloing entails sustaining agency-specific approach to a particular policy problem in spite of recognising that the problem is multifaceted, cutting across various policy domains, and understanding that addressing the problem requires a coordinated policy response and the deployment of various policy approaches at the same time. Siloing unveils itself as, for example, agencies retaining agency-specific datasets and not sharing it with other organizations/agencies; or refusing to collaborate to address a particular policy problem.

Costs associated with institutional siloing can be high. As agencies collect and keep their own data without consultation with other agencies (e.g. regarding methodological approach to data collection), they are forced to fix broken communication channels at later stages of policy problems. At some point, these partial datasets can become too costly to harmonize. In this context, the institutional siloing can affect accurate definition of policy objectives and potentially mitigate positive effects of housing and urban development policies and programmes.

Learning from elsewhere

Over recent decades, analysts and decision makers have become ever more proficient in crafting policy responses based on data and evidence sourced from national, regional and local data producers. At the same time, however, they have started more proactively to search for solutions to housing and urban development outside their jurisdictions. In this respect, policymaking

¹¹⁹ Ibid.

¹²⁰ Sustainable Development Solutions Network, “SDG.Guide ‘Getting Started with the Sustainable Development Goals’”, 14 December 2015. Available at <https://resources.unsdsn.org/sdg-guide-getting-started-with-the-sdgs>

on sustainable urban development and housing has become subject to policy transfer.

Policymakers often look to develop examples of policies, projects, programmes or partnerships that were successfully implemented and brought about a positive change, and policies that were replicated elsewhere. The phenomenon of the transfer of such “good practices” can be referred to as “policy transfer”, that is, the process where data, information and evidence used for policy travel across the globe to define policy problems and their solutions. In order to meet these needs, policymakers and international organizations, including the United Nations and the EU, have developed platforms that enable the exchange of such good practices.

While there are valuable lessons to be learned from examining “best practice” examples, it is important to note that defining best practices is a complex process, informed by an understanding of the condition in which the practice emerged; and that what is considered a desirable/good/best practice is guided by the preferences and experience of actors in a particular context. Sometimes good practice examples may lack external validity or applicability to a wider range of contexts.

For instance, models of external validity suggest that successful policies fail to work when applied to certain situations due to local conditions affecting the theory of change, leading to a failure of the policy. In these cases, it is vital that the evidence of international best practices is combined with local knowledge and experience to ensure that the policy will have the desired effect. This process can be referred to as “policy translation”.

In the increasingly globalized world, policy transfer dynamics also bring about the harmonization of approaches to evidence-based policymaking discussed below.

Benchmarking of urban development

The essential elements of contemporary evidence-based policymaking are comparison and benchmarking. Policymakers and analysts compare, for instance, the character and the scale of housing and urban challenges, and the effects of policy interventions across time and space. They then develop tools, such as databases, that allow the compilation of the data in various forms.

Databases provide rich comparative and contextual data that can aid the formulation of urban policies, city-visions,

and long-term action plans. They can be produced by public, private and/or third sector organizations and many others, or as stand-alone initiatives (an overview of selected international databases can be found in annex 6). For instance, the United Nations and Eurostat have developed a range of databases dedicated to the monitoring of implementation of global, regional policies, projects or programmes, including the monitoring of SDGs. In some countries, international databases can be one of very few sources of reliable data about housing and urban development.

Policymakers engage in “benchmarking” of their practices, whereby they develop and/or use already existing policies and standards to assess the progress made against a “desired value” (a benchmark). Such desired values can be defined by Governments and included in local, regional or national policies and programmes, including the national sustainable development strategies, national water quality plans, masterplans, local development plans and many others.

At the same time, however, policymakers should use international standards to determine desired benchmarks, such as international standards on water quality, energy efficiency and others. In relation to housing, for instance, the European Commission calculates the “housing cost overburden rate” which assumes that when households spend 40 per cent or more the total disposable household income (net of housing allowances) on housing, such households are overburdened by housing costs.

Establishing benchmarks is a complex process and policymakers at all levels should ensure that the those established correspond to the realities on the ground. Such “verifications” can be carried out in the form of workshops, gathering policymakers at all levels of governance and other experts, including academia and NGOs.

Finally, governments at local and national levels can benefit from a range of tools that enable the assessment of the progress of cities against desired benchmarks, across various areas of policy and the SDGs. Such evaluations can be carried out independently by Governments or by UNECE in the context of the KPI4SSC framework and methodology.¹²¹

¹²¹ United Nations Economic Commission for Europe, *UNECE Protocol for the Evaluation of the City Performance against the Key Performance Indicators for Smart and Sustainable Cities*, (United Nations, forthcoming).

RECOMMENDATIONS

Developing evidence-based policies that support the measurement of progress on the SDGs now and in the future depend upon three key processes: (i) developing a robust set of national monitoring indicators, (ii) strengthening statistical capacity, and (iii) capitalizing on the data revolution, harnessing new technologies and new sources of data. Achieving better quality, high frequency data in support of the SDGs will require a step-change in the way governments and NSOs do business.¹²² On this basis, the following recommendations for improving evidence-based policymaking for sustainable urban development with a focus on housing are put forward:

A. Policy makers at all levels of governance need to ensure an integrated and coordinated approach to the review of the implementation of the 2030 Agenda for Sustainable Development

Successful implementation of the *2030 Agenda* requires the participation of all relevant stakeholders, at the global, regional, national, subnational, subregional, and local levels. Therefore, the guidelines stress the importance of ensuring an integrated and coordinated approach to the review of the implementation of the *2030 Agenda*, achieving SDG 11 and other housing and urban-related SDGs.

It is therefore recommended that policymakers at all levels of governance:

1. **Increase awareness about the premises of the 2030 Agenda and relevant requirements.** Policymakers should be aware of the reporting requirements emerging as a result of the implementation of the *2030 Agenda* in their country and should promote this awareness across the institutional spectrum. It is the role of the government to clearly communicate approach(es) to the realization of housing and urban-related goals of the *2030 Agenda* to various stakeholders, especially municipalities and the NSOs.
2. **Align policies and monitoring frameworks. Governments are responsible for mainstreaming SDG 11 into the National**

Sustainable Development Strategies, development policies on housing and urban development and other relevant policies and mechanisms. They need to ensure the convergence between existing approaches to housing and urban policymaking and the approaches to implementation of the *2030 Agenda* including the review of its goals and targets.

3. **Streamline national data collection and analysis efforts.** Governments should streamline the review of the implementation of the *2030 Agenda* and reporting for SDG 11 using already existing processes of data collection and analysis to develop roadmaps on statistics for SDGs and the National Reporting Platforms, which allow better coordination of national and international processes of data collection and the data storage.
4. **Ensure regular monitoring of SDG 11 and other urban-related targets.** With a view to enhancing the SDG 11 quality of review and improving the accountability of agencies involved, Governments need to ensure that reporting on SDGs takes place regularly and that the process accounts for interlinkages between SDG 11 and other SDGs.
5. **Improve capacities of national statistical systems.** NSOs need to better recognise the roles of various data producers in their respective countries and to include them in the SDG11 review process. Policymakers need to improve cooperation with other organizations and agencies comprising the national statistical systems in UNECE countries, as well as the Ministries in charge of the review of SDG 11 and other agencies in charge of policy development and implementation in relation to housing and urban development.
6. **Ensure high quality of data.** NSOs should continue their work to assure that the data used for the review of SDG 11 targets is developed using international standards, especially the Fundamental Principles of Official Statistics, in order to improve the quality of the review process.
7. **Explore opportunities for the use of alternative data sources.** Policymakers should explore opportunities to use non-statistical indicators, “administrative data” and big data to aid the review processes of the progress in the implementation of the *2030 Agenda*.
8. **Promote initiatives measuring progress towards sustainable development at the local level.** Cities

¹²² Sustainable Development Solutions Network, “SDG.Guide ‘Getting Started with the Sustainable Development Goals’”.

are the engines of sustainable development and are responsible for delivering essential infrastructure and services. However, their contributions towards sustainable development is captured only partially in official review process, most notably in the context of the SDG 11. Policymakers at the local level are therefore encouraged to use already existing global standards for the evaluation of cities' performance to carry out such evaluation processes and to communicate the outcomes of the evaluations.

B. Support openness in the data production and collection

Improving evidence-based policymaking requires improving the capacities of urban data producers, openness in data sharing and transparency in the use of data in policy responses. This is a precondition to the production of high-quality and relevant policies on sustainable housing and urban development and to successful reporting on SDGs.

To support openness in the data collection process, it is recommended to:

1. **Strengthen NSOs.** Systematic measures to improve capacities of NSOs, including the development of their regional/local offices to produce high quality urban data in a timely manner and in regular, short intervals, should be taken in all countries in the UNECE region, especially in countries with economies in transition.
2. **Consider opening access to data.** Policymakers at all levels of governance should consider making various types of data publicly available, as additional measures to verify the accuracy and relevance of data and evidence used in policy processes and decision-making. Opening data allows improving accountability of data producers through multiple quality checks by different stakeholders.
3. **Engage with academia.** It is essential that policymakers use the best available academic studies and evidence stemming from scientific evaluation as the basis for the development, implementation and review of housing and urban policies.
4. **Engage the private sector.** Policymakers and other stakeholders, especially private sector organizations, should work together to improve the openness of data, especially those that are related to housing market and housing construction, access to which has a critical influence on addressing, for instance, housing affordability challenges in cities.

5. **Ensure data privacy and security.** While improving openness of data and developing partnerships with private sector organizations, data privacy and anonymity should be ensured at the same time. Governments, private sector organizations and/or other stakeholders involved in the process should be kept accountable for how they handle the data.

6. **Create partnerships.** Policymakers are encouraged to form partnerships among municipalities, national statistical offices and their agencies, private sector organizations and NGOs in order to increase capacities for the timely production of data on housing and urban development. Successful models of such partnerships should be scaled up.

C. Promote comprehensive and integrated approaches to development and use of evidence.

Effectively addressing housing and urban development challenges in countries and cities in the UNECE region requires understanding the complex nature of the challenges and their solutions. With a view to maximise the potential of data in the policy process, and improving the quality and reliability of policy proposals, policymakers at all levels of governance need to ensure that approaches to decision-making on sustainable housing and urban are comprehensive and that these translate into processes for the collection of data, data analysis, and the use of evidence in decision-making. Specifically, it is recommended to:

1. **Combine data sources.** During the analysis of data, it is essential to combine various sources of data to develop reliable and grounded evidence, from public sector data (e.g. national statistics) to big data and recognize various roles better in policymaking.
2. **Undertake peer review.** Policymakers need to use internal and external peer-review procedures to ensure the highest reliability and clarity of data and evidence used in the policy process and decision-making.
3. **Think wide, think forward.** In order to improve the quality of evidence-based policy processes, it is necessary to recognise the "externalities" of policy interventions (e.g. positive and negative "effects" of the interventions). This involves producing/acquiring data and developing evidence corresponding to immediate, medium and long-term outcomes and effects of policy interventions in relation to various aspects of urban life – society, economy, environment and others - and at various scales local,

regional, national and supra-national, whenever appropriate.

4. **Apply integrated methodologies.** Policymakers should use integrated and comprehensive methodologies, frameworks and other tools better, including integrated sustainability assessment and territorial assessment tools, to assess the complex impacts of housing and urban intervention; and to design adequate and proportional proposals of future policies, programmes and projects.
5. **Go circular.** Policymakers need to better recognize the value of the “circular approach” to evidence-based policymaking, where data and evidence circulates in the policy process and therefore avoids fragmentation (e.g. ensuring that evidence derived from policy evaluation is used for policy development, and across various policy areas).

D. Reduce bias in evidence-based policy process and decision-making

In order to be effective, policy interventions need to be impartial and objective – grounded in data and evidence. This entails a need to tie the processes of collection and analysis of data, and decision-making using various kinds of tools. The guidelines, therefore, recommend to:

1. **Break the siloes.** Policymakers need to make efforts to break the “silo mentality” in housing and urban policies as one cannot successfully improve access to decent quality, affordable housing by increasing the pace of housebuilding without consideration of environmental standards and urban planning.
2. **Give priority to the use of integrated tools.** Decision makers should use primarily policy tools and instruments that allow connecting the processes of data sourcing, data analysis and decision-making, such as integrated sustainability assessment tools, as they limit opportunities for exercising personal and other biases.

3. **Mind the time dimension in policymaking.** Policymakers need to particularly consider the role of timing in decision-making, across stages of the policy process. Timing affects the quality of data and whether (and how) data and evidence enter the policy process. For instance, evidence emerging at the later stages of decision-making can be excluded from the policy process.
4. **Anticipate risks.** Decision makers should also use foresight more effectively, as well as impact assessments and integrated sustainability assessments, in order to make decision-making more forward-looking and improve the management of risks relating to adverse effects of policy initiatives.
5. **Provide training in data analysis.** Policymakers need to invest in skills development and training for policy analysts as this will translate into greater reliability and objectivity of evidence produced.
6. **Share knowledge and promote the exchange of “best practices”.** Policymakers and stakeholders should also invest further in sharing knowledge and “good practices” regarding available policy instruments and tools for the review of SDG 11 and other housing and urban-related targets at all levels of governance.
7. **Communicate policies.** Policymakers should communicate policy initiatives to the general public in a clear, transparent manner, making use of the best available tools and removing as much as possible technical, cultural and economic access barriers.
8. **Disseminate evidence to public.** Policymakers should make deliberate efforts to compile and present data and evidence used in decision-making in a clear and easy-to-read format, in statistical and non-statistical forms.





ANNEXES

ANNEX 1

SDG 11 TARGETS AND INDICATORS

Target	Indicator
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing
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	11.2.1 Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	11.3.1 Ratio of land consumption rate to population growth rate
	11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	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 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)
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	11.5.1 Number of deaths, missing persons and persons affected by disaster per 100,000 people
	11.5.2 Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services

Target	Indicator
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	11.6.1 Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities
	11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)
11.7 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	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
	11.7.2 Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous twelve months
11.A Support positive economic, social and environmental links between urban, per-urban and rural areas by strengthening national and regional development planning	11.A.1 Proportion of population living in cities that implement urban and regional development plans integrating population projections and resource needs, by size of city
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 <i>Sendai Framework for Disaster Risk Reduction 2015-2030</i> , holistic disaster risk management at all levels of governance	11.B.1 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with the <i>Sendai Framework for Disaster Risk Reduction 2015-2030</i>
	11.B.2 Number of countries with national and local disaster risk reduction strategies

ANNEX 2

HOUSING-RELATED TARGETS AND INDICATORS IN THE GLOBAL SDG FRAMEWORK

Target	Indicator
1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	1.4.1 Proportion of population living in households with access to basic services
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3.9.1 Mortality rate attributed to household and ambient air pollution
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity 7.1.2 Proportion of population with primary reliance on clean fuels and technology
17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries.	17.19.2 Proportion of countries that (a) have conducted at least one population and housing census in the last ten years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration.

ANNEX 3

DEFINITIONS OF SELECTED EU INDICATORS

- **Housing cost overburden rate** is: “the percentage of the population living in a household where total housing costs (net of housing allowances) represent more than 40% of the total disposable household income (net of housing allowances)”.¹²³
- **Housing deprivation rate** is: “the percentage of the population deprived of each available housing deprivation items” (Leaking roof, damp walls/floors/foundation, or rot in window frames or floor; lack of bath or shower in the dwelling; lack of indoor flushing toilet for sole use of the household; problems with the dwelling: too dark, not enough light).¹²⁴
- **In-work at-risk-of-poverty rate** signifies: “the percentage of persons in the total population who declared to be at work (employed or self-employed) who are at-risk-of-poverty (i.e. with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 per cent of the national median equivalised disposable income (after social transfers)”.¹²⁵
- **House Price Index (HPI)**: “measures the changes in the transaction prices of residential properties, both newly built and existing, purchased by households. Methodological background information is given in the Handbook on Residential Property Prices Indices and in the Technical Manual on Owner-Occupied Housing (OOH) and House Price Indices (HPI)”.¹²⁶

¹²³ Data is collected annually; variance: by sex, by tenure status, household type, degree of Urbanization, income quintile, by poverty status. Eurostat, “Housing cost overburden rate”.

¹²⁴ Eurostat, “Housing deprivation rate by number of item – EU-SILC survey”. Available at <https://ec.europa.eu/eurostat/web/products-datasets/product?code=tessi291>.

¹²⁵ Eurostat, “EU statistics on income and living conditions (EU-SILC)” (2018). Available at [http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_statistics_on_income_and_living_conditions_\(EU-SILC\)_methodology_-_in-work_poverty](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology_-_in-work_poverty).

¹²⁶ Eurostat, “Housing prices – overview”. Available at <http://ec.europa.eu/eurostat/web/housing-price-statistics/overview>.

ANNEX 4

SELECTED HOUSING INDICATORS IN GLOBAL AND REGIONAL DEVELOPMENT FRAMEWORKS

Policy framework	Goal/target	Indicator (subindicator), if any
UN SDG indicator set 2018	SDG 11	UN SDG 11 target 11.1 Proportion of urban population living in slums, informal settlements or inadequate housing.
UN SDG indicator set 2018	SDG 1	UN SDG 1 target 1.4.1 Proportion of population living in households with access to basic services.
UN SDG indicator set 2018	SDG 7	UN SDG 7 targets 7.1.1 Proportion of population with access to electricity 7.1.2 Proportion of population with primary reliance on clean fuels and technology.
UN SDG indicator set 2018	SDG 3	UN SDG 3 target 3.9.1 Mortality rate attributed to household and ambient air pollution.
UN SDG indicator set 2018	SDG 17	SDG 17 target 17.19.2 Proportion of countries that (a) have conducted at least one population and housing census in the last ten years; and (b) have achieved 100 per cent birth registration and 80 per cent death registration.
EU SDG indicator set 2019	SDG 11	Primary indicators: "Overcrowding rate" and "Population living in households considering that they suffer from noise". Multipurpose indicator: "Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames or floor".
EU SDG indicator set 2019	SDGs 1 and 8	Multipurpose indicator: "in work at-risk-of-poverty rate".
City Prosperity Initiative	"Infrastructure Development" prosperity dimension "Housing Infrastructure" sub-index	1.1 Improved shelter 1.2 Access to improved water 1.3 Access to improved sanitation 1.4 Access to Electricity 1.5 Sufficient Living Area 1.6 Population Density.
United for Smart and Sustainable Cities	"Environment" section	Residential thermal energy consumption Public buildings energy consumption
United for Smart and Sustainable Cities	"Safety, Housing and Social Inclusion" subdimension	Housing expenditure Informal settlements
United for Smart and Sustainable Cities	"Economy/Infrastructure"	Household sanitation Basic water supply Potable water supply Access to electricity Public building sustainability Integrated building management systems in public buildings Household access to ICT

ANNEX 5

DEVELOPMENT AGENDAS AND MONITORING FRAMEWORKS AT THE EU LEVEL

Sustainable development was introduced as a fundamental objective of the EU in the Treaty of Amsterdam in 1997 and over the years, EU institutions have undertaken multiple initiatives that support the realization of MDGs and SDGs, most notably in the areas of urban and regional policy, environmental policy, cohesion policy and funding mechanisms, as well as many others.

EU institutions do not have any specific mandate regarding housing, land management and urban planning. However, they influence on housing policy and practice of EU member States by introducing policies in such areas as society, economy and environment, urban and regional development, neighbourhood relations and international cooperation and international aid. For instance, by recognising that many EU member States face similar issues regarding quality of housing and urban infrastructures, urban sprawl, growing inequalities, aging population, as well as migration; and by introducing policies. The EU introduced the *Leipzig Charter on Sustainable European Cities* in 2007, which sets out common principles and strategies for affordable housing in European cities. In 2010, it introduced the *Toledo Declaration* that emphasizes the role of affordable housing in building social integration and cohesion. In 2016, it presented the Urban Agenda for the EU, which reiterates the importance of improving access to decent quality affordable housing in EU.

Throughout the years, the institutions used the cohesion policy (and related mechanisms), as well as social, economic and environmental policies to even sustainable urban growth, promote economic competitiveness and social inclusion in Europe. Most notably, housing issues in the EU are discussed and monitored from the perspective of the *European Pillar of Social Rights* (2016). Under the pillar “Social protection and inclusion”, principle 19 addresses “Housing and assistance for the homeless” and principle 20 addresses “Access to essential services” and both are included in the EU SDG policy monitoring as outlined below.

Finally, the EU institutions have also embarked on efforts to improve the way data, information and knowledge are used in their own context, developing and implementing a range of tools, frameworks and methodologies that aid decision-making at all levels of governance.

ANNEX 6

SELECTED GLOBAL AND REGIONAL DATABASES AND THEIR STRENGTHS

Database	Strength of the database	Link
The UN Statistics Division (databases)	<ul style="list-style-type: none"> The database is organized per SDGs and corresponding targets Easy for decision makers and analysts to navigate 	http://unstats.un.org/sdgs/indicators/database/
The UN Statistics Division metadata repository	<ul style="list-style-type: none"> Reflecting latest reference metadata information provided by the UN System and other international organizations on data and statistics for the Tier I and II indicators in the global indicator framework 	http://unstats.un.org/sdgs/metadata/ (as of January 2019)
The City Prosperity Initiative (CPI) database	<ul style="list-style-type: none"> Obtaining detailed disaggregated data at city level Comparing performance of cities 	http://cpi.unhabitat.org/download-raw-data (global CPI database for 2016)
Affordable Housing Database (AHD) of the OECD	<ul style="list-style-type: none"> Richness of data (indicators grouped along three main dimensions: housing market context, housing conditions, and public policies towards affordable housing) Each indicator presents data on a particular issue, relevant definitions and methodology Indicators also discuss comparability, data and source issues, and where relevant, include the raw data or descriptive information across countries¹²⁷ 	http://www.oecd.org/social/affordable-housing-database
Eurostat statistics	<ul style="list-style-type: none"> Easy to read format Data on (i) types of dwelling (detached, semi-detached, flat other)¹²⁸, (ii) tenure status (tenant – reduced price or free, tenant – market price, owner copied, with mortgage or loan, owner occupied, no outstanding mortgage or housing loan) and (iii) housing quality (material/housing conditions) and (iv) housing affordability 	https://ec.europa.eu/eurostat/statistics-explained/index.php/Housing_statistics

¹²⁷ Organisation for Economic Co-operation and Development, "Affordable Housing Database" (2016). Available at <http://www.oecd.org/social/affordable-housing-database.htm>.

¹²⁸ Eurostat, "Housing statistics" (2019). Available at https://ec.europa.eu/eurostat/statistics-explained/index.php/Housing_statistics#undefined.

Database	Strength of the database	Link
The EU SILC (the European Union Statistics on Income and Living Conditions) ¹²⁹	<ul style="list-style-type: none"> Statistics relating to income and living conditions¹³⁰ in the EU countries, including housing 	https://ec.europa.eu/eurostat/web/income-and-living-conditions/data/database
Urban Data Platform	<ul style="list-style-type: none"> Gathering and managing data on housing and urban development Status and trends of European cities and regions Monitoring/analysing cities and urban areas in certain thematic fields Achieving robust analyses with quick tables, graphs and maps, Reaching/acquiring data for a large set of cities¹³¹ 	http://urban.jrc.ec.europa.eu/?ind=popden&ru=fua&s=0&c=1&m=0&f=1&p=0&swLat=32.39851580247402&swLng=-59.4140625&neLat=61.77312286453146&neLng=81.2109375
DG Regio	<ul style="list-style-type: none"> Allocations of the EU fund on urban development and housing investments in the EU member states Comparison between the EU Member States 	https://cohesiondata.ec.europa.eu/browse

¹²⁹ The EU-SILC is a framework 'aiming at collecting timely and comparable cross-sectional and longitudinal multidimensional microdata on income, poverty, social exclusion and living conditions. Eurostat, "European Union Statistics on Income and Living Conditions (EU-SILC)". Available at <http://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions>. More information about EU SILC can be found at [http://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_statistics_on_income_and_living_conditions_\(EU-SILC\)_methodology_-_introduction](http://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology_-_introduction).

¹³⁰ Covering: income, poverty, social exclusion, housing, labour, education, health.

¹³¹ European Commission, "Urban Data Platform" *EU Science Hub* (2016). Available at <https://ec.europa.eu/jrc/en/scientific-tool/urban-data-platform>.

ANNEX 7

TYOLOGY OF DATA FOR SUSTAINABLE HOUSING POLICIES BASED ON THE GENEVA UN CHARTER ON SUSTAINABLE HOUSING¹³²

<p>Economic data – data describing housing market dynamics (housing supply, housing demand, house prices and others) and rules and regulations that influence on functioning of housing markets (e.g. spatial planning regulations), for instance:</p> <ul style="list-style-type: none"> • Housing supply (total number of housing dwellings, number of housing dwellings of a particular type of tenure, number of empty dwellings) • Housing demand (e.g. number of persons in a need of housing, number of persons on waiting list for social housing, number of homeless persons) • Expenditure on housing (e.g. public spending on housing, households' spending on rent, house prices in primary/ secondary markets, housing-related expenditure, the value of investment in housebuilding/housing renovation of individuals, households, in cities, countries) 	<p>Social data – data describing housing in relation to the characteristics of population, the issue of social inclusion, for instance:</p> <ul style="list-style-type: none"> • Gender • Age • Ethnicity • Income • Disability • Social status • Economic status • Migratory status
<p>Governance data – data referring to the organization of housing provision and housing markets,¹³³ for instance:</p> <ul style="list-style-type: none"> • Types of housing providers (developers, housing associations social rental agencies, • Types of tenure (rental housing, homeownership, affordable housing, social housing, public/municipal housing) • Types of public support on housing (supply side subsidies/demand side subsidies for housebuilding or renovation) • Type of public support for housing (supply driven and/or demand side subsidies; or mix) - data on e.g. housing allowances; grants (subsidies for housebuilding, renovation) and others 	<p>Environmental data – data that describes housing in relation to environment, including the environmental impact of housing, for instance:</p> <ul style="list-style-type: none"> • Quality of housing (e.g. material condition of housing stock, access to basic facilities, overcrowding, energy efficiency, empty dwellings) • Type of dwelling • Redistribution of dwelling in space • Energy efficiency of buildings • Air quality

¹³² The typology was developed based on the key principles of sustainable housing: a) Environmental protection, b) Economic effectiveness, c) Social inclusion and participation, d) Cultural adequacy; as outlined in the *Geneva UN Charter on Sustainable Housing*.

¹³³ The categories outlined below can be found across countries in UNECE region and cannot be attributed to one specific country.

ANNEX 8

CONTRIBUTION OF THE QUALITATIVE AND QUANTITATIVE DATA TO EVIDENCE-BASED HOUSING AND URBAN DEVELOPMENT POLICIES

- (a) **Quantitative data** (represented in numerical form) can be used to depict scale and/or extent, for instance the projected population/household growth, demand for new housing, number of homeless persons, density of persons per residential unit, the average number of rooms per family, the average number of adapted flats for persons with disability, and public spending for affordable housing, level of rent, housing cost etc.;
- (b) **Qualitative data**¹³⁴ (represented in non-numerical form) can be useful to describe household residential satisfaction, quality and resilience of buildings, barriers in accessing housing finance, perception of crime in a neighbourhood, housing satisfaction, type of public support for housing, and what home means to individuals and households.

¹³⁴ Paul J. Maginn, Susan Thompson and Matthew Tonts. "Chapter 1 Qualitative housing analysis: A meta-framework for systematising qualitative research" in *Qualitative Housing Analysis: An International Perspective*. (Emerald Group Publishing, 2008).

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Guidelines on evidence-based policies and decision-making for sustainable housing and urban development

The “Guidelines on evidence-based policies and decision-making for sustainable housing and urban development” intends to assist policy-makers at all levels of governance, national statistical offices, non-governmental organizations and academia by providing timely guidance on the development, review and implementation of policies, projects and programmes that are evidence-based and which correspond to the 2030 Agenda for Sustainable Development. This document stems from the project “Evidence-based policies for sustainable housing and urban development in selected countries with economies in transition” carried out by UNECE, in collaboration with UN-Habitat, between 2016 and 2020.

The guidelines capture the diversity of ongoing activities of policy makers and other stakeholders in the UNECE region to develop evidence-based policies on sustainable urban development with a focus on housing. They present the benefits of deploying evidence-based approaches to policymaking in relation to the production/collection of data and the development of evidence and decision-making, in the context of national, regional and local development agendas. Further, they demonstrate the application of various policy approaches (frameworks, methodologies and other tools) into practice, in order to improve the review of SDG 11 and other urban related targets in the UNECE region and thus reinforce the implementation of the 2030 Agenda for Sustainable Development.

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