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Primer

Making the Case for an International Housing Statistics Framework

Prepared by the United Nations Network of Economic Statisticians

Primer

Making the Case for an International Housing Statistics Framework

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Executive Summary

Housing is fundamental to human well-being, influencing health, economic stability, social cohesion, demographic trends, environmental sustainability, and overall quality of life. Recognized as a human right, adequate housing is essential for personal and community development. This report highlights the need for the development of a robust, internationally accepted housing statistics framework to address housing challenges and improve policymaking.

Many countries are currently facing housing challenges that include an affordability crisis, overcrowding issues, substandard housing quality, and significant socio-economic disparities stemming from housing. These challenges can be exacerbated by fragmented conceptual approaches and data collection methods, which impede comprehensive analysis and effective policymaking.

This report summarizes considerations on the key concepts, metrics, and methodologies needed for consistent data collection and analysis in an internationally accepted housing framework. The core elements include economic factors such as supply and demand dynamics, investments, price indicators, and affordability metrics. Social factors encompass demographics, household dynamics, homelessness, overcrowding, and social housing. Environmental factors address the impact of housing on natural surroundings, sustainability practices, and risk exposures.

A new approach that enables the creation of knowledge on housing and evidence-based policies is needed. A framework entails the articulation of key concepts, the relationship between those concepts and that clearly interfaces with other existing frameworks, such as the System of National Accounts, System of Environmental-Economic Accounting, and Quality of Life. Coherent data collection and integration are also pivotal for a framework's success, leveraging multiple sources such as surveys, censuses, administrative records, financial data, big data, and remote sensing. However, integrating diverse data sources and ensuring data quality and reliability presents significant challenges.

In this report, case studies from Canada and Australia illustrate considerations for the development and implementation of housing statistics frameworks. Canada is developing a comprehensive framework integrating social, economic, and environmental lenses, while Australia created an experimental dataset combining administrative data to enhance housing insights.

Looking ahead, a global framework must reflect technological advancements, increased focus on sustainability, standardization, and dynamic policy impact assessment. This report formulates a call to action to encourage the formulation and adoption of a global framework, involving engagement of global stakeholders, collaboration and partnerships, education and awareness, and securing funding and resources.

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Abbreviations:

ABS	Australian Bureau of Statistics
NSO	National Statistical Organizations
OECD	Organization for Economic Cooperation and Development
SDG	Sustainable Development Goal
SNA	System of National Accounts
StatCan	Statistics Canada
UN	United Nations
UN-Habitat	United Nations Human Settlements Program

I. Introduction

I.A. Overview of Housing Importance

1. Housing represents one of the most fundamental human needs, crucial not only for survival, but also as a foundation for individual and community well-being. The quality, affordability, and location of one's housing profoundly influence their health, safety, ability to learn and work, and overall quality of life. Housing is more than just shelter; it is intricately connected to a person's sense of identity and belonging, serving as a pivotal setting for personal and familial development.

2. Housing is a complex and multidimensional issue; it transcends the simple concept of physical shelter. It influences nearly every aspect of life, including health, economic stability, social interactions, cultural identity, environmental sustainability, and psychological well-being. Given its centrality to human life, understanding and addressing housing issues is crucial for any society aiming to improve the overall quality of life and ensure equitable growth and development. When addressed through a holistic approach, housing has the potential to deliver a range of social, economic and environmental benefits, particularly for low-income and marginalized groups. For example, recent evidence suggests that improving housing in informal settlements can substantially improve human development outcomes, such as life expectancy, school and national income [1].

I.A.1. Human Right to Adequate Housing

3. The right to adequate housing is recognized in international human rights law as part of the right to an adequate standard of living. Its recognition has evolved since the adoption of the Universal Declaration of Human Rights in 1948. Article 25, paragraph 1 declared that “everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness disability, widowhood, old age or other lack of livelihood in circumstances beyond his control”. All 193 UN member states have signed it, with many members going further in recognizing the right to housing in their national constitutions.

4. Central to this evolution is the International Covenant on Economic, Social and Cultural Rights (ICESCR), which recognizes everyone's right to an adequate standard of living, including adequate food, clothing, and housing, and continuous improvement of living conditions (Article 11) and states corresponding obligations, generally understood as the respect for free consent and cooperation. Adequate housing, as defined by the Committee on Economic, Social and Cultural Rights (CESCR) General Comment No. 4 (1991) refers to the security of tenure, including protection against evictions and upholding property rights conform to minimal standards of affordability, habitability, suitability and cultural adequacy.

I.A.2. International Efforts for Monitoring Housing

5. International efforts to measure adequate housing can be traced back to1988 with the Housing Indicators Program by UN-Habitat and the World Bank, aiming to assist countries in developing housing indicators for policy use. By 1993, it expanded into the Urban Indicators Program, endorsed during the 1996 Habitat II Conference, contributing data on 46 indicators, including 10 on housing, and forming the Global Urban Indicators Database with data from 232 cities across 113 countries.

6. From 2002 to 2004, the United Nations Housing Rights Program developed a housing rights monitoring framework and proposed 15 key housing indicators. A key milestone was the 2002 adoption of an international definition for slum measurement, enabling global monitoring of inadequate housing under the Millennium Development Goals. UN-Habitat continues to update the Global Urban Indicators Database, now covering 112 indicators, but gaps in sectoral data needed for housing policies persist, emphasizing the need for improved data collection to support global and local housing strategies.

7. Among the corresponding treaty obligations of state is the duty to report periodically on its implementation of the human rights to adequate housing. The Committee on Economic, Social and Cultural Rights has developed guidelines accordingly [2], including to indicate whether a national survey on homelessness and inadequate housing has been undertaken, as well as its findings, in particular the number of individuals and families who are homeless or inadequately housed and without access to basic infrastructures and services such as water, heating, waste disposal, sanitation, and electricity, as well as the number of persons living in over-crowded or structurally unsafe housing.

8. Among the process indicators to be reported are:

a. The measures taken to ensure access to adequate and affordable housing with legal security of tenure for everyone, irrespective of income or access to economic resources.
b. The impact of social housing measures, such as the provision of low-cost social housing units for disadvantaged and marginalized individuals and families, especially in rural and deprived urban areas, whether there are waiting lists for obtaining such housing, and the average length of waiting time.
c. Measures taken to make housing accessible and habitable for persons with special housing needs, such as families with children, older persons and persons with disabilities.
d. The legislative and other measures in place to ensure that housing is not built on polluted sites or in immediate proximity of pollution sources that threaten the health of inhabitants.
e. Any disadvantaged and marginalized individuals and groups, such as ethnic minorities, who are particularly affected by forced evictions and the measures taken to ensure that no form of discrimination is involved whenever evictions take place.
f. The number of persons and families evicted within the last five years (i.e., or the last reporting period) and the legal provisions defining the circumstances in which

evictions may take place and the rights of tenants to security of tenure and protection from eviction [3].

9. During the second United Nations Habitat Assembly, in 2023, member states adopted a resolution [4] on "Affordable Housing for All," upon which they agreed to renew their call to prioritize adequate housing and view housing as a human right. The resolution established an Open-Ended Intergovernmental Expert Working Group tasked to develop recommendations on policies to accelerate progress toward the universal achievement of safe, sustainable, adequate and affordable housing. The group was asked to propose a framework for measuring and reporting on housing adequacy across diverse national and local contexts [5].

10. Toward this mandate, UN-Habitat has been working in collaboration with many National Statistics Offices (NSOs), local governments, city and urban observatories, and partners on the selection of the minimum core set of housing indicators to be monitored globally. As such, an nternationally agreed integrated housing framework would address national and global measurement needs.

I.B. Impacts of Housing on other dimensions

I.B.1. Health and Well-being Impact

11. A stable and adequate home is a cornerstone of individual well-being. Housing's primary function is to provide dignity and security to a household. It provides a sense of security and control that acts as a buffer against stress and allows for the development of personal and familial identity. Housing instability, on the other hand, can exacerbate mental health issues such as anxiety and depression. Adverse housing markets can also keep people from leaving psychologically unhealthy living environments and physical abuse.

12. As part of its contribution to the UN Year of Shelter for the Homeless, in 1989, the World Health Organization (WHO) convened an Expert Committee to issue Health Principles of Housing as a guide for thought and action, based on experimental, clinical or epidemiological findings. It offered one of the rare policy guides that noted the pace of population growth outstripping the rate of development resulting in greater inequalities of development benefits [6].

13. Also in 2008, the UN Office of the High Commissioner for Human Rights issued a list of illustrative structural, process and outcome indicators on the right to adequate housing [7] that integrated Millennium Development Goal-related indicators existent at the time. In 2018, WHO also issued *Housing and Health Guidelines* [8], which aligned with the 2030 Agenda, in particular Sustainable Development Goals (SDGs) 3 and 11. It also specified the vectors of housing that often lead to negative health outcomes. The Guidelines are to be updated every five years. The WHO also issued health policy guidance, recognizing adequate housing as a social indicator of health [9].

14. Well-being statistics capture the housing's primary function and offer their own conceptual frameworks and measurement[1] and identify housing, along with several factors closely related to

[1] See also Measuring well-being and progress | OECD

housing (i.e. social connections, environmental quality, safety, etc.) as major factor in explaining individual well-being.

15. Moreover, the housing conditions, or its habitability[2], has been established as a social determinant of health [10, 11]. The physical structure and location of housing directly impact the health outcomes of its occupants. Well-built homes in safe environments protect families from environmental hazards such as pollution, noise, and extreme weather conditions. Conversely, substandard housing, including the lack of safe water and sanitation connections, can lead to a plethora of health problems, from respiratory infections stemming from mold and dampness to chronic stress from inadequate living conditions or overcrowding. Safety, a primary concern, is also dictated by structural integrity and location, safeguarding residents from both environmental risks and crime. [12, 13].

I.B.2. Economic Impact

16. Housing plays a catalytic role in economic development and employment generation. The housing sector touches virtually every single aspect of the economy of a country (technology, research, water and sanitation, building industry, land and property rights and the financial sector). A well-functioning housing sector has the potential to drive growth, representing more than 15% of gross domestic product (GDP) in some countries [5, 14].

17. For most households, housing is the largest single expenditure and typically represents the family's most significant asset. Homeownership is often associated with wealth accumulation, not just through the value of the property itself but also by facilitating access to credit and other financial opportunities [15, 16]. Housing stability allows families to budget and plan with more certainty, while instability can lead to financial distress and insecurity. Furthermore, housing markets play a crucial role in the national economy, influencing macroeconomic indicators such as employment in construction, real estate, and a myriad of others such as inflation, financial stability, and GDP growth. Given its large economic impact, monitoring the financial risks and vulnerabilities associated with housing also plays an important macroprudential role. As an example, the 2008 Great Recession stemmed from mortgage-backed securities, fueled by a housing boom and lenient lending conditions, and led to significant financial shocks well beyond the housing sector. Key economic perspectives of housing that require monitoring include inflation in housing costs, the rate of debt, investments and outstanding mortgage rates in the housing sector, which can indicate the scale of housing finance in the national economy and its potential impact on financial stability.

I.B.3. Social Cohesion, Social Inclusion and Safety

18. Housing sits at the center of social interactions and engagement within communities. Neighborhoods and homes influence social networks, access to education and employment

[2] Habitability of housing is defined within the right to adequate housing as the safety, space and structural quality of housing.

opportunities. Adequate housing, as defined in the human rights framework, also refers to the accessibility, location, access to services and cultural adequacy of housing.

19. The ability of individuals to access relevant and appropriate community resources can shape their social and cultural experiences, as well as their economic integration. Cultural adequacy ensures that housing and neighborhood layout respect and incorporate cultural practices, by which housing can affect people's ability to practice their beliefs and traditions. In this sense, housing can be the space where traditions are shared, and cultural identities are reinforced.

20. At the neighborhood level, when the housing costs or characteristics fail to meet the specific needs of disadvantaged and marginalized groups, the cost of housing and the characteristics of the built environment can lead to spatial segregation of income groups. The unequal distribution of housing, services and opportunities, in turn, perpetuates socioeconomic disparities. Segregation based on race, income and social status can be associated with public safety, crime, and unrest [12, 13].

21. Consistent with the WHO finding that physical security forms an important social indicator of health [9], conflict-induced displacement and housing destruction are major drivers of housing challenges in certain regions. Adequate housing is crucial for peace and security. Secure housing, land and property rights are essential components of post-conflict stabilization and peacebuilding.

I.B.4. Urbanization and Demographic Impacts

22. Housing conditions are closely associated with urbanization and demographic dimensions. Both urbanization trends and household composition changes have profound implications for the housing markets.

23. A series of World Population Conferences since 1927 culminated in the 1994 International Conference on Population and Development convened in Cairo. There, states transformed global thinking on population and development issues and defined a bold agenda, placing people's dignity and rights at the heart of sustainable development. The Program of Action called on governments to formulate family-sensitive policies in the field of housing [17]. However, no comparable high-level conference has been convened to follow-up and update the Program of Action.

24. Globally, unprecedented demographic changes will occur by 2100. While about 55% of the world's population currently lives in cities, this proportion is expected to increase to approximately 68% by 2050, adding about 2.2 billion people in urban areas [18]. At the same time, the world population is expected to peak toward the end of the century, and one in four people globally currently lives in a country that has already peaked. By 2080, persons aged 65 or older will outnumber those aged under 18, and immigration will be the main driver of population growth for 50 countries or areas [19]. To meet the rising demand from population growth, changing fertility and ageing patterns, at least 40 million new housing units will be needed, mostly in sub-Saharan Africa and parts of Asia [5].

25. Furthermore, the demand for housing, particularly in urban areas, is likely to increase further due to socio-demographic transition processes. Changes in family dynamics and structures that

decrease average household size increase the demand for housing, as do increased migration and displacement due to climate change [5]. Climate change is expected to force internal displacement within national borders and is expected to have a greater impact on low-income populations [20, 21].At the household level, families may make reproductive choices as a function of their ability to live in a suitable dwelling, or to move to a bigger unit. At the confluence of demography and health, many countries' health policies also encourage seniors to age in place, but those units may require accessibility retrofits and access to formal and informal care. Over-housed households may occur over time when households whose grown up children have moved out and may result in a misallocation of available living spaces and population at the aggregate level [22].

26. Immigration levels also need to be reflective of housing market availabilities, largely driven by rental market vacancies as immigrants tend to begin their housing career in their new country as renters. Affordability may also have an impact on people's ability to form households or may lead households to double up and live in unsuitable dwellings. High housing prices may lead adult children to remain longer with their parents, even if they have entered a productive stage of their life, thus leading to decreased social and economic mobility.

I.B.5. Environmental Impact

27. The way housing is constructed, maintained, and powered has significant implications for the environment. Sustainable buildings reduce waste, conserve energy, and minimize the carbon footprint of households. Urban planning and housing design also play crucial roles in managing urban sprawl and preserving green spaces, which are vital for environmental health and the well-being of city dwellers. Beyond the contribution of the housing sector to environmental factors, housing is also exposed to climate change, especially in the form of extreme weather events. Resilient structures and infrastructures can thus mitigate the economic and social impacts of those emerging trends. A thorough understanding of the interrelationship of housing with environmental factors can also foster the development of new financial, insurance and policy instruments that can address these new forms of widespread risks.

I.C. Current Global Housing Challenges

28. The landscape of global housing challenges varies significantly across different regions and communities. However, some core issues are universally recognized as significant barriers to achieving sustainable and equitable housing. Understanding these challenges is crucial for developing targeted solutions and policies that can address the diverse needs of populations worldwide.

29. The current global housing policy and statistical challenges require coordinated efforts from governments, private sectors, and communities to address issues of affordability, urban overcrowding, quality, sustainability, legal and regulatory frameworks, and socio-economic disparities. These challenges highlight the urgent need for a comprehensive and unified housing statistics framework to better understand and tackle these pressing issues effectively with a comprehensive set of coherent housing statistics and indicators.

I.C.1. Affordability Crisis

30. One of the most pervasive housing challenges globally is the lack of affordable housing. In both developed and developing nations, a significant portion of the population struggles with housing costs that are disproportionately high compared to their incomes. This crisis is exacerbated by:

- Rising prices in many urban areas, whereby housing prices have escalated far beyond the pace of income growth, making homeownership increasingly inaccessible for middle and lower-income families, crowding out vulnerable population groups and exacerbating homelessness;
- Rental markets in major cities are experiencing similar trends of rising prices with rents rising sharply, often driven by high demand and limited supply;
- Fiscal challenges experienced by governments across the globe limit the ability to build social housing;
- Large migration of populations from rural to urban areas in search of work leads to overcrowding.

31. The affordability crisis forces families to allocate a substantial portion of their income toward housing, limiting their ability to cover other essential expenses such as healthcare, education, and savings, thereby perpetuating cycles of poverty, economic instability, and, in extreme cases, homelessness.

I.C.2. Urban Overcrowding, Quality and Sustainability of Housing

32. Rapid urbanization is another significant challenge. As more people migrate to cities in search of employment and better living conditions, urban areas are becoming increasingly crowded. Urban overcrowding not only affects the quality of life but also exacerbates environmental and health risks, creating urgent needs for sustainable urban planning and development strategies. The high population densities strain infrastructure, public services, and housing quality, often resulting in substandard living conditions.

33. In many countries, the informal housing sector is prevalent and is home to low-income and vulnerable populations. Nearly 1.1 billion live in slums or informal settlements, an issue most prevalent in Sub-Saharan Africa (53.6% of the urban population in 2022) and Central Asia and Southern Asia (42.9% in 2022) [23]. People living in slums or informal settlements often lack access to improved water, lack access to improved sanitation, lack sufficient living area and quality/durability of structure and face insecurity of tenure.

34. In some cases, dwellings can be subject to incremental changes, where households begin with a single room, and additions, improvements and renovations are performed over time and as households grow or their financial situation improves. This suggests that dwelling attributes and overall quality should not necessarily be considered as being static.

35. In many developing countries, the rapid influx of urban populations leads to the expansion of slums or informal settlements, where residents live without basic amenities like clean water, sanitation, and electricity. In 2022, one quarter of the urban population, or 1.12 billion people, lived

in slums, an increase of 130 million since 2015. The rise was particularly notable in Eastern and South-Eastern Asia, where the slum population grew from 21.7% in 2020 to 24.8% in 2022, and in sub-Saharan Africa, which saw an increase from 50.2% to 53.6% during the same period [24].

36. The quality of housing remains a critical issue, particularly in low-income regions. Substandard construction results in many homes being built with poor-quality materials and lacking essential structural integrity, making them vulnerable to natural disasters such as earthquakes and floods. In addition, a significant number of households do not have access to essential services, including reliable electricity, clean drinking water, and adequate sanitation. The environmental impact of housing construction and maintenance is a growing concern. Sustainable housing that minimizes energy consumption and reduces carbon footprints is increasingly necessary to combat climate change and ensure long-term environmental health.

I.C.3. Legal and Regulatory Frameworks

37. Inadequate legal and regulatory frameworks often pose significant barriers to improving housing conditions, as they fail to provide the necessary support and protection for stable, affordable housing. One key issue is tenure security, where a lack of clear property rights can prevent individuals and families from investing in or maintaining their homes. Without legal certainty, residents may face the threat of eviction or conflict over land ownership, leading to instability and discouraging long-term investment in housing quality. This insecurity undermines efforts to create safe, stable communities and perpetuates cycles of displacement, as residents lack assurance that they can remain in their homes.

38. Additionally, zoning and planning issues play a major role in shaping the accessibility and affordability of housing. Inefficient land use policies and outdated zoning laws can restrict the development of new housing, especially in high-demand areas, thus driving up prices and contributing to urban sprawl. In many cases, zoning regulations prioritize low-density residential areas, limiting the construction of multifamily or affordable housing units. This not only reduces housing options for low- and middle-income families but also exacerbates environmental and infrastructure strains as urban areas expand outward. Addressing these challenges requires comprehensive legal reforms to modernize zoning practices, prioritize mixed-use developments, and streamline land use policies. By creating a supportive legal framework that encourages sustainable housing practices and safeguards tenure security, governments can foster equitable and resilient communities that better meet the needs of diverse populations.

I.C.4. Socio-economic Disparities

39. Housing challenges are deeply connected to broader socio-economic disparities that disproportionately impact marginalized groups, perpetuating cycles of inequality. Discrimination, whether based on race, ethnicity, or economic status, often restricts certain groups' access to adequate housing, forcing them into less desirable, underserved neighborhoods. This segregation can lead to communities with starkly different levels of service and infrastructure, such as access to quality schools, healthcare, and employment opportunities. Discriminatory practices in housing can limit people's options and exacerbate economic disparities, reinforcing patterns of exclusion that

persist across generations. Without intervention, these divisions not only undermine social cohesion but also hinder upward mobility for those most affected.

40. Vulnerable populations, including seniors, people with disabilities, indigenous communities, and low-income families, often face unique barriers that further limit their housing choices. These groups may require specialized housing solutions, such as accessible facilities for the disabled or culturally appropriate housing for indigenous communities, yet they often encounter significant financial or systemic obstacles. Limited access to affordable, suitable housing exacerbates their social and economic challenges, making it difficult for these individuals to achieve stability and thrive. Addressing these disparities requires intentional policy changes that prioritize inclusivity, ensuring that housing programs are designed to meet the needs of all community members. By actively working to remove these barriers, policymakers can help create more equitable housing opportunities and foster inclusive communities where everyone has access to safe, suitable housing.

I.C.5. Statistical Challenges and Data Solutions

41. The lack of an internationally agreed housing monitoring framework results in fragmented data collection and analysis processes of housing data. At a global level, the primary existing global monitoring frameworks for housing are the SDGs and the New Urban Agenda, supplemented by regional agendas[3] , the System of National Accounts (SNA) assessments, and the United Nations recommendations for housing censuses. Each of these frameworks approaches housing data from different angles, leading to varied focuses and methodologies. For instance, the SDGs emphasize the accessibility and affordability of housing under Goal 11, which seeks to make cities inclusive, safe, resilient, and sustainable. Meanwhile, under the SNA, GDP calculations might consider housing primarily in terms of investment and consumption, and UN Housing Census recommendations aim to standardize data on housing characteristics across nations[4].

42. Housing frameworks support the tracking of Quality of Life in cities. The perception of affordability, quality, accessibility and availability of adequate housing is crucial. These aspects promote a comprehensive approach that is relevant to the social and ecological function of human settlements.

43. This fragmentation poses significant challenges. Different methodologies and definitions used across these frameworks can lead to inconsistent concepts, definitions and indicators, making it difficult to compare housing conditions across countries, or to track progress uniformly. For example, what one framework might define as "adequate housing" could differ in another, affecting how housing quality and accessibility are measured and reported. Moreover, important aspects of housing, such as sustainability and resilience to climate change, are often underemphasized, leading to gaps in global housing strategies.

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[3] Such as the Agenda 2063 for African Development, the Regional Action Plan for the Implementation of the New Urban Agenda in Latin America and the Caribbean 2016-2036, or the Geneva UN Charter on Sustainable Housing.

[4] See also "Principles and Recommendations for Population and Housing Censuses, Revision 4 (2025)", background document to the Report of the Secretary-General on the 2020 and 2030 World Population and Housing Census Programmes.

44. The limitations and challenges of the current approach to housing data collection are evident. Data gaps are common, particularly in less developed regions where resources for data collection and analysis are limited. These gaps hinder the ability of governments and organizations to make informed decisions about housing policies. Additionally, the complexity of housing as a multidimensional issue means that data must be integrated across various domains, encompassing statistics and indicators supporting economic, environmental, and social policy, a statistical quality not currently accomplished by existing frameworks.

45. The need for an internationally agreed upon housing framework is therefore clear. Such a framework would harmonize definitions and methodologies, facilitating better comparisons and benchmarking between countries. It would also promote a more holistic view of housing that includes economic, social, and environmental dimensions, ensuring that all aspects of housing are addressed comprehensively. This could lead to more targeted and effective policies, with a clearer understanding of how housing impacts and is impacted by other policy areas, such as urban development, poverty reduction, and environmental sustainability.

46. By establishing a unified international housing framework, the global community could better mobilize resources, align policy priorities, promote unified research and analysis, and share best practices, ultimately improving housing conditions worldwide and achieving the SDGs related to sustainable cities and communities. This framework would not only address the current limitations, but also build a foundation for addressing future challenges in housing as global conditions evolve.

II. Motivation for an International Housing Statistics Framework

47. Housing is a cornerstone of individual welfare and economic stability, serving as a primary indicator of a nation's development and its social fabric. Given its significance, there is a compelling need for a robust housing statistics framework. Such a framework is essential for monitoring, understanding, and addressing the multifaceted issues associated with housing across various regions and socio-economic contexts.

48. The motivation for developing a housing statistics framework is driven by the need to better understand and address the complex dynamics of housing markets, the imperative of crafting effective and equitable housing policies, and the goal of promoting socio-economic inclusion and sustainability.

49. Unlike some other areas, the housing domain often involves many actors where NSOs do not usually control all aspects of the statistical and information system. Within countries, concepts, measurements, and insights on housing often stem from a multitude of organizations ranging from NSOs, policy functions of governments, non-profit organizations, and private sector entities. A housing statistics framework can thus help shape the role of NSOs in relation to the efficient functioning of housing markets and evidenced-based policy making, while also ensuring coherence with activities performed by other actors. NSOs can delineate and emphasize their role and actions to

ensure that a narrow and high-quality set of statistical information on housing is provided in timely manner, while situating their contributions in the broader context where other actors also play a role.

50. A framework can support the development of official statistics on housing within and across nations, in line with the *Fundamental Principles of Official Statistics* [25], in ways that can strengthen markets, policies, democracies and trust in official housing statistics.

51. Such a framework is essential for transforming data into actionable insights that lead to meaningful improvements in housing conditions globally and locally. Therefore, while a housing statistics framework should be globally generic, it needs to be adaptable to unique national and local circumstances and solutions.

52. A distinct and new multifaceted view on the production and analysis of housing statistics also indicates a departure from historical approaches. Traditional conceptual approaches typically looked at housing as a component of national accounting or as a factor or distinct outcome in social statistics – rather than a coherent set of dimensions and indicators of their own. Housing markets and their multifaceted impacts are nationally and globally recognized as policy priorities and therefore are subject to numerous national and international policy, legal and regulatory frameworks. As such, an internationally agreed integrated statistical framework for housing is required as a comparable tool for understanding housing as a system and addressing today's social, economic and environmental challenges.

II.A. Complex Housing Dynamics

53. By providing a structured approach to collecting, presenting and analyzing housing data, a statistics framework ensures that stakeholders are equipped with the necessary information to make informed decisions, thereby enhancing the ability to address housing issues effectively. It also provides a set of information to benchmark, track, compare and evaluate housing policy outcomes, beyond the delivery of program outputs.

54. Housing markets are inherently complex, influenced by an array of factors including economic conditions, policy decisions, social trends, physical constraints, and environmental impacts. A comprehensive housing statistics framework helps to untangle these complexities by providing clear, actionable data that can be used to:

II.A.1. Monitoring Market Conditions

55. Monitoring market conditions within the housing sector involves closely observing several critical dynamics that can significantly impact economic stability and individual well-being. First, tracking housing supply and demand provides essential insights into market health, helping policymakers and stakeholders gauge whether available housing meets the needs of the population. Such data also reveal trends in housing shortages or surpluses, which can affect affordability and drive up prices in high-demand areas. By closely observing fluctuations in housing prices, affordability, and market stability, stakeholders can identify potential challenges, such as price

spikes that may put homeownership out of reach for many families, thus affecting overall economic resilience.

56. Additionally, analyzing trends in rental markets and homeownership rates provides a deeper understanding of shifts in housing preferences, financial accessibility, and the overall housing landscape. Understanding the use and ownership patterns of homes reveals housing's dual role as both a necessary living space and a valuable asset. This dual role highlights the importance of housing as a critical component of personal wealth and economic security. Furthermore, tracking macroprudential risks and vulnerabilities associated with housing – such as those linked to lending practices or economic downturns – is essential to prevent financial instability and mitigate risks to the broader economy. By focusing on these areas, a robust housing framework can provide data-driven insights that support effective policy decisions and sustainable housing markets.

II.A.2. Identifying Housing Shortages and Market Failures

57. Identifying housing shortages and market failures is essential for addressing critical issues in the housing sector, particularly regarding affordability and access. A focused data driven examination can pinpoint areas where affordable housing is in critical shortfall, enabling governments and organizations to channel resources more effectively and prioritize areas with the greatest need. This assessment allows for targeted interventions, especially in regions where low-income families and vulnerable groups are most affected by inadequate housing. Moreover, evaluating the effectiveness of current housing policies and programs provides a feedback loop to understand what is working and what might require adjustments, ensuring that policies align with real-world demands and contribute to meaningful, sustainable outcomes in housing availability and quality.

58. In addition to affordability, it is crucial to identify how housing market dynamics may create insecurity, such as forced evictions or discriminatory practices that disproportionately impact marginalized communities. Recognizing these factors helps address the root causes of housing-related insecurities, including issues of insecure tenure rights, ensuring that interventions support equitable access to stable housing. Moreover, understanding market drivers that push individuals into homelessness provides insights into economic and social pressures that require policy action, such as rental cost burdens or barriers to affordable homeownership. As such, when housing markets fail, individuals and households are at risk of living unsheltered, which leads to pressures on other social and health services, and affecting long-term social and economic potential of individuals, particularly minors. Finally, assessing the compatibility of housing design with functional needs – for example, ensuring accessible housing for elderly and disabled individuals – highlights the importance of accessible design of units in the housing market. Together, these insights are essential for fostering a housing market that is accessible, secure, and supportive of diverse population needs.

II.A.3. Evaluate Economic Impact

59. Measuring and evaluating the economic impact of housing is critical for understanding its far-reaching influence on national and household financial health. Housing plays a foundational role in economic stability and growth by providing a cornerstone for individuals' economic security and acting as a stabilizing force during economic fluctuations. A stable housing market fosters

confidence and security among households, reducing financial distress and supporting consistent consumption patterns. By ensuring access to affordable housing, economies can maintain a solid base that mitigates the effects of economic downturns and helps stabilize other sectors.

60. The role of residential real estate in building wealth is significant, as housing often represents the largest asset owned by households and is central to wealth accumulation over time. Homeowners often rely on their home as a source of savings to help support their retirement or bequest to children. At the same time, households and firms invest in housing to support the construction of rental housing, whether intended for the primary, secondary, or short-term rental market. Governments also act as investors directly in the form of construction of social and affordable housing, or indirectly by supporting the non-profit sector in the construction or acquisition of social and affordable housing. There is a need for a comprehensive understanding of the behavior, incentives and risk taking of those actors, ultimately to support the design of policies that can lead to the supply of housing that meets the needs of households.

61. Analyzing the housing sector's contribution to GDP provides insights into how residential real estate bolsters the economy, through both direct impacts—such as construction activity and associated industries—and indirect effects, like consumer spending tied to homeownership. The flow of capital into residential construction sector is a major input to housing supply and has relationships with investments going into other sectors in the economy, thus indirectly influencing the capital stock available for innovation and jobs. Furthermore, the housing market drives employment and income, particularly within construction, real estate, finance, and related services. Understanding how housing influences these areas allows policymakers to craft economic strategies that capitalize on housing's economic potential while addressing disparities in access and affordability, ensuring that housing remains a pathway to wealth and stability for all.

II.B. Policy Development and Evaluation

62. Policymakers rely on accurate and timely data to craft interventions that can significantly improve people's lives, highlighting the crucial role of a comprehensive housing statistics framework in public administration. Housing policies profoundly impact the availability, quality, and affordability of housing. A well-structured housing statistics framework aids policymaker in various aspects detailed below.

II.B.1. Designing Targeted Interventions

63. Designing targeted interventions in housing requires policies that address the distinct needs of various populations, creating solutions that are both effective and equitable. Tailored policies can better serve groups such as low-income families, seniors, and rural communities, whose housing challenges may vary significantly. For instance, low-income families benefit from affordable housing initiatives, while seniors often need accessible housing options that accommodate mobility or healthcare needs. Similarly, rural communities may face unique challenges related to infrastructure and limited housing options, requiring interventions that boost local housing supply and access to essential services. Targeted interventions not only aim at addressing specific needs or populations but also can help targeting specific transformations in the built environment, including

the form and quantity of housing supply, renovations and upgrades. Additionally, these targeted policies must tackle pressing issues like homelessness, housing discrimination, and substandard living conditions, ensuring that vulnerable individuals and marginalized groups are not left behind. By focusing on these specific needs, policymakers can create housing solutions that promote inclusivity, stability, and improved living conditions across diverse demographics.

64. Social acceptability of housing policies and construction projects are key to effective and timely interventions to address housing issues. In other words, populations may sometimes oppose housing policies or projects that have an opportunity to affect the form of the built environment they live in, or the makeup of local populations[5]. As such, a conceptual framework can provide the tools to develop new indicators that can inform on the acceptability of interventions. For example, coherent and integrated data can provide information on revealed preferences (i.e. through transaction and rent price data) of actors affected by past policy interventions.

II.B.2. Evaluating Policy Outcomes

65. Measuring the effectiveness of existing housing programs is essential for understanding their impact and ensuring resources are used effectively to meet housing needs. The housing domain also typically generates vast amounts of administrative data, such as land registries, property assessment rolls, tax information, housing program beneficiaries or evictions tribunal rulings that can be leveraged and integrated to measure the outcomes of policies and programs. By evaluating these programs with data-driven insights, policymakers can identify strengths and weaknesses, enabling them to refine strategies that directly benefit communities. For instance, assessing outcomes such as increased affordability, reduced homelessness rates, or improved housing quality can reveal whether specific initiatives are meeting their intended goals and whether they represent an efficient use of resources. Additionally, ongoing data collection allows for timely adjustments, helping to adapt policies in response to changing economic or demographic trends. This responsive, evidence-based approach ensures that housing policies remain relevant, effective, and capable of addressing evolving challenges, ultimately leading to stronger, more sustainable housing solutions for all.

II.B.3. Forecasting and Planning

66. Effective forecasting and planning are crucial for preparing housing markets to meet future demands driven by demographic shifts and economic trends. Anticipating housing needs involves analyzing factors such as population growth, aging demographics, and income trends to ensure that adequate housing is available for all segments of society. By understanding these trends, policymakers can proactively enact policies at the local level, such as zoning changes, to address potential shortfalls in housing supply and avoid crises in affordability and access. This forward-thinking approach also extends to sustainable urban and rural development, where careful planning helps balance growth with environmental and infrastructural considerations. In urban areas, sustainable planning can prevent overcrowding and enhance livability, while in rural regions, it can support community development by providing essential housing and services. Information on projected demographic growth is often available at national and sub-national levels, but there is a need to integrate additional projection components, such as economic and climate considerations, to

[5] This is often colloquially referred to as “NIMBYism”, in reference to “Not In My Back Yard”.

better reflect potential future scenarios and support local planning. Together, these efforts ensure that housing markets can accommodate population changes in a way that is both economically viable and environmentally responsible, fostering resilient and inclusive communities.

II.C. Socio-Economic Equity, Inclusion, and Mobility

67. The framework serves as a foundational tool for promoting fairness and equity in housing, ensuring that all individuals, regardless of their background, have access to housing that meets their needs.

68. Housing is a critical determinant of socio-economic equity. Access to safe, affordable, and quality housing is a key factor in reducing poverty and enhancing social inclusion. A housing statistics framework facilitates various aspects detailed in the next sections.

II.C.1. Identifying Disparities and promoting Social Inclusion

69. Highlighting disparities in housing conditions among different socio-economic groups is essential for understanding how access to quality housing varies across income levels, education, and employment status. These disparities often reflect deeper social inequalities, with lower-income households frequently facing overcrowded, substandard, or unsafe living conditions compared to more affluent groups. By identifying these differences, policymakers can prioritize interventions that address the most urgent needs, ensuring that all communities benefit from safe, affordable, and dignified housing.

70. Understanding the barriers to adequate housing faced by marginalized communities sheds light on the unique challenges encountered by groups such as racial minorities, immigrants, and people with disabilities. These groups often encounter systemic obstacles like discrimination, limited access to financing, and a lack of affordable options in accessible locations. By examining these barriers, housing policies can be designed to break down these obstacles and create a more equitable housing landscape, where everyone has the opportunity to secure adequate shelter.

71. Ensuring that housing development projects consider the needs of all community members, including vulnerable groups, is key to building inclusive communities. This approach requires developers and planners to account for accessibility, affordability, and culturally adequate designs that meet the unique needs of diverse populations. Inclusive planning ensures that housing developments are welcoming and usable by everyone, from families with young children to seniors and individuals with disabilities, thereby fostering a sense of belonging and inclusivity.

72. Supporting policies that promote diversity and inclusivity in housing markets helps create neighborhoods that reflect a broad range of social and economic backgrounds. Policies that encourage affordable housing development, combat discrimination, and support mixed-income communities foster diversity, reducing social segregation and enabling residents to live in neighborhoods that offer diverse amenities and opportunities. Promoting inclusivity in housing markets contributes to more resilient and cohesive communities, where individuals from different backgrounds can thrive together.

II.C.2. Supporting Economic Mobility

73. Assessing how housing stability influences educational outcomes and employment opportunities provides insight into the role that stable housing plays in broader life success. Secure and affordable housing allows families to focus on educational and career goals without the disruptions caused by frequent moves or financial strain. Studies have shown that children in stable housing environments perform better in school, and adults are more likely to retain steady employment, highlighting the importance of housing stability for individual and community advancement [25, 26]. The location of housing in relation to jobs and educational facilities can also influence access to those, thus leading to matching between aspirations, skills and opportunities.

74. Considering housing as a tool for economic empowerment and mobility involves recognizing that homeownership and access to affordable rentals can serve as a foundation for building wealth and achieving financial independence. Parental assistance to support access to homeownership for their children also plays a role in intergenerational social mobility. Policies that support affordable homeownership opportunities and stable rental options enable individuals to invest in their future, build equity, and improve their socio-economic status. By framing housing as a pathway to economic mobility, governments and organizations can implement strategies that empower individuals and families to progress economically and contribute more fully to their communities.

II.D. Global Challenges and Local Solutions

75. The universality of housing challenges, from urban overcrowding to rural inadequacies, necessitates a framework that can adapt global knowledge to local contexts. This adaptability allows for:

II.D.1. Customizing Solutions

76. Tailoring global best practices to fit national and local social, economic, and environmental conditions is essential for creating effective housing solutions that are both relevant and impactful. Housing strategies that work well in one country may not necessarily succeed in another due to differences in legislation, social and economic structures, and environmental factors. By adapting successful global practices to align with local contexts, policymakers can address housing needs in a way that respects cultural traditions, aligns with available resources, and responds to environmental realities. This approach ensures that housing solutions are practical, sustainable, and widely accepted by local communities.

77. Developing localized strategies that address specific local housing issues allows policymakers to focus on the unique challenges within their own regions. For example, urban areas may face issues like overcrowding and high housing costs, while rural areas might struggle with limited infrastructure and a lack of affordable housing. Localized strategies enable governments and organizations to address these distinct needs with targeted interventions, such as incentives for affordable housing in cities or infrastructure improvements in rural areas. This customized approach promotes effective solutions that are directly relevant to the communities they serve, improving overall housing conditions.

II.D.2. Enhancing International Cooperation

78. Facilitating the exchange of knowledge and best practices among nations fosters a collaborative approach to addressing global housing challenges. By sharing insights on what has worked and what has not, countries can learn from each other's successes and setbacks, identify blind spots, and ultimately develop more effective housing policies. This cooperation allows nations to leverage collective expertise, enhance innovation, and apply diverse strategies to housing issues that are often universal in nature. Through global forums, joint research, and collaborative projects, international cooperation accelerates the development of housing solutions that benefit communities worldwide.

79. A housing statistics framework not only supports national decision-making but also strengthens global efforts to improve housing conditions, underscoring the interconnectedness of housing issues worldwide. Housing challenges—such as affordability, sustainability, and accessibility—are often shared across borders, making it essential for countries to work together in addressing these issues. A unified framework enables consistent data collection and analysis across nations, facilitating a deeper understanding of global housing trends and helping countries align their strategies with broader international goals. This approach fosters a cohesive, coordinated effort that enhances housing conditions globally, contributing to shared objectives like sustainable development and social equity.

II.D.3. Role in Supporting SDGs

80. An international housing statistics framework should aid in monitoring and achieving SDG Goal 11 by providing a comprehensive and coherent multifaceted approach as compared to a traditional fragmented perspective. Such a broad framework aims to make cities and human settlements inclusive, safe, resilient, and sustainable. By providing data on urban housing conditions, infrastructure, and sustainability, the framework should support planning and development efforts that contribute to healthier and more sustainable urban environment.

81. Beyond SDG 11, the framework should address various other goals, such as reducing poverty (Goal 1), including the commitment to ensure security of tenure for men and women (Indicator 1.4.2), ensuring healthy lives (Goal 3), and promoting gender equality (Goal 5), Water and Sanitation (Goal 6), affordable and clean energy (Goal 7), and reduce inequalities (Goal 10), by providing the data needed to address disparities in housing quality and, affordability and location that affect these areas. Beyond such temporary and voluntary commitments under the Agenda 2030, states bear a binding obligation to prohibit, monitor, assess and remedy impacts of forced evictions, and report on their consequences

III. Components of an International Housing Statistics Framework

III.A. Defining the Housing Statistics Framework

82. A housing statistics framework serves as a foundational structure for establishing the scope, delineating, and organizing the relevant concepts of the housing system. A framework thus enables the coherent and consistent collection, organization, presentation, and analysis of data related to housing. It is designed to support various stakeholders in understanding the complexities of housing markets, conditions, and policies.

83. Defining a housing statistics conceptual framework involves setting up a structured, logical, and comprehensive model that encapsulates basic concepts, definitions and indicators related to the economic, social and environmental aspects of housing. This setup not only enhances the understanding and analysis of housing data but also supports effective policymaking and public discourse on housing issues and addresses the current fragmented perspectives on housing data. By providing a clear and standardized approach, a well-defined framework ensures that housing statistics are robust, reliable, and relevant, catering to the diverse needs of all stakeholders involved in housing and urban development.

III.A.1. What does a Housing Statistics Framework Entail?

84. A framework in housing statistics provides a structured approach to organizing and interpreting concepts related to housing, allowing for a more systematic and comprehensive understanding of housing issues and dynamics over time and location. This framework serves as a foundational model that includes essential components such as key concepts, metrics, and methodologies, all of which are critical for collecting, analyzing, and reporting data effectively. By defining core concepts like affordability, housing quality, and homelessness, the framework establishes a consistent language and set of standards, ensuring that stakeholders across different regions and contexts interpret these terms in the same way. This consistency is crucial for accurate comparisons and analyses, as it reduces the risk of misinterpretation and allows for a clearer understanding of housing conditions across studies and reports.

85. Indicators are another integral part of this framework, providing quantifiable measures to assess various aspects of the housing sector, including affordability indexes, homeownership rates, and the annual number of housing units constructed. These metrics help translate abstract concepts into tangible data points that can be tracked over time, revealing trends and informing policy decisions. Additionally, standardized methodologies for data collection—such as surveys, censuses, and the use of administrative records—enhance the reliability, validity, and comparability of housing data. By employing consistent methods, the framework ensures that data collected from different regions or time periods remain comparable, enabling policymakers and researchers to identify patterns, evaluate the effectiveness of policies, and make informed decisions. Together, these elements form a cohesive system that strengthens the analysis of housing markets and supports evidence-based policy development.

III.A.2. Importance of a Hierarchical Structure

86. The hierarchical structure of a housing statistics framework plays a critical role in organizing data and concepts in a clear, layered manner, making it easier to understand complex relationships within the housing sector. By clarifying these relationships, the framework demonstrates how various factors—such as economic trends, policy decisions, and social conditions—interact to shape housing supply and demand. For instance, economic factors like income levels and employment rates directly impact housing affordability and availability. This hierarchical approach allows users to see these connections, illustrating the dependencies within the housing ecosystem and helping policymakers understand the broader implications of economic and social shifts on housing markets.

87. Furthermore, a hierarchical structure enhances usability by allowing users to navigate through layers of data according to their needs. Some users may require a more aggregated or high-level overview of housing trends based on broad aggregates and headline indicators, while others, like researchers and analysts, may seek detailed, granular data to conduct in-depth studies. This layered organization enables users to access specific information with ease, making the framework adaptable to diverse use cases. Additionally, the structure facilitates analysis by providing data at different levels of detail, which is essential for trend analysis and comparison over time. By supporting both general overviews and specialized insights, the framework becomes a versatile tool that can serve various stakeholders—from government officials and urban planners to researchers and the general public—each seeking specific types of information to inform their decisions and strategies. This adaptability ensures that the framework is valuable and accessible across multiple disciplines, fostering a well-rounded understanding of housing dynamics.

III.A.3. Metadata: Sources and Methodologies Used

88. Metadata is a foundational component of a housing statistics framework, providing critical "data about the data" that enhances understanding and usability of the information collected. By offering detailed insights into the origins and quality of the data, metadata allows users to assess the credibility of the data, recognize any limitations, and accurately interpret the findings. This level of detail supports transparency in housing statistics reporting, as it clarifies where the data comes from and how it was collected, ensuring that users can trust and understand the information presented. Additionally, metadata contributes to accountability, as it allows stakeholders to verify that data collection processes adhere to standards and that the data reflects real-world conditions.

89. Within a housing statistics framework, metadata typically includes three main elements: sources, collection methodologies, and data quality. The "sources" component identifies where the data originates, whether from government reports, private sector databases, or citizen surveys. Knowing the source helps users determine the reliability of the information and understand potential biases or perspectives inherent to different data providers. "Collection methodologies" provide further context, detailing the processes and technologies used to gather the data, the frequency of data collection, and the geographic areas covered. This ensures that users understand the scope and limitations of the data. Finally, metadata on "data quality" addresses aspects like relevance, accessibility, reliability, accuracy, and timeliness, which are essential for ensuring that the data is both current and dependable. Together, these elements of metadata create a transparent, accountable,

and robust foundation for interpreting housing statistics, enabling stakeholders to make informed, evidence-based decisions.

III.B. Core Elements of the Framework

III.B.1. Economic Factors

90. The economic factors of a housing statistics framework provide a comprehensive picture of how various elements interact to shape the housing market. By analyzing supply and demand dynamics, tracking investments, and monitoring price and affordability indicators, stakeholders can make informed decisions that promote sustainable and equitable housing development. This approach not only helps in addressing current housing challenges but also in anticipating future needs and trends in the housing sector.

III.B.1.a. *Supply and Demand Dynamics*

91. Understanding the supply and demand dynamics of housing is essential for assessing the health and dynamics of housing markets. On the supply side, data on the number of housing units available, their types (such as single-family homes or apartments), condition, and location provide insights into the current capacity of the market to meet housing needs. Supply data also encompass the rate of new construction, a crucial indicator of growth in the housing sector. Factors influencing this rate, such as labor availability, construction costs, and regulatory barriers, can significantly impact how quickly and efficiently new housing becomes available. For example, high construction costs or restrictive zoning regulations can slow development, potentially leading to shortages that drive up prices and limit housing accessibility.

92. On the demand side, metrics evaluate the number of potential homebuyers or renters, along with their demographic profiles, income levels, and purchasing power. Demand is shaped by factors such as population growth, migration patterns, economic conditions, and cultural preferences. For instance, as urban areas attract more young professionals, demand for affordable, centrally located housing rises. Economic conditions like rising incomes can increase demand for homeownership, while adverse conditions may push more people into the rental market. Analyzing both supply and demand helps identify whether housing options are adequate for the population's needs or if imbalances exist, which might lead to either shortages, driving up prices, or surpluses, which can depress market values.

93. This data-driven understanding of housing supply and demand is vital for making informed policy decisions. Policymakers can use this analysis to adjust zoning laws, allocate resources for affordable housing, or introduce incentives for developers to create the types of housing in high demand. By balancing supply and demand more effectively, such policies help stabilize housing markets, prevent housing crises, and ensure a more accessible and equitable housing environment for all.

III.B.1.b. *Government and Private Sector Investments*

94. Investments in housing by the government, non-profit and private sectors play a critical role in determining the availability, affordability, and quality of housing. Government investments, including those stemming from Official Development Assistance, often focus on providing direct funding for public housing projects and offering subsidies to make housing more affordable for low-income families. These investments may include tax incentives for developers who build affordable housing, grants for first-time homebuyers, and funding for essential housing infrastructure in underserved areas. By targeting support toward these populations, government investments work to fill gaps in the market where the private sector may be less inclined to operate. Such targeted funding can help ensure that vulnerable and low-income populations have access to safe, affordable housing and that disparities in housing availability are addressed.

95. Private sector investments, on the other hand, bring capital and innovation to housing markets, driving the expansion of housing supply and the development of diverse housing options. Property developers, real estate investment trusts (REITs), and private equity funds all contribute to housing by financing new construction projects, maintaining rental properties, and managing residential portfolios. Private sector involvement is particularly important in high-demand urban areas, where there is a constant need for new housing units to accommodate population growth. Additionally, the private sector often leads in the adoption of new technologies and construction techniques, which can improve efficiency and reduce costs in housing development.

96. Tracking both public and private investments within a housing framework is essential to understanding their combined impact on housing markets. This data provides insights into how well the public and private sectors are collaborating to address housing needs and helps identify where additional support or policy adjustments may be needed to encourage further investment. By analyzing this information, policymakers can make informed decisions to optimize resource allocation, incentivize productive investments, and create a balanced approach to housing development that leverages the strengths of both sectors for maximum impact.

III.B.1.c. *Price Indicators and Affordability Metrics*

97. Price indicators and affordability metrics are vital tools for gauging the economic accessibility of housing and understanding broader trends in housing markets. Price indicators, such as median home prices, price per square foot, and the rate of price changes over time, provide insights into the current and historical values of housing in a given region. By tracking these metrics, stakeholders can observe patterns of price appreciation or depreciation, which signal the direction of housing markets. Rapid increases in home prices, for instance, may indicate a hot market with high demand but can also suggest potential affordability issues, especially if prices rise faster than wages. Conversely, price stagnation or depreciation can highlight economic downturns or reduced housing demand, informing policymakers about the health and sustainability of local housing markets.

98. Affordability metrics offer a complementary perspective by evaluating the relationship between housing costs and household income, providing a measure of whether homes in an area are financially within reach for typical residents. A common affordability metric is the housing cost-to-income ratio, with housing generally considered affordable if it consumes no more than 30% of a

household's income. This ratio helps identify regions or populations that might be disproportionately burdened by housing costs, where families may have to spend a large share of their income on shelter, leaving less for other essentials like food, healthcare, and education. These affordability metrics are essential for policymakers as they inform targeted interventions, such as housing subsidies or incentives for affordable housing development, to promote equitable access to housing. Together, price indicators and affordability metrics provide a comprehensive view of housing economic accessibility, enabling data-driven decisions to support housing affordability and stability.

III.B.2. Social Factors

99. The social factors within a housing statistics framework are essential for painting a complete picture of the housing landscape from a societal perspective. They provide valuable insights into the demographic and household dynamics that drive housing demand and reveal the social outcomes associated with different housing conditions. By integrating considerations of homelessness, overcrowding, and social housing, the framework ensures that housing policies and programs are effectively aligned to enhance the social well-being of the community. This comprehensive approach is crucial for developing sustainable, inclusive, and responsive housing strategies that cater to the needs of diverse populations and facilitate the development of targeted interventions aimed at improving housing conditions and accessibility for all societal segments, especially the most vulnerable.

III.B.2.a. *Demographics, Household Dynamics, and Social Outcomes*

100. The demographics and household dynamics aspect of a housing statistics framework provides valuable insights into the types of housing that different population groups need and how they are impacted by housing policies and market conditions. Demographic data—such as age, gender, race, income levels, and migration patterns—helps identify which population segments are growing and may need more housing resources, as well as which groups face specific challenges. For example, elderly individuals often require accessible housing options due to mobility limitations, while younger populations may seek affordable entry-level housing as they enter the workforce. By tracking these demographic trends, policymakers can anticipate shifts in housing demand and ensure that there are sufficient resources to meet the needs of diverse communities.

101. Rapid urban growth influences housing demand, land use and infrastructure needs, it also greatly affects the capacity of governments to provide such. Rapid urban growth can outpace any effort to provide sufficient serviced land for housing and infrastructure for the required urban expansion. However, urban growth patterns are not equally distributed across a national territory; understanding the growth rates of different urban centers in relation to their housing needs can help build national urban policies interconnected with housing policies.

102. Household composition also plays a crucial role in shaping housing demand and preferences. Single-parent families, multi-generational households, and single-occupancy homes all have unique housing requirements that influence the types of units in demand. For instance, larger, multi-generational households may require more spacious homes with additional bedrooms and communal spaces, while single-occupancy households often prefer smaller, more affordable units. Recognizing

these different needs allows developers and policymakers to design housing options that align with the diverse lifestyles and family structures present within a community.

103. Since housing experiences and unmet housing needs are often correlated with socioeconomic and demographic characteristics of households, specific attention in the framework is given to gender, ethnic origin, income and immigration status. This allows for the understanding of housing outcomes for vulnerable and marginalized groups and can help differentiate the realization of housing aspirations and the right to adequate housing for different groups.

104. Social outcomes, too, are closely tied to housing quality and affordability, as stable housing has a profound impact on educational performance, employment opportunities, and health. Poor housing conditions, such as overcrowding or substandard construction, can lead to health issues, reduce life satisfaction, and limit social mobility. On the other hand, stable and affordable housing fosters a supportive environment for personal and professional growth, improving individuals' quality of life and contributing to greater social equity. Analyzing these social factors helps stakeholders understand the broader societal impacts of housing and informs the development of policies that promote well-being and support diverse community needs. By focusing on these interrelated demographic, household, and social dimensions, housing policies can be more responsive to evolving community dynamics, fostering inclusive and sustainable housing development.

III.B.2.b. *Issues of Homelessness, Overcrowding, and Social Housing*

105. Homelessness, overcrowding, and social housing represent some of the most urgent challenges in the housing sector, directly impacting the well-being and stability of countless individuals and families. Addressing homelessness requires a thorough understanding of its scope, including data on the number of homeless individuals, whether they are sheltered or unsheltered, and the duration and frequency of homelessness episodes. This data allows for a clearer picture of both temporary and chronic homelessness, which are often driven by factors such as economic instability, high housing costs, and the lack of affordable housing options. By differentiating between types of homelessness, policymakers and service providers can tailor interventions to meet the specific needs of various groups, whether through emergency shelters for those experiencing temporary homelessness or long-term housing support for individuals facing chronic homelessness.

106. Overcrowding is another significant concern, as it reflects a lack of sufficient housing and has serious implications for residents' health and quality of life. Overcrowded living conditions, where households have more occupants than rooms, can create significant challenges for residents and are often viewed as undesirable due to their potential impact on well-being. Such conditions can increase the spread of infectious diseases, create high-stress environments, and negatively affect children's educational outcomes. By analyzing overcrowding trends and their underlying causes, housing frameworks can guide the development of policies that address these inadequacies, such as increasing the supply of affordable, appropriately sized housing units or providing financial assistance to reduce the housing cost burden for larger families.

107. Social housing plays a critical role in providing affordable living options to low-income or vulnerable populations, offering a stable foundation for individuals who might otherwise be at risk

of homelessness or overcrowding. Effective social housing initiatives not only increase access to affordable housing but also promote social stability and inclusion. A comprehensive framework should track the availability, condition, and geographic distribution of social housing units, along with assessing the success of related support programs. This data is essential for determining where social housing is most needed, evaluating the adequacy of current offerings, and identifying areas for improvement. By addressing homelessness, overcrowding, and social housing needs, policymakers can work toward a more equitable and supportive housing environment that fosters the well-being and security of all community members.

108. Assessing the scale and nature of homelessness is crucial to the understanding of the adverse outcomes of housing systems. This includes data on the number of homeless individuals, whether they are sheltered or unsheltered, the duration of homelessness episodes, and the factors contributing to homelessness entries and exits, such as economic or social factors, barriers to accessing housing (i.e. immigrant or refugee status). Frameworks[6] need to track both temporary and chronic homelessness to tailor solutions effectively.

III.B.3. Environmental Factors

109. The environmental factors within a housing statistics framework play a crucial role in ensuring that housing development is sustainable and environmentally responsible. By addressing the impact of housing on natural surroundings and incorporating sustainability practices and risk management, this framework helps create a balance between meeting human needs and preserving the environment. This comprehensive approach not only protects natural ecosystems and ensures environmental stewardship but also promotes healthier, more resilient communities that are capable of thriving in an ever-changing global environment.

III.B.3.a. *Impact of Housing on Natural Surroundings*

110. Housing is influenced and shaped by the unique features of the local landscape. Conversely, housing development significantly influences land use patterns, often leading to the transformation of agricultural, forested, or other natural areas into residential zones. This conversion can result in habitat loss, reduced biodiversity, and changes to ecosystems, as wildlife is displaced, and natural landscapes are altered. Tracking these shifts in land use and their environmental consequences is essential to understanding the broader ecological impact of housing expansion. By collecting and analyzing this data, policymakers and planners can work toward more sustainable land management practices that balance the need for housing with the preservation of natural surroundings, reducing unnecessary disruption to habitats and promoting biodiversity.

111. Resource consumption is another key aspect of housing's environmental impact, as buildings require substantial amounts of water, energy, and raw materials both during construction and throughout their lifespan. A comprehensive framework should collect data on the types and volumes of resources used in housing construction, maintenance, and utility consumption to assess the

[6] The United Nations Secretary-General Assembly Report A/78/236 recommends a broad definition and called for the international community to work on an agreed operational definition of homelessness, encompassing: (a) people living on the streets, (b) those in temporary accommodation or shelters and (c) those in severely inadequate housing or involuntarily sharing accommodation.

sector's resource footprint. This information helps identify opportunities to promote resource efficiency, reduce waste, and adopt sustainable practices, ultimately supporting more sustainable housing solutions that minimize depletion of natural resources.

112. The construction and occupation of housing also generate significant waste and pollution, including debris from building activities, household waste, and emissions from heating and cooling systems. Monitoring these outputs is essential for understanding housing's environmental footprint and for implementing measures to mitigate pollution. By tracking waste generation and emissions, policymakers can develop guidelines to reduce construction waste, encourage recycling, and improve energy efficiency in residential areas, all of which contribute to lowering the sector's environmental impact.

III.B.3.b. *Sustainability Practices and Risk Exposures*

113. Sustainability practices in housing play a vital role in reducing environmental impact and creating more resilient communities. Energy efficiency is a key component, encompassing the use of energy-saving appliances, materials, and design features, such as improved insulation and passive solar heating, that reduce energy consumption. These practices not only lessen the environmental footprint but also help reduce operating costs for homeowners, making housing more affordable over time. Similarly, incorporating green building materials, those that are durable, recyclable, or made from renewable resources, minimizes the environmental impact of construction and promotes long-term sustainability in the housing sector. Additionally, implementing water management systems, such as rainwater harvesting and efficient plumbing fixtures, is especially crucial in regions facing water scarcity, allowing communities to conserve this vital resource.

114. Risk exposures, such as vulnerability to natural disasters and climate change, are increasingly critical considerations in housing development. Homes must be designed and constructed to withstand environmental risks, including earthquakes, floods, hurricanes, and wildfires, to ensure the safety and resilience of communities. Tracking data on housing preparedness for these risks helps policymakers and developers prioritize safe building practices and materials that are suited to local conditions. Additionally, climate change presents growing challenges, as housing faces risks from extreme weather events, sea-level rise, and shifting temperatures. Monitoring these climate-related risks allows communities to plan for future impacts and implement adaptation strategies, such as building in resilient locations or enhancing infrastructure to cope with changing conditions. Ensuring that housing is equipped to handle these risks is essential for the safety, security, and sustainability of residential areas in a rapidly changing environment.

IV. Data Collection and Integration

115. Proper data collection and integration are pivotal for the success of a housing statistics framework. This section explores the sources of housing data, and the challenges associated with collecting and integrating this data to ensure it is accurate, comprehensive, and useful.

IV.A. Sources of Data

116. The framework leverages multiple data sources to provide a holistic view of the housing landscape:

IV.A.1. Surveys and Censuses

117. Both surveys and censuses are crucial for capturing detailed and accurate data directly from the population, providing a foundational layer of information for the housing statistics framework.

118. Surveys are vital for collecting detailed information directly from households about their living conditions, expenses, and satisfaction with their housing. They can be specifically tailored to gather data on particular aspects of housing, such as affordability, quality, and accessibility.

119. Conducted typically every five or ten years, censuses provide comprehensive data covering the entire population. They help in collecting consistent information across all regions, making it possible to perform broad demographic and socioeconomic analyses related to housing.

IV.A.2. Administrative and Financial Records:

120. These include data from both privately operated companies and local, regional, or national governments regarding property registrations, building permits, property tax rolls, admission information from homeless shelters and social services providers, rulings from evictions tribunals, social housing allocations, and other housing-related services. These data are invaluable for understanding the supply side of the housing market and governmental interventions.

121. Data from financial institutions, such as banks and mortgage companies, provide insights into the financing of housing, including the prevalence and characteristics of mortgages, lending rates, and default rates.

122. Administrative data can also offer ways to replace survey data, or to improve upon them. For example, survey data on rent levels can pose problems when computing rent price indices, given the fact that paid rents reflect past contract prices rather than current market prices [27]. Leveraging administrative data from rental providers can help address such limitation.

IV.A.3. Big Data and Remote Sensing

123. Advanced technologies offer dynamic, large-scale data that can enhance traditional data sources, providing a more detailed and timely understanding of the housing sector. Housing is intrinsically local and requires a fully disaggregated perspectives to inform on dynamics, and alternative data can help fill gaps and provide spatial and complete perspectives.

124. Leveraging data from online platforms, social media, and other digital sources can provide real-time and detailed insights into housing market trends, buyer and seller behaviors, and even predictive analytics on market directions.

125. Satellite imagery and aerial photography help in assessing land use changes, urban development patterns, and environmental factors affecting housing, and vice versa. This technology is particularly useful for monitoring developments in remote areas and disaster impacts on housing.

IV.B. Challenges in Data Collection

126. While collecting data from diverse sources enhances the richness and utility of the housing statistics framework, it also presents significant challenges. Addressing these challenges is fundamental to maintaining the integrity and utility of the housing statistics framework. Effective data management practices and ongoing quality control are essential to ensure that the data collected is reliable, timely, and complete, supporting informed decision-making and effective housing policies.

IV.B.1. Integrating Diverse Data Sources

127. Successfully integrating diverse data streams is crucial for creating a unified, comprehensive view of the housing market, allowing for more effective analysis and policymaking.

128. The integration of varied data sources involves aligning data that differ in format, granularity, and collection methods. This requires robust data management strategies, including the development of standardized data formats and protocols for data integration.

129. Ensuring compatibility among data sources often necessitates sophisticated data processing technologies and expertise in data science, which can be resource intensive.

IV.B.2. Ensuring Data Quality and Reliability

130. Data must accurately reflect the housing conditions and market dynamics. This involves rigorous validation and verification processes to correct any errors and ensure the data represents real-world scenarios faithfully.

131. The relevance of housing data depends on its currency. Delays in data collection and processing can lead to outdated information, making it less useful for decision-making. Ensuring that data are comprehensive and cover all necessary aspects of housing is essential. Missing data can lead to skewed analyses and misguided policy interventions.

132. Administrative data pose their own set of challenges, including the monetization and privatization of those holdings, and country-specific legal, data protection and privacy frameworks. Moreover, since administrative data are not created to produce official statistics, they may be of poor quality, including timeliness and completeness, and can require significant transformation and processing efforts.

V. Case Studies and Examples

133. Relatively few countries have developed and implemented comprehensive conceptual frameworks for housing data. Statistics New Zealand has published relevant reports, including a framework to define, conceptualize and measure housing quality [28] and a compendium on the intersection of housing and people [29]. The OECD has also recently published reports outlining key housing policy and measurement issues, including on the intersection of climate and housing domains [28, 29].

134. This section presents recent case studies from Canada and Australia on the development of new conceptual and measurement approaches for housing.

V.A. Case study: Canada

135. Like many countries, Canada has historically been relying on its Census of Population and national accounts statistics to produce information on housing. Starting with the 1991 Census of Population, Canada has gradually improved the quality of information produced on the subject through methodological advances, administrative data integration, and the development of new concepts and new survey methods. In parallel with major policy efforts to address housing issues, Statistics Canada (StatCan) launched new statistical programs in 2017 to address data gaps relative to social and affordable housing, housing finance and homeownership, among others. That diversification and sophistication of statistical methods, along with the emergence of new issues and concerns – such as the impact of climate change on housing and rapid demographic changes, created the need for a coherent approach to the production, dissemination, and analysis of housing statistics.

136. In 2023, StatCan initiated the development of a new conceptual framework for housing statistics. That framework – which is still being developed – brings together the social, economic and environmental lenses to articulate measurements of housing as a system. It recognizes the complexity of the housing domain, as well as the fact that the traditional approaches – where housing is seen as a factor rather than an outcome – can be inadequate for the scale of housing challenges in Canada. The framework has also been elaborated to facilitate the interface between other existing frameworks, such as Canada's Quality of Life framework and the SNA.

137. Figure 1 shows a high-level representation of the factors brought together by StatCan's housing conceptual framework. It describes the societal factors as different levels of aggregation and interaction of individuals – that is in the way they form households, communities and institutions, and the way those actors act individually and jointly. The economic factors in the framework represent markets – where individuals, businesses and governments take decisions and trade, and where prices are set. Finally, the environment factor calls upon the notion of the physicality of housing, its location and features, as well as its interaction with other built and natural environment elements. Each factor overlaps with the others, to express the notion that outcomes and drivers ought to be analyzed with approaches that leverage housing concepts, definitions and measurements reflective of the three domains.

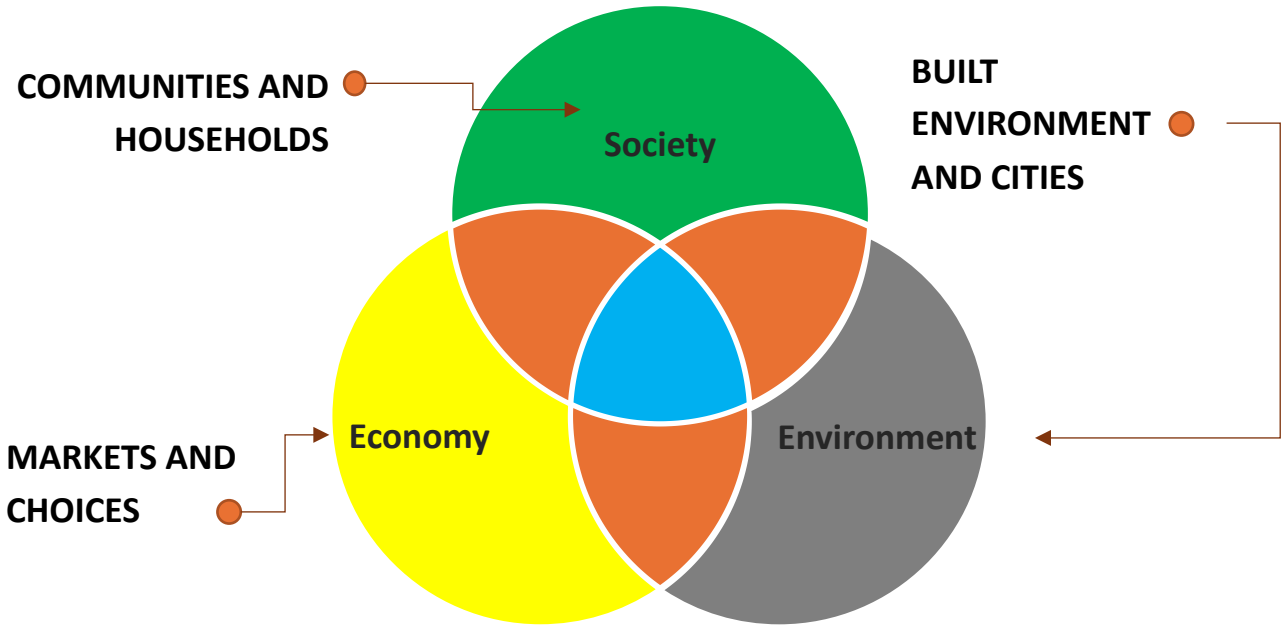

Figure 1: Canada's housing framework as a confluence of factors

138. The framework serves the purpose of identifying indicators – and the logical relationship between those indicators – necessary for the measurement and analysis of the relevant exogenous and endogenous factors driving housing outcomes. It is being used to map the concepts to data holdings, whether they are produced by StatCan or by other public or private organizations. That mapping serves as a tool to help prioritize and facilitate conceptual and data developments. It is also being used to guide analytical work with the purpose of producing insights, beyond the measurement of level changes in specific variables, and to frame issues in their wider context.

139. There are two representations of Canada's housing framework: the core concepts model and the comprehensive model. The former serves the purpose of delineating and establishing relationships between core concepts, as well as organizing broad programmatic areas of subject matter expertise at StatCan. The latter representation serves the purpose of situating core concepts in relation to the broader social, economic and environmental domains. It is a tool used to allow for in-depth research and data development. The core model identifies a set of concepts that ought to be monitored regularly to provide tactical information on the evolution of the housing domain. In contrast, the comprehensive model focusses on elements that may not require as frequent monitoring and that can provide strategic information on mechanisms operating in the housing system.

V.A.1. Core housing concepts and the scope of housing statistics in Canada

140. Figure 2 below shows the scope of housing statistics in Canada. It aims at providing a coherent view of core housing concepts across domains. Central to the core model is the idea that housing is fundamentally about the interactions between dwellings and households – some households have more than one dwelling, some have none – and identifies key macroeconomic considerations. The model proposes the view that housing markets are imperfect and can produce adverse outcomes, and that there are distinct relationships between core dwelling- and household-related concepts. Supply and demand elements focus on the key units of analysis, domains and concepts, which feed national output and macroeconomic measurements.

141. The core model identifies select concepts that are central and require frequent monitoring. It also suggests that forms of future supply (i.e. structures under construction but not yet suitable for occupation) and unmet demand (i.e. unhoused populations and those whose housing needs are unmet) are central to the understanding of housing dynamics.

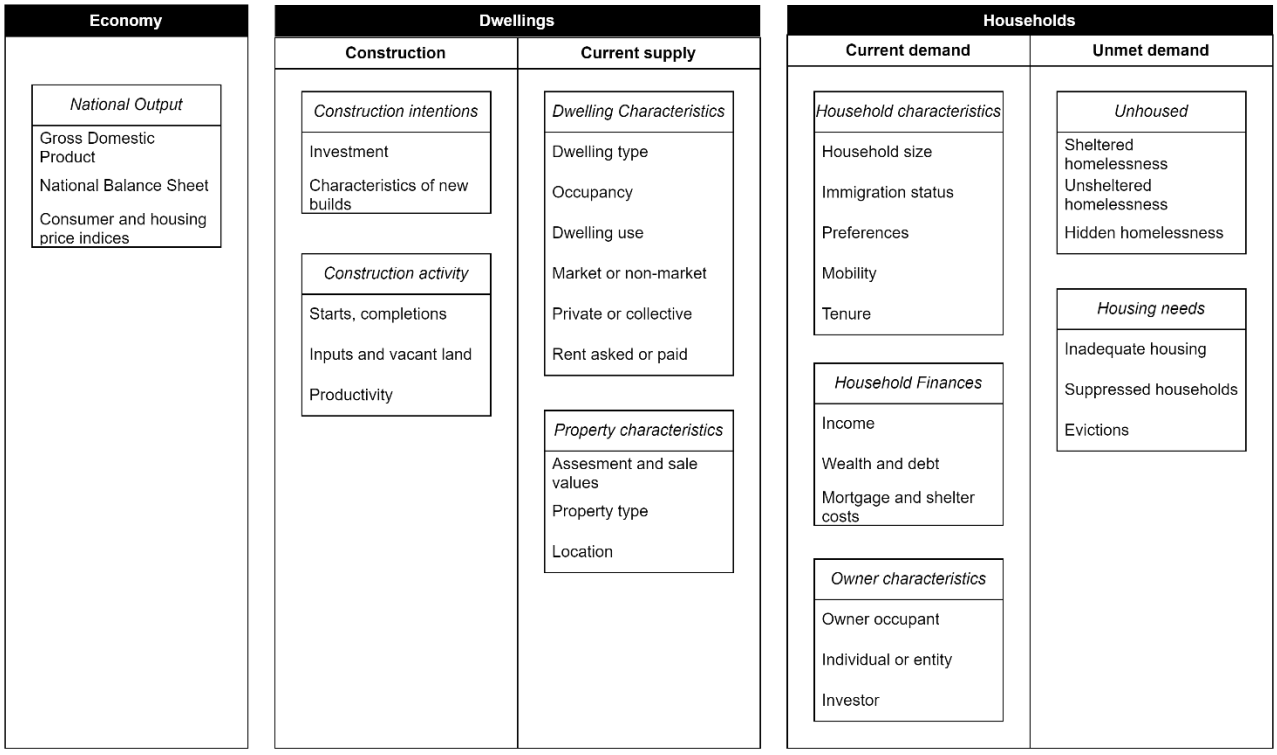

Figure 2: The scope of housing statistics in Canada

142. Figure 8 in appendix further details the relationships between dwellings and households in a hierarchical structure. It provides an approach to the fundamental functions of housing – coherent with the SNA – being that housing provides shelter and investment services for those who occupy dwellings and/or own them. It is a complete model, in the sense that the whole population and dwellings are allocated to specific mutually exclusive classifications. It details concepts that traditionally have been less in focus (i.e. vacant units, asking rents), and includes concepts that have historically been less central to the understanding of housing, like homelessness, corporate landlords and those who live in collective dwellings (i.e. institutions, long-term care, etc.).

V.A.2. Canada's comprehensive housing model

143. The comprehensive model, shown in Figure 3, Figure 4 and Figure 5 below, expands the core model into social, economic and environmental factors. Each factor is then disaggregated further and laid out in four Stages. The stages are groups of concepts and are used to organize and establish a logical sequence between concepts. The framework also uses a degree of simplification to avoid the repetition of concepts, while fully acknowledging the importance of "feedback loops" within the system, as well as the omnipresence of certain concepts[7]. The first stage acts as starting point, listing concepts that are largely exogenous, but not exclusively. The last Stage borrows concepts from Canada's Quality of Life framework, and conveys the idea that housing matters most in the way it impacts individual and collective wellbeing.

Social factors

144. Figure 3 displays the detailed concepts nested under the social factors of the framework. The first stage brings about the standard components of demographic growth as the starting point for housing demand by households. It also introduces the concept of suppressed housing as mean to identify the importance of latent housing demand, whether it be motivated by high interest or high prices environments, or both. Individual preference and expectations are also featured in the first stage, and it highlights the importance of that concept, in aggregate, on households' willingness to pay for housing and how expectations about the future impact contemporary prices.

145. Common to the three factors, Stage 1 features government action in recognition of the key role governments plays on all facets of the framework, while also highlighting difficulties of obtaining detailed information on government housing programs and their beneficiaries.

146. In Stage 2, demographic components collapse into growth and aging, and in resulting tenure status for households – whether they own, rent, and the way they occupy their dwelling (i.e., formal agreement, informal setting, traditional rights, etc.). Stage 3 represents the collective results of individual agglomerating in locations in relation to their housing situation, along with overall demographic change. It contains the concepts of population clustering, an idea that is intricately linked to how ownership and rental costs leads to sorting of population across the income distribution. That sorting, and the heterogenous distribution of households is associated with social

[7] Prices, interest rates and demographic changes transcend several domains, but are mentioned only once.

inclusion, diversity and segregation of individuals and communities. Similarly, segregation and exclusion of social and economic groups through housing mechanisms can be associated with crime and social unrest, and that concept is included in Stage 3.

147. Since the location of one's home and the cost paid for shelter influences economic and social opportunities, as well as the capacity to save and build wealth, Stage 3 also contains the concept of social and economic mobility in relation to housing. The makeup of communities and neighborhood changes as households move and new residential structures are built. There are however instances where existing inhabitants may show opposition to such changes, as conveyed by the concept of social acceptability of new housing (i.e., local opposition to zoning changes, to new social housing).

148. The last stage gathers key quality of life domains influenced by the social factors of housing. Given the financial importance of housing in households' budgets, and its incidence on the location of individuals in relation to their jobs, families and social connections, it can influence the extent to

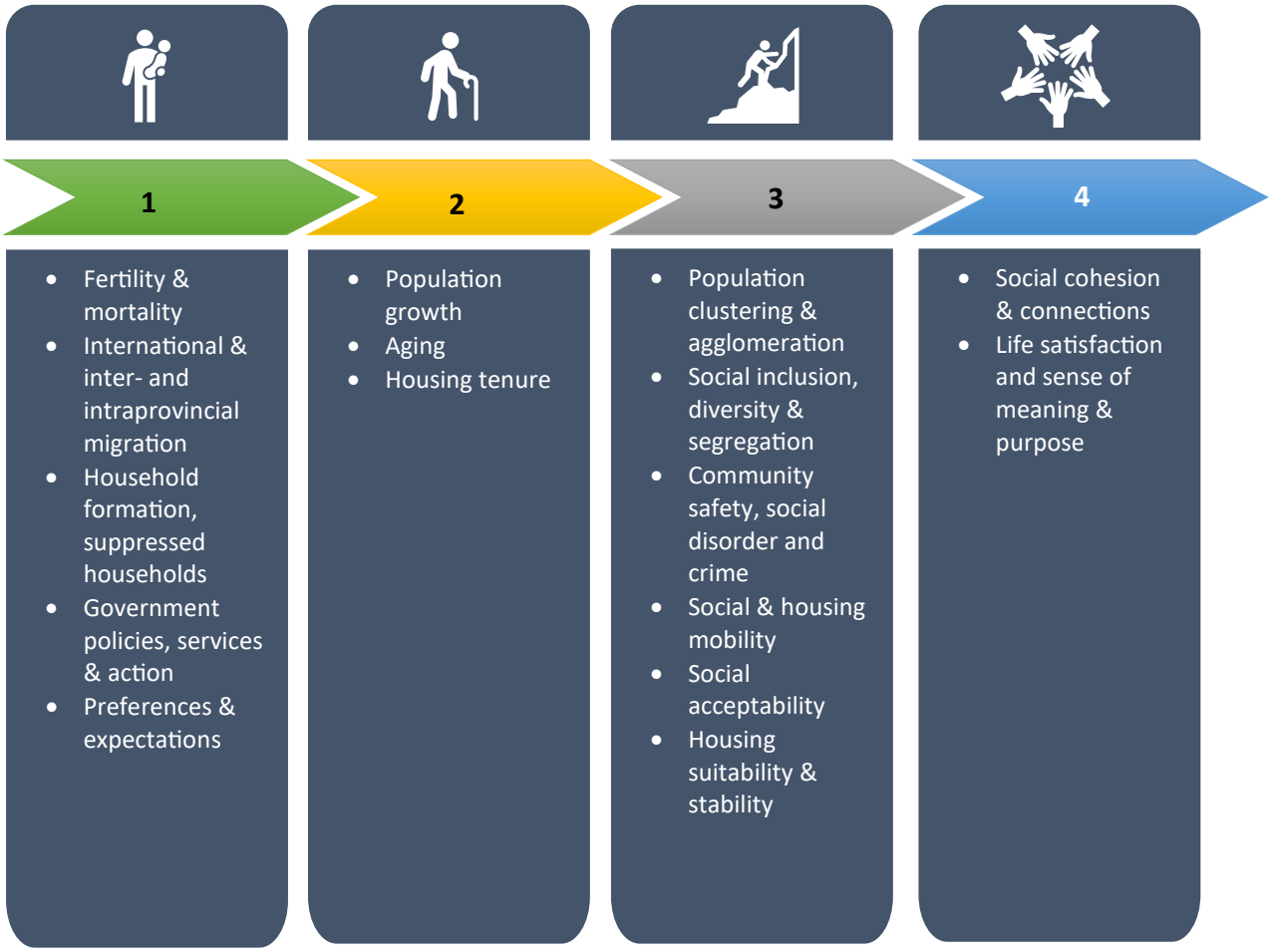

Figure 3:Dimensions and concepts of the social factors in Canada's housing conceptual framework

which people belong in their local community and feel satisfied with their life.

Economic factors

149. Figure 4 details the economic factors in StatCan's housing statistics framework. In Stage 1, it lists key inputs to residential construction, with labor, land and building materials. It also contains the economic conditions that can directly influence new constructions; financing, insurance, incentives, fees and government regulations. Firms' expectations and risk profile, especially in relation to future economic prospects, are also included here. Overall macroeconomic conditions not exclusively related to the construction sector, such as inflation, and the broad industrial organization, also play a pre-condition role in explaining further concepts under the economic factors of the framework. The presence and evolution of building technologies, such as off-site construction, is part of Stage 1. Finally, both firms and households' income and willingness to spend are included in this initial stage.

150. The following stage begins with rent levels, both rent paid by current tenants and rent asked on the market for available units. For owner households, ownership costs include mortgage payments for those with a mortgage and strata fee for those owning a condominium and otherwise include property tax and maintenance. The concepts of investments in new buildings and renovations are also included in Stage 2. Further concepts on the constructions process, such as the time needed to start, and then subsequently to complete new buildings are included. Similarly, the productivity of the construction sector matters to understand the performance of the housing system. Concepts of valuation, including the way governments and insurers value residential properties matter in relation to taxation and risk valuation. Investors play a key role in providing the capital needed for new constructions and also play a role in the resale market. Lastly, developers and builders' profitability play a key role in understanding the business cycle for that sector.

151. Stage 3 lists outcomes of the flow of homes in the market in relation to household demand and resulting prices. A key concept under economic factors is affordability, whether it is directly in relation to housing or for essential items in relation to the remaining disposable income after housing costs. Individuals manage their budgets as a function of those costs, thus influencing their ability to save outright, and owner households can use their asset as a form of saving. Similarly, households often contract mortgages and incur debt as a result. Since not all residential dwellings are used for year-round occupancy, the concept of use of dwellings is also included to encompass the allocation efficiency of housing, as well as other usages such as recreational, second homes and short-term rentals. Another result of the stock and flow of homes to the market is the infrastructure costs to municipalities to service those dwellings with clean water, sewage, roads, garbage collection and transit. Municipalities often levy charges on new construction to finance new services and would impose taxes on the value of homes to fund overall local government budgets. Economic activity stemming from investments and indirect housing consumption plays a relevant role in overall macroeconomic activity, and thus stability as construction is cyclical and significantly impacted by interest rates.

152. In Stage 4 of the economic factors, several quality-of-life concepts are included. Homeowners derive significant wealth from owning their homes, which falls under the prosperity domain. Conversely, household's ability to make ends meet – conveyed by the financial well-being concept – is linked with housing costs. Housing can also have adverse consequences on peoples'

well-being; they can live in inadequate housing, can be pushed into poverty, food insecurity or homelessness.

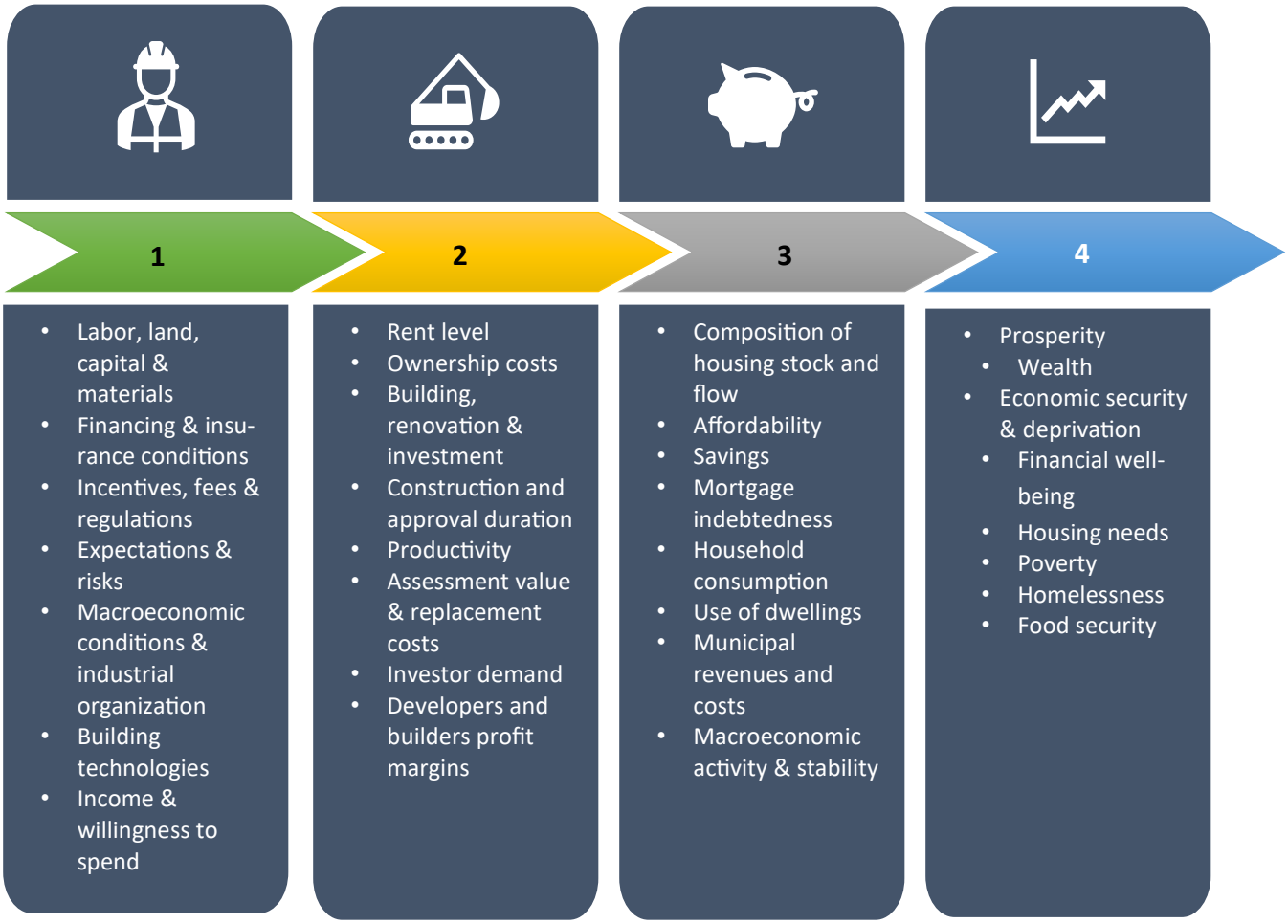

Figure 4: Economic concepts in StatCan's housing framework

Environmental factors

153. The environmental lens on relevant concepts in StatCan's framework begins with the location and attributes of the housing stock, shown in Figure 5. It then relates to the features and the attributes of the built and natural environment surrounding those residential structure, in the form of other structures, natural geography and pollution. Zoning rules manage what and where housing can be built, and building codes dictate the rules of how buildings should be built. Further architectural and design choices influence the way individuals interact with buildings, dwellings, and other people in their community.

154. Stage 2 then lists concepts that articulate the relationship between housing structures and its broader environment. The proximity of dwellings to amenities, infrastructures, jobs and green spaces influences the extent to which individuals can obtain the services they need and seek social and economic opportunities. Housing density in urban areas maximizes the use of existing infrastructures and reduces greenhouse gas emissions. On the contrary, sprawl to previously undeveloped land usually leverages cheaper land than in urban areas but requires new infrastructures and longer commutes. The location of housing will also influence the risk of natural disasters (flood, fire, seismic, landslides, volcanic, wind events) on residential structures and their occupants. The concept of housing's contribution to climate change can be informed by the choice of building materials and heating/cooling systems. The physical features of homes also explain households' exposure to housing-specific pollutants and dangerous substances (i.e., asbestos, lead, radon).

155. Further environmental concepts of the physical outcomes of housing are listed in Stage 3. The way the built environment interacts with the natural environment and biodiversity matters in understanding the role of green spaces and the overall ecological footprint of housing. Transportation is linked to the location of homes in relation to jobs and education facilities. In the context of an aging society, accessibility of homes, and accessibility retrofits, are important concepts to capture to measure the capacity for people with disabilities or limitations to live in an adequate dwelling. Other dimensions of housing needs are also included; the need for repair and maintenance of homes (adequacy) and the number of rooms to avoid crowding (suitability). The location and features of homes can also enable occupants to express their culture, traditions and beliefs.

156. Ultimately, the concepts nested under environmental factors have a strong incidence on household's life satisfaction, sense of meaning and ability to lead a healthy life.

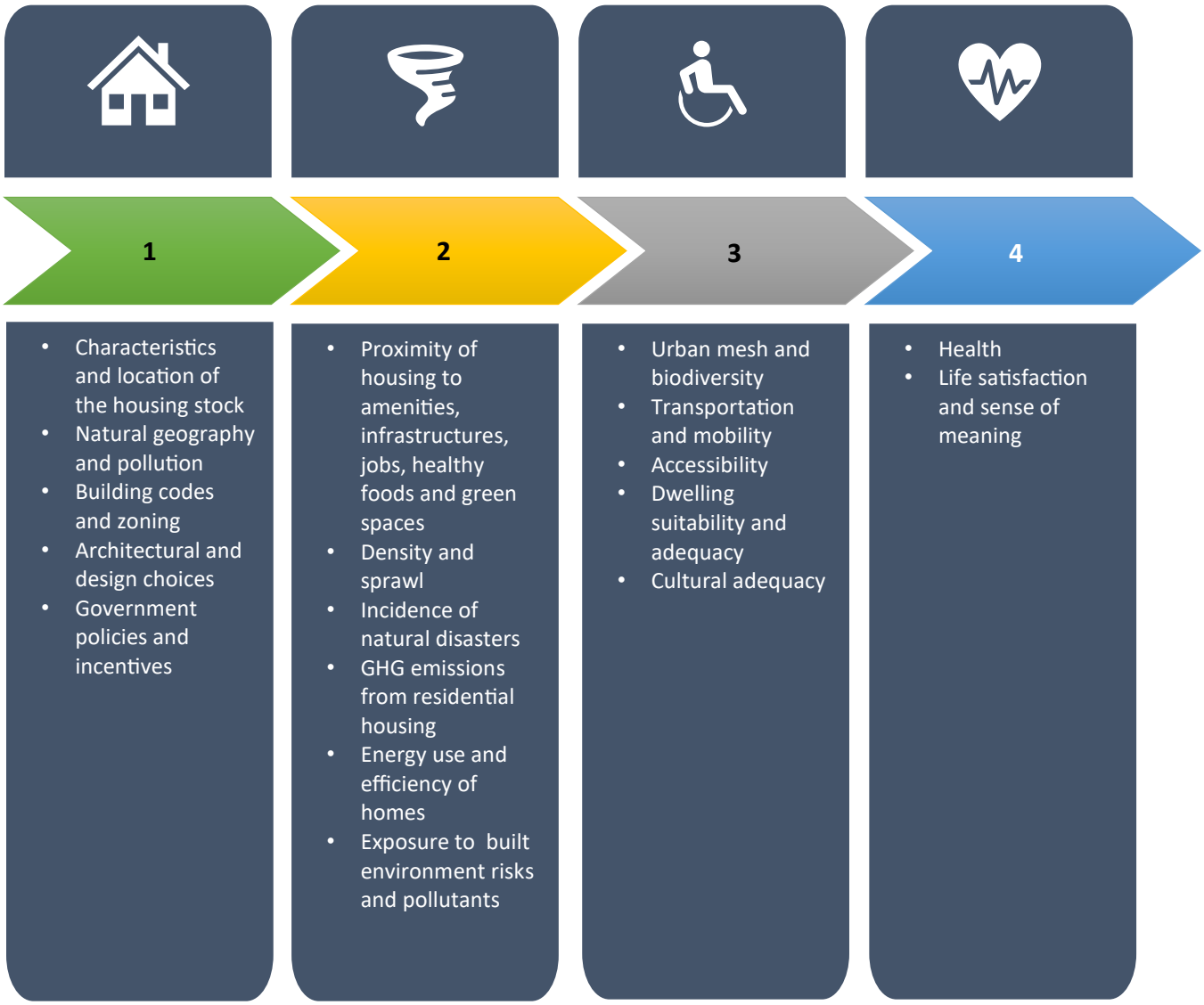

Figure 5: Environmental factors of the StatCan housing conceptual framework

V.A.3. Measurement framework

157. Given the vast number of concepts in the core and comprehensive frameworks, there is a need to prioritize the development of data and statistical infrastructures to inform key housing questions. At its core, the framework requires a rigorous understanding of the stock and flow of dwellings and households, as it forms the spine of the measurement approach. This is achieved by combining the strengths of different statistical programs, including the Census of Population and the Canadian Housing Statistics Program – an administrative data program that integrates property ownership records with tax and immigration data.

158. Housing is a local phenomenon, and many important housing concepts can have a relatively low incidence (i.e., few people will experience homelessness or will be evicted in their lifetime). The

combination of the need for municipal-level data and low-incidence metrics leads to complications in typical survey approaches, since sample surveys usually do not allow for such level of disaggregation. Thus, approaches that leverage administrative data are prioritized for the core stock and flow model at a local level, and those are complemented by traditional survey methods to collect information from households and businesses.

159. Second in importance is the issue of prices, both rental and ownership costs, in levels and in the form of price indices. The approach for those measurements involves a combination of household and business surveys, as well as data sharing with private sector actors and the use of alternative data.

160. Beyond those core elements, StatCan uses sample surveys to measure perceptions, experiences, aspirations, and unmet housing needs. The key source for that information in the Canadian Housing Survey, a biennial household survey. The agency also partners with governments to integrate administrative data from programs to inform on policy outcomes. StatCan also leverages remote sensing, geospatial and implementations of artificial intelligence (i.e., computer vision) to complement its housing data.

V.B. Case Study: Australia

161. The Australian Bureau of Statistics (ABS) faces significant and increasing demand for integrated datasets that bring together location, person and dwelling level administrative data. These datasets will be vital in meeting future information needs and to support more efficient survey, Census and data integration operations. An integrated conceptual framework is needed to ensure that the ABS' data assets and the resulting statistics and insights are coherent. Statistical infrastructure that includes common standards and frameworks will enable the production of higher quality integrated data assets and official statistics.

162. Like many other countries, Australia is increasing its use of administrative data in how it runs the 5-yearly Census. For the 2016 Census, administrative data was used to create an address register. This helped to significantly reduce the cost of conducting the Census by mailing out online access codes and forms to most Australians instead of dropping them off in person. For the 2021 Census, the use of administrative data was expanded further, using integrated data from the Person Level Integrated Data Asset (PLIDA, formerly the Multi-agency data integration project (MADIP)) to improve the quality of Census counts and official population estimates. In April 2023, the data available from the 2021 Census was further enhanced by adding new income measures derived from administrative data.

V.B.1. Administrative Data Snapshot of Population and Housing

163. To support the 2021 Census, PLIDA and the ABS Address Register were used to create two administrative datasets: one about people and one about houses. As well as improving the Census, this data provides new, valuable population and housing information in its own right. To show its potential, the datasets have been refined into a new, experimental product: an Administrative Data Snapshot of Population and Housing. Like the Census, the Administrative Data Snapshot (ADS)

provides a snapshot of Australian people and houses but has a smaller and different set of person and housing characteristics. The ADS has a reference date of 30 June 2021, which is close to Census night (10 August 2021). This enables the best comparison with Census data and official population and housing statistics.

V.B.2. Methodology and Data Sources

164. The housing snapshot is created using administrative data integrated at a dwelling level. The three data sources used are the ABS Address register[8], the MADIP and electricity consumption data from electricity distributors and networks.

V.B.2.a. *ABS Address register*

165. The ABS Address register is an up-to-date, comprehensive list of all known physical addresses within Australia, compiled using geospatial administrative data. The Address register is used as the basis for residential dwelling units on the housing snapshot. The Address register was established ahead of the 2016 Census to support mailing out Census forms. It has developed and improved over time and now supports operations for Censuses. It also supports the linkage of datasets by allowing addresses to be coded to a unique, anonymized identifier for analysis about de-identified dwellings. The Address register does not contain any information about the people or businesses associated with an address.

V.B.2.b. *Multi-agency data integration project (MADIP), including the population snapshot*

166. MADIP is a secure data asset combining information on health, education, government payments, income and taxation, employment, and population demographics (including the Census) over time. Administrative data from MADIP is used to create the population snapshot, which provides information about the people living in the dwellings in the housing snapshot. MADIP data was also used to derive signs of dwelling activity for the housing snapshot.

V.B.2.c. *Electricity consumption data from electricity distributors and networks*

167. ABS collected information from electricity distributors to help determine whether non-responding dwellings in the 2021 Census were occupied[9]. The electricity data provides information about dwellings in the snapshot, including electricity consumption and signs of activity. Electricity consumption data was collected for residential electricity meters across Australia, including basic and smart meters. No information on other energy use, such as gas, was collected.

V.B.3. Involvement of each data source

168. There are three distinct steps to creating the housing snapshot from integrated administrative data:

- Capturing residential dwellings at a point in time (scoping)

[8] See https://www.abs.gov.au/statistics/research/abs-address-register-users-guide
[9] See https://www.abs.gov.au/statistics/research/using-administrative-data-improve-census-count

- Deriving information about those dwellings
- Deriving information about the people living in those dwellings.

Step 1 – Capturing residential dwellings at a point in time (scoping)

169. This was achieved by selecting a subset of anonymized address identifiers on the ABS Address register to represent Australian residential dwellings. The Address register is updated each quarter to include new addresses and to remove addresses that no longer exist. Its coverage and quality change during the 5-yearly Census cycle as new information discovered in conducting the Census is fed back into the register over time. The housing snapshot was based on the Address register on May 2021, the last quarterly update not to use information from the 2021 Census. This included addresses that were under construction as of May. Using the Address register to count residential dwellings is a new area of research in the ABS. Because of conceptual differences between dwellings and addresses, and because the quality and coverage of the register changes over time, it is expected this methodology will continue to evolve.

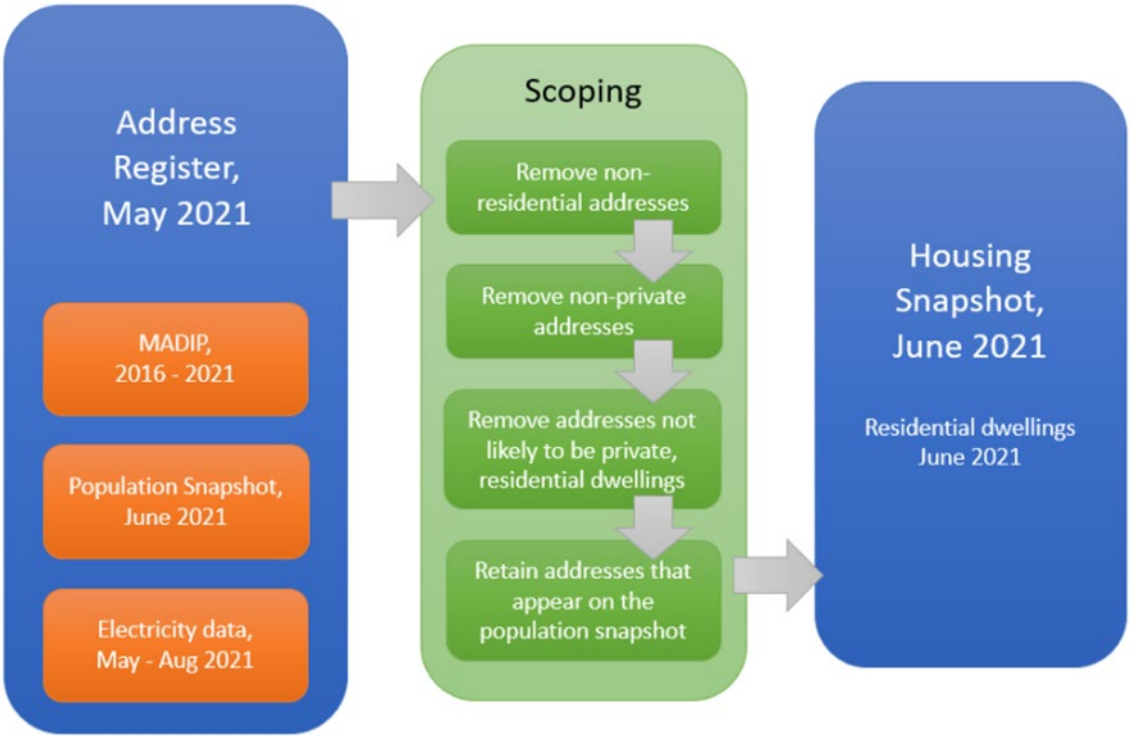

Figure 6: Scoping the Address register and Population snapshot to dwellings at a point in time

Step 2 – Deriving information about dwellings in the housing snapshot

170. The second step is to derive information about dwellings in the snapshot. The housing snapshot includes three main types of dwelling information:

- The structure of the dwelling

- An indication of recent person activity at a dwelling
- The level of electricity consumption at a dwelling.

Step 3 – Deriving information about the people living in dwellings – the population snapshot

171. The third step is to derive information about people likely to be living in dwellings on the housing snapshot, using information about the people on the population snapshot associated with a dwelling. This includes the number, age, sex and income of people assigned to a dwelling from the population snapshot. Of the 25.7 million persons on the population snapshot, 23.4 million (91%) were associated with a dwelling on the housing snapshot. The remaining 2.3 million (9%) could not be associated with a dwelling, as their location information could only be coded to an area, not an anonymized address. Generally, persons who could be linked to a dwelling had a higher median age (39 compared with 33 years) and higher median income ($536 compared with $458 per week) than persons who could not be linked to a dwelling.

V.B.4. Coverage of data sources

172. The coverage of these data sources is an important factor to consider when using measures derived from them. Dwellings on the snapshot covered by MADIP are those where there is any record of the address being used within MADIP in the five years to June 2021. Dwellings covered by electricity data are any addresses with an electricity connection over the electricity data reference period and where an anonymized identifier could be assigned. Dwellings covered by the population snapshot are those assigned as the usual residence of at least one person in the population snapshot on 30 June 2021. Nationally, MADIP data has higher coverage of dwellings in the snapshot (94%) than electricity data (79%). The population snapshot (83%) covers a subset of the dwellings covered by MADIP. The Northern Territory outside of Darwin has the lowest coverage rates, reflecting the difficulty of capturing accurate address information from administrative sources in more remote areas. Comparisons between the housing snapshot and the Census show very similar counts of dwellings at the national and state/territory level. Differences at local area level are more substantial and indicate some trends of over- and under-coverage in the snapshot, tending to occur in some outback and inner-city areas.

V.B.5. New Insights

173. This one-off experimental release also combined data on electricity consumption and interaction with government services to provide new insights into housing vacancy and utilization, such as:

- About 94% of houses across Australia were recorded in government administrative data sources during the five years to June 2021.
- At the time of the snapshot, 89% of these were in use as a primary residence, 9.7% were in use but not as a primary residence and 1.3% showed no sign of recent use. About 1.3% of houses with electricity data also showed no sign of recent use.
- Electricity consumption for low-income dwellings was lower than average for 1- and 2-person dwellings. Electricity consumption for high-income dwellings was higher than average for 1-person through 5-person or more dwellings.

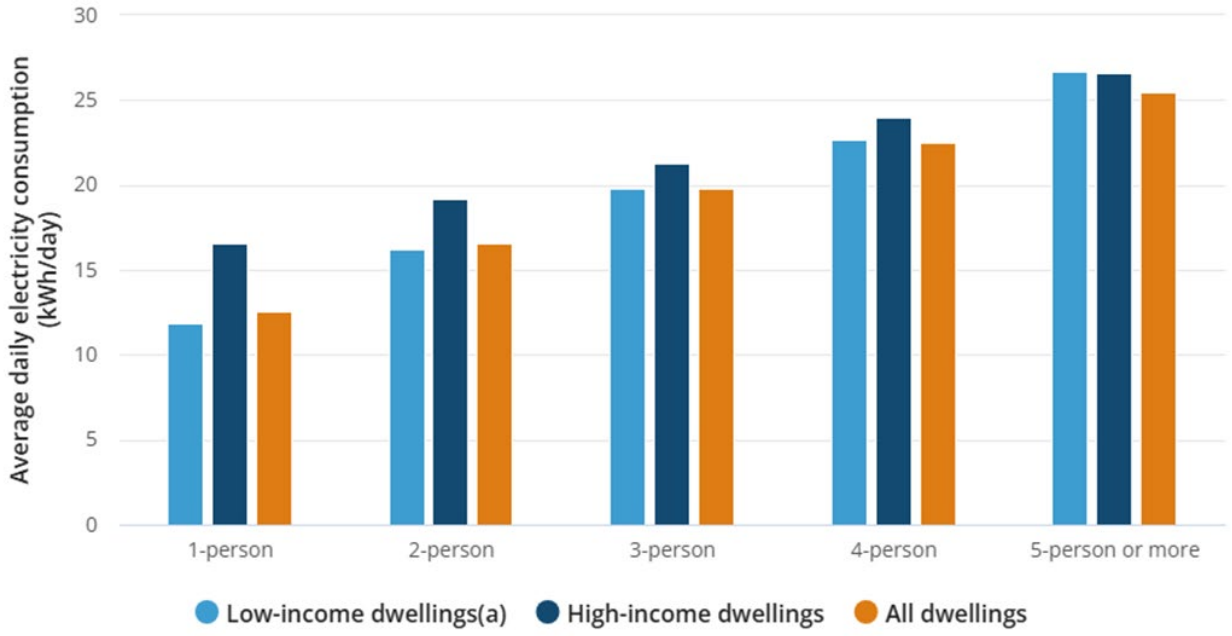

Figure 7: Electricity consumption by income and number of persons per dwelling

174. While the ADS is experimental and more limited than the Census, it provides a valuable complement to Census data because:

- It helps give a fuller picture of counts of people and houses by providing a view which is similar, yet different. Understanding the differences highlights the strengths and weaknesses in both data sources.
- It provides new data on population and housing that isn't available from the Census. For example, it provides information on how people moved each year between Censuses, some new measures of income, and some new measures of housing activity.
- It shows the potential to provide Census-like data more frequently than the 5-yearly Census. Updated snapshots could be released between Censuses.

175. The ABS is working towards a common conceptual framework to underpin projects such as this, which will have a range of benefits including increased responsiveness to emerging information needs. For the 2026 Census, the ABS is investigating further enhancements using administrative data. These include the possibility of adding more topics, replacing some questions, providing missing information, and using administrative data to run the Census more efficiently.

VI. Toward an International Framework for Housing Statistics

176. As the framework for housing statistics is shaping, a global framework should take into account the prospects related to advancements in technology, increased focus on sustainability, the recognition of global standards, and the flexibility for the framework to adapt to the pace of policy change.

VI.A. Future Prospects

177. As housing challenges continue to evolve due to economic shifts, demographic changes, and environmental pressures, the housing statistics framework must also adapt and improve. These prospects highlight the need for continuous innovation and adaptation in the housing statistics framework, ensuring it remains relevant and effective in addressing both current and future housing challenges.

VI.A.1. Integration of Advanced Technologies

178. The development of the framework should include more extensive use of artificial intelligence and machine learning algorithms to predict housing market trends and assess the impact of housing policies more accurately.

179. Leveraging data from digital platforms and connected devices in homes can provide real-time insights into housing usage, preferences, and deficiencies.

VI.A.2. Enhanced Focus on Sustainability

180. As the importance of sustainable development grows, the framework should integrate more detailed metrics related to energy efficiency, resource use, and the environmental impact of housing materials and construction methods.

181. Refining the framework to better assess and plan for the impacts of climate change on housing, including risk assessments for flooding, wildfires, and other natural disasters.

VI.A.3. Global Standardization

182. To facilitate international comparison and cooperation, further efforts are needed to standardize concepts, data collection methods and reporting tools globally. The United Nations Statistical Commission should be consulted on the development of a globally accepted international housing framework.

183. Improving methodologies to include underrepresented populations and regions to ensure that the data reflects the diversity of housing conditions worldwide, including under the UN framework of the right to adequate housing.

VI.A.4. Policy Impact Assessment

184. The framework should include tools that can dynamically assess the effectiveness of housing policies and quickly adjust to feedback, allowing policymakers to iterate more effectively.

VI.B. Call to Action

185. This call to action is designed to galvanize support and resources from around the world, ensuring that a global housing statistics framework is not only widely adopted but also effectively adapted to meet the diverse needs of different regions and communities.

186. To maximize the impact of an international housing statistics framework, a strong global call to action is necessary to encourage its adoption and adaptation.

VI.B.1. Engagement of Global Stakeholders

187. National and local governments should be encouraged to develop and adopt a framework to enhance their housing data collection and analysis capabilities, improving policy decisions and resource allocation. This entails the identification of shared concepts and standard indicators, while maintaining local and regional flexibility and ensuring coherence with existing frameworks.

188. Entities such as the United Nations, World Bank, OECD and regional development banks can play a pivotal role in promoting and funding the adoption of the framework in developing countries. The United Nations Statistical Commission should be consulted on the implementation of the international housing framework and the stakeholders' platform.

VI.B.2. Collaboration and Partnerships

189. Public-Private Partnerships can facilitate the sharing of knowledge, resources, and technologies between the government and private sector, enhancing the efficiency and scope of data collection. Those partnerships can also foster the development of new indicators that leverage administrative data held by private sector actors.

190. Collaboration with universities and research centers can help refine the framework's methodologies and integrate the latest academic findings into practical applications.

VI.B.3. Education and Awareness

191. Implementing training sessions and workshops for local authorities and data handlers worldwide can increase the framework's usability and effectiveness.

192. Increasing public awareness about the importance of housing data can encourage community participation and support for housing initiatives.

VI.B.4. Funding and Resources

193. Adequate funding is essential for the initial setup and ongoing operation of the housing statistics framework, especially in resource-constrained environments.

194. Providing technical support to countries and organizations implementing the framework can help overcome barriers related to technology and expertise.

VII. Works Cited

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VIII. Appendix

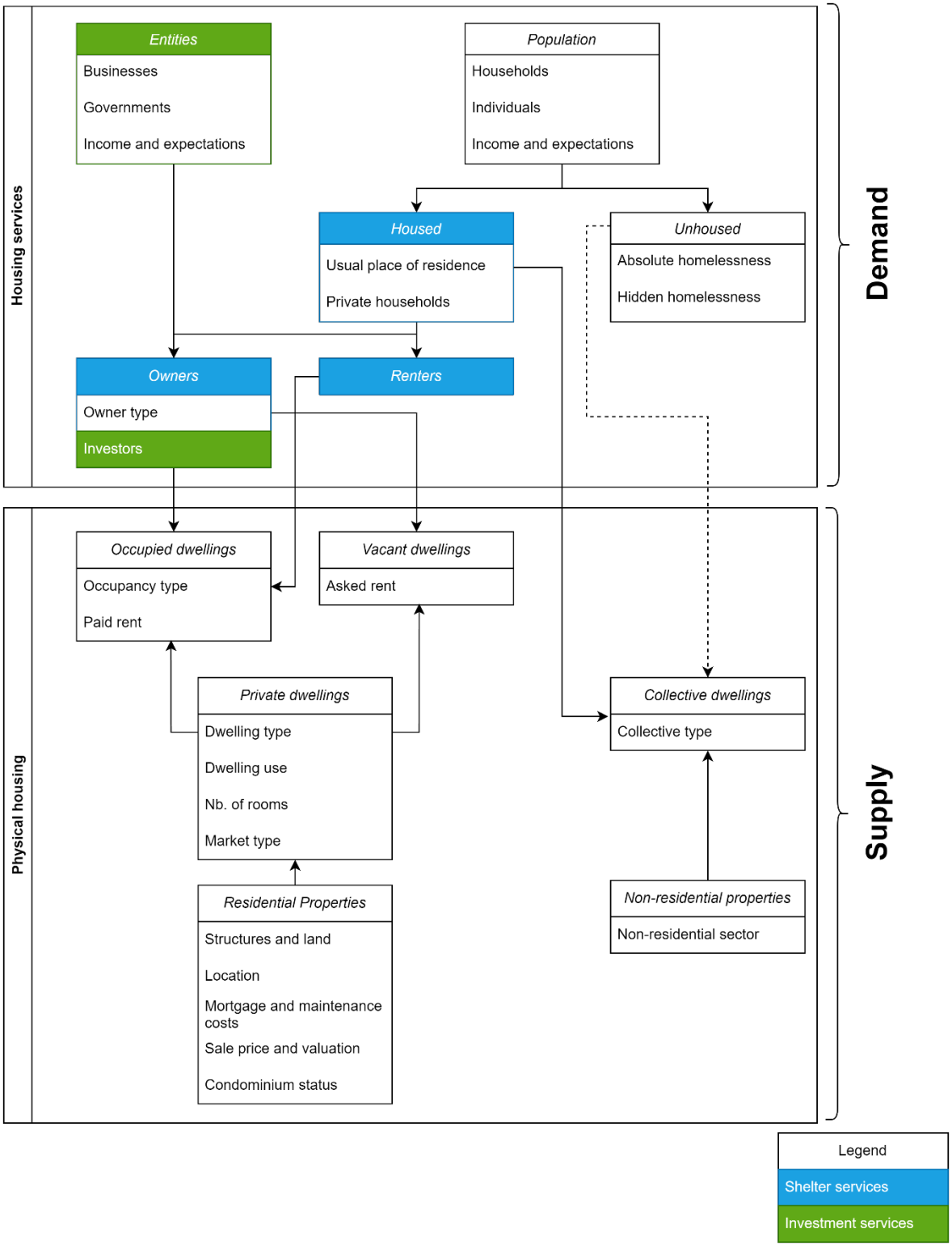

Figure 8: Canada's core housing concepts