



## 2019 KAZAKHSTAN HUMAN DEVELOPMENT REPORT

# Urbanization as an Accelerator of Inclusive and Sustainable Development



## **National Human Development Report 2019**

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The study was funded by the United Nations Development Programme (UNDP) and prepared by the lead authors. The findings, interpretations and conclusions expressed in this report are those of the authors and do not reflect the official position of the UNDP.

Keywords: Sustainable Development Goals, urban development, human development, habitat, urbanization, Kazakhstan.

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National Human Development Report 2019

# Urbanization as an Accelerator of Inclusive and Sustainable Development



Published for the  
United Nations  
Development  
Programme  
in Kazakhstan





## FOREWORD

It is my pleasure to present the 2019 National Report on Human Development in the Republic of Kazakhstan, which focuses on urbanization as a key element for accelerating sustainable development goals.

In Kazakhstan, as in many other nations around our planet, more and more citizens are choosing to live in cities, as they often offer more diverse services and greater opportunity for personal development and economic advancement than rural areas do. At the same time, the shift to cities creates mounting challenges of pollution, congestion, threats to public health, overburdened infrastructure and public services, and so on.

Based on both quantitative and qualitative data, this report shows that, with good governance and sound design, urbanization can help secure social welfare and equity, mitigate environmental impact, and support economic growth. The report concludes with policy recommendations for sustainable urban development, covering 12 strategic directions.

Toward this end, UNDP is already supporting cities and national institutions in Kazakhstan in various ways – development of key strategy documents; drafting of legislation; strengthening the organization and capacity of governmental agencies at various levels; and application of solutions to protect the urban, regional, national, and global environment.

I thank everyone who participated in the preparation of this report, and affirm UNDP's steadfast commitment to pursue the report's recommendations through partnerships and joint initiatives. Together, we can make a meaningful contribution to fulfill the potential for sustainable development in the Republic of Kazakhstan.



**Yakup Beris**

Resident Representative of UNDP in the Republic of Kazakhstan

# ACKNOWLEDGEMENTS

This NHDR is the result of intense collaboration between the UNDP Country Office in Kazakhstan and the consultants, as well as many other individuals and organizations who generously shared their insights, time, hopes and concerns.

We particularly express gratitude to the residents and interviewees from Shymkent, Stepnogorsk, and Petropavlovsk, who opened their homes and hearts and shared their views of life in their city.

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# Table of Contents

<b>Executive summary</b>	<b>9</b>
<b>1. Urbanization as a sustainable development strategy for Kazakhstan</b>	<b>12</b>
1.1. What is sustainable urbanization?	12
1.2. What is unique about Kazakhstan’s urbanization?	14
1.3. Which are the relevant global and national policy agendas?	16
1.4. Why is urbanization an appropriate accelerator for Kazakhstan?	18
1.5. What are the current approaches to urban management?	22
<b>2. Assessing urban performance in Kazakhstan</b>	<b>25</b>
2.1. Measuring human development in urban areas at the regional level: The Urban-Adjusted Human Development Index	26
2.1.1. What does the UA-HDI tell us about Kazakhstan’s Urban Areas?	30
2.1.2. Key findings by dimension	33
2.1.3. Build environment challenges differ in the south and the north	37
2.2. Measuring sustainable development at the city level: The Habitat Commitment Index	38
2.3. Assessment of evidence	39
2.3.1. Even top-performing cities operate well below their potential	39
2.3.2. Cities in the east and the west struggle the most	40
2.3.3. Small cities face greater urban performance challenges	42
2.3.4. High HCI scores and low regional UA-HDI scores indicate the importance of tertiary cities	43
2.3.5. Findings for discussion	44
<b>3. City life stories</b>	<b>46</b>
3.1. Petropavlosk stories	48
3.2. Stepnogorsk stories	51
3.3. Shymkent stories	53
<b>4. Framework for change</b>	<b>58</b>
4.1. Strategic Policy Points	58
<b>Annexes</b>	
Annex A. Urban-Adjusted Human Development Index and Habitat Commitment Index	70
Annex B. Habitat Commitment Index Dashboard	80
Annex C. Semi-structured interviews with family members	81
Annex D. Micronarratives as a method and practice in UNDP	91
<b>Endnotes</b>	<b>92</b>
<b>Bibliography</b>	<b>96</b>

## List of Tables:

Table 1:	The Urban-Adjusted Human Development Index (UA-HDI) 4 dimensions, 13 indicators, 16 regions	27
Table 2:	The Urban-Adjusted Human Development Index by Region, 2017	30
Table 3:	The Habitat Commitment Index for cities in Kazakhstan, 9 dimensions, 19 indicators, and 30 cities, linked to 10 SDGs	39
Table A1:	Goalposts for the UA-HDI Calculations	72
Table A2:	Data on UA-HDI Indicators for Aktobe and Mangystau; Calculating the UA-HDI	74
Table A3:	Indicators used for the Habitat Commitment Index	77
Table A4:	Sanitation HCI scores in 5 cities	79

## List of Figures:

Figure 1:	Conceptual definition of sustainability	12
Figure 2:	Relationship between GDP per capita and urbanization across countries in 2000	13
Figure 3:	Urban Population and Economic Growth in Kazakhstan (1960-2016)	14
Figure 4:	Policy Aims in Terms of Urban Concentration	15
Figure 5:	Models of urban concentration	15
Figure 6:	Kazakhstani network of large cities' agglomerations	15
Figure 7:	The New Global Agenda reinforces "localization"	16
Figure 8:	National Transformative Agenda, "The Kazakhstan Way"	16
Figure 9:	Seven Priorities of the 2050 Strategy	17
Figure 10:	Global Interaction Assessment Between all SDG Goals and Targets (count)	18
Figure 11:	Linkages between SDG 11 and SDGs in Kazakhstan	19
Figure 12:	Rapid Integrated Assessment of city-level policies and SDG alignment	20
Figure 13:	SDG Relevance Rates for national policies, city policies and overall, calculated using UNDP-RIA analysis	21
Figure 14:	Analogy between yurt construction and "zhurt" policy	22
Figure 15:	Three approaches to urban management	22
Figure 16:	Shifts in power and values between three approaches of urban management	23
Figure 17:	Pruitt-Igoe: failure of the modern, direct supply approach	23
Figure 18:	"Houses without people": failure of the second approach	23

Figure 19:	Indices used for the analysis	26
Figure 20:	More urbanized regions fare better in human development (calculations made using the least-square method)	32
Figure 21:	Access and quality of basic services (%)	34
Figure 22:	All regions perform lower in the UA-HDI than in the HDI, 2017	37
Figure 23:	Cities ranked by HCI Score	39
Figure 24:	HCI Scores by City Size: Large, medium, and small cities	42
Figure 25:	Capturing people's stories through micro-narrative analysis in Kazakhstan	46
Figure 26:	Capturing people's stories through micro-narratives analysis in Kazakhstan (continued)	47
Figure 27:	From a set of recommendations to a framework for change	58
Figure A1:	Difference in data disaggregation levels: HDI, UA-HDI, and HCI	70
Figure A2:	The Achievement Possibility Frontier	76
Figure A3:	Sanitation: Achievement Possibility Frontier	79

## List of Boxes:

Box 1:	Brief insight on the extent of Housing Programme 7-20-25	24
Box 2:	Brief insight into UNECE's Kazakhstan Housing Sector Profile 2018	29
Box 3:	The type of growth matters	31
Box 4:	Nationally Appropriate Mitigation Actions for Low-carbon Urban Development, 2015-2020	35
Box 5:	Enabling SME involvement in energy efficiency improvements of multi-apartment buildings	36
Box 6:	Kazakhstan's top HCI performer: Stepnogorsk	40
Box A1:	An example - calculating the HCI Score in Access to Sanitation	79

## List of Maps:

Map 1:	Regions in the north and south perform lower in the UA-HDI	32
Map 2:	HCI Rankings in 30 cities	41
Map 3:	Combining HCI scores and the UA-HDI	43

## EXECUTIVE SUMMARY

Kazakhstan has an ambitious transformation agenda for 2050 that intends to link diversified and green economic growth with urbanization. The country plans to quadruple its GDP, substantially increase its non-oil revenues, halve its energy consumption, and increase its urbanization from 56 per cent to 70 per cent. In line with these national goals, the 2030 Sustainable Development Goals (SDGs) and the New Urban Agenda, Kazakhstan's 2019 National Human Development Report argues that all these objectives are integral and indivisible. Together, they call for an implementation strategy where the aspirations of different sectors can be mutually reinforcing. This report claims that inclusive and sustainable urbanization is a strategic accelerator for Kazakhstan to achieve its 2050 aspirations. Accelerators support policy focus in order to achieve faster and better results, taking advantage of interlinkages and chain reactions across different sectors. This report provides a conceptual foundation, as well as quantitative and qualitative evidence, supporting the idea that urbanization will spearhead the desired objectives. Finally, a framework for change is provided at the end of the report: a set of interconnected policy recommendations and specific actions that will reinforce joint outcomes.

Urbanization is a relatively new social and economic phenomenon in Kazakhstan; a country with a long tradition of low-density and dispersed settlements. The risks of urbanization (rising inequality, unaffordable housing, congestion, and pollution) must be targets of well-designed policies that reap the benefits of agglomeration (higher productivity, economic diversification, new market creation, better amenities). Furthermore, as the concentration of people in cities increases, economies become more productive, efficient, and diverse; new forms of production and consumption emerge, knowledge is broadened, and innovation increases. Urban areas are also natural laboratories of social transformation and innovation. Appropriately designed and managed urban infrastructure is a potent vehicle for distributing social well-being and mitigating the environmental impact of development while supporting economic growth. Cities expand people's freedoms and capabilities and thus support human-centred development.

Urbanization can promote gender equality, narrowing gender gaps in employment opportunities, in access to services and infrastructure, while also relaxing gendered socio-cultural restrictions. Because discrimination and marginalization unevenly affect different genders, introducing gender-sensitive practices in urban planning and governance is key. This involves not only incorporating women in official structures and increasing their representation in decision-making, but also raising awareness of gender-specific needs, examining the effects of actions taken throughout government in shaping existing patterns of authority, power, and legitimacy, and more importantly, taking gender-responsive actions at the municipal level.

Since 1991, Kazakhstan has seen significantly improved human development, together with increasing GDP per capita levels and substantial reductions in poverty. Disparities between regions and cities, however, have widened (Republic of Kazakhstan, (2011)), reinforcing the need for nuanced local policies and practices which capture the full potential of urbanization. This report highlights the strengths of cities, their potential, and the challenges that lie ahead, answering the following questions:

- What is the current level of human development across urban areas in Kazakhstan's regions?
- How do cities perform and which cities are leading the way in sustainable development?
- What challenges need to be addressed to foster human development in cities?

This report uses two indices to address these questions: the Urban-Adjusted Human Development Index (UA-HDI), calculated for the country's 16 regions, and the Habitat Commitment Index (HCI), applied to 30 major cities. The administrative and territorial division of Kazakhstan, as well as the names of cities and settlements, including the name of the capital of Kazakhstan is shown as at the beginning of 2018.

The UA-HDI indicates that the strongest human development is found in Astana, Almaty city, and Pavlodar, while the urban areas in Akmola, North Kazakhstan, and South Kazakhstan have lower capabilities. All the regions perform relatively well in health and knowledge, and have very positive scores in living standards with high average urban incomes and low urban poverty. The weakest performances in all the regions were found in the built environment (buildings, quality infrastructure, roads and transportation systems, and public spaces). Improving the built environment therefore provides an important opportunity for enhancing human well-being in urban areas. Expanding access to quality services (drinking water, sanitation and heating), offering better public transport options, and greening cities, are considered priorities for achieving inclusive and sustainable urban development in Kazakhstan.

At the city level, the HCI ranks 30 cities according to 19 indicators, across 9 dimensions linked to 10 of the 17 Sustainable Development Goals. Instead of ranking cities in absolute achievement levels, the HCI considers local capacity thereby producing a more equitable comparison of city performance. Using the most recently available data, Stepnogorsk, Almaty city, Kokshetau, and Astana rank highest in the HCI. While Stepnogorsk has a long way to go to reach full achievement in various dimensions and indicators, the monotown<sup>ii</sup> currently performs high considering its capacity. At the opposite end of the spectrum, Satpaev, Saran, Zyryanovsk, and Aktau rank lowest in the HCI. Geographically, cities in the east and the west struggle more than the northern, central and southern cities. In the east, dilapidated infrastructure contributes to low performance, while a high gender pay-gap lowers performance in cities in the west. On average, small cities face greater urban performance challenges than large cities. Large cities, such as Astana, Almaty city, and Shymkent, score particularly well in economics, urban form, network infrastructure, and housing, however, face greater challenges regarding environmental indicators, especially air pollution.

This report gives a human face to the results from the quantitative analysis by integrating qualitative multi-modal evidence through questionnaires, interviews, photographs, and consultative workshops. Interviews were held with public officials, regular citizens, and a range of experts. Three cities were selected for this qualitative component: the small northern city of Petropavlosk, Stepnogorsk, a monotown, and the large southern city of Shymkent. These cities reflect the urban diversity of Kazakhstan, with its vast territory of varied climates, landscapes, economic realities, ethnic compositions, social aspirations, and attitudes towards the past, present, and future.

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<sup>ii</sup> Monotown (a calque from Russia monogorod; gorod meaning "town") is a city/town whose economy is dominated by a single industry or company. This means that most employments (except for service to residents like schools and shops) are by the main company



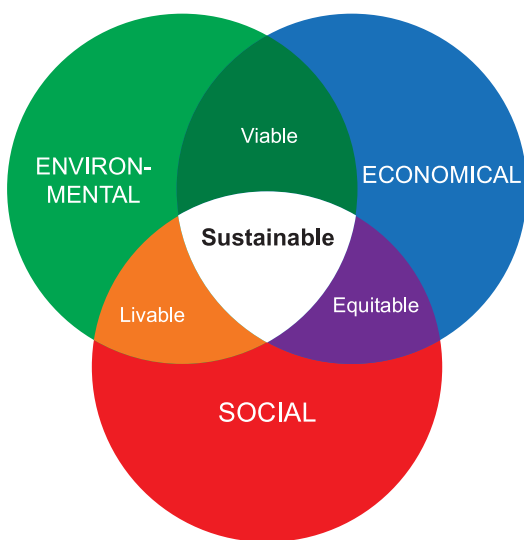
The report ends by presenting a framework for change which emphasises that policy recommendations should not be made independently, but rather form part of a coherent group of coordinated concrete actions. The concluding chapter describes 28 concrete policy actions under the following key policy strategies: 1) Promote a people-centred model of urban management, 2) Differentiate priorities for growing and shrinking cities, 3) Foster benefits of density to promote economic and environmental sustainability while offsetting potential disadvantages such as higher land and housing prices, 4) Support the emerging network of cities, 5) Recognize immigration as a development need, 6) Support the urban economy, 7) Monitor quality and affordability of housing and basic services, 8) Link local budgets to physical urban planning, 9) Strengthen urban institutions, partnerships, and programmes, 10) Develop a culture of urban resilience, 11) Confront different types of poverty and inequality, and 12) Ensure city-level data collection for performance benchmarking.

# CHAPTER 1: URBANIZATION AS A SUSTAINABLE DEVELOPMENT STRATEGY FOR KAZAKHSTAN

Cities bring people together, and when people are closer together, they grow stronger. This is the power of urbanization, with many ideas and concepts underlying this fact. This chapter answers five questions in this regard: What is sustainable urbanization? What is unique about Kazakhstan's urbanization? Which are the relevant global and national policy agendas? Why is urbanization an appropriate accelerator for Kazakhstan? What are the current approaches to urban management?

## 1.1. What is sustainable urbanization?

*Figure 1: Conceptual definition of sustainability*



### *What is sustainability?*

Development is only sustainable if it strikes a balance between the three pillars of sustainability: economic, environmental, and social.

Too much emphasis on one dimension at the expense of the others will make achieving sustainable development a much harder endeavour. A focus on the economic agenda will drive the viability of certain actions, but may compromise equity and liveability. Environmental goals can be difficult to afford or may succeed at the expense of those with less resources. Overemphasis on delivering social results, while desirable under the SDG principle of 'leaving no one behind', can become unattainable if they are economically unviable, or undesirable if they are environmentally insensitive. Truly sustainable approaches must strike a careful balance between the three pillars; with the inevitable balancing of undesirable trade-offs managed purposefully, to benefit human development.

### *What is urbanization?*

Simply put, urbanization is living together to grow stronger. As cities become more populated, economies become more productive, efficient, and diverse; new forms of production and consumption are invented; knowledge is broadened; and innovation occurs. While urban areas face greater pollution, they are also the central catalysts for change. Cities also reduce pressure on land use, and can have a smaller environmental footprint per capita<sup>1</sup> if developed utilising green technologies. At the same time, population density helps lower the cost of

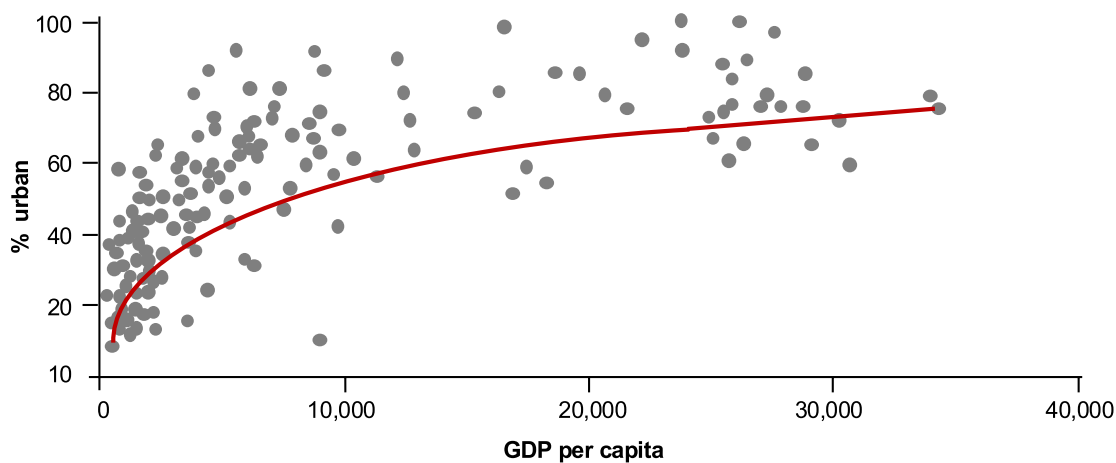
taxation, of providing public services, and of enforcing environmental regulations. Moreover, cities support a more direct engagement between government and citizens, which promotes the expansion of freedoms, thereby fostering human development.

Ample cross-country evidence demonstrates the positive link between urbanization and economic growth, as well as the positive effect of agglomeration on productivity. This supports the idea that urbanization, if effectively managed, can accelerate sustainable development. Highly urbanized countries show higher levels of economic development across regions with different political, geographical, and cultural realities. In fact, very few countries achieve income levels of USD10,000 per capita before becoming 60 per cent urban, so it is fair to say that even though urbanization does not guarantee economic growth per se, sustained economic development does not happen without urbanization (Buckley and Annez, 2009). In other words, while many countries urbanize without getting rich, none become rich without urbanizing. Kazakhstan's 2050 Strategy taps into this potential and links economic growth and diversification with urbanization.

However, it should not be understated that while urbanization is necessary, the type of urbanization is what is critical. Without good urban policies, cities may create concentrated social and environmental problems without generating productivity growth. In successful urbanization, growing cities generate (and benefit from) productivity growth, while distributing social and ecological benefits.

The agglomeration effect linking urbanization, productivity and economic growth is not automatic; it must be properly managed. Without effective policies and infrastructure in place, city growth can lead to "false urbanization" (CER, 2013). For instance, "Recently, a strategy to urbanize the country faster is to add rural areas to urban administrations rather artificially. All this does is to spur the creation of informal settlements" (Sagimbayeva, 2018). Growing the size of cities administratively increases the local government's budgetary resources without necessarily expanding their capacities, which may lead to backlogs in service and infrastructure provision.

Figure 2: Relationship between GDP per capita and urbanization across countries in 2000

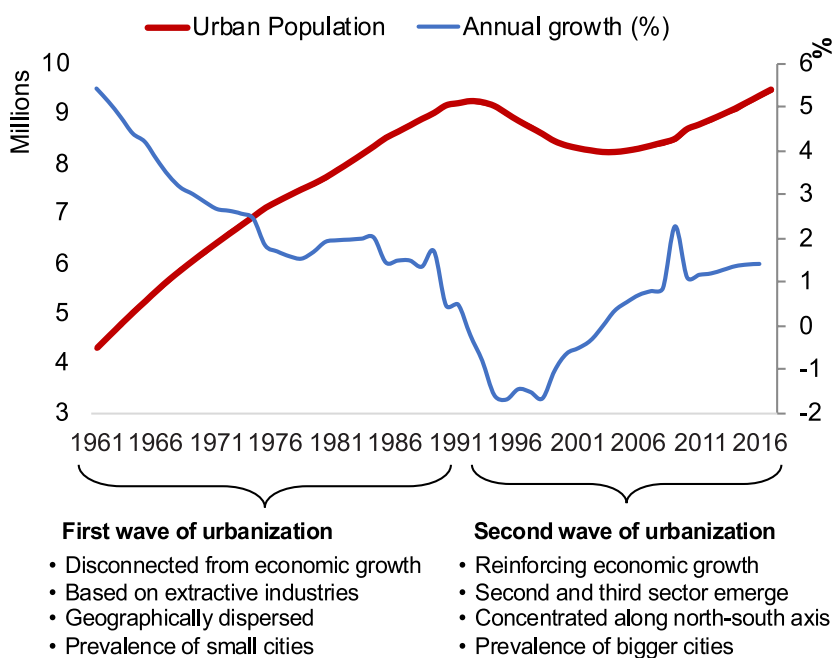


Source: WBI, 2005 and Penn World Table 6.2 (Buckley and Annez)

Urbanization must be managed to enable governments to balance positive and negative externalities. The risks of urbanization (rising inequalities in income, wealth and gender, housing affordability challenges, congestion, and pollution) must be forestalled by well-designed policies that reap the benefits of urbanization (higher productivity, economic diversification, new market creation, better amenities). Local governments must also realize that successful, dynamic cities attract rich and poor people, both seeking opportunities. Thus, cities ought to ensure both productivity and living standards are continuously on the rise. The problems and development differentials brought about by urbanization can be outweighed if managed with appropriate public policies, and must be continuously managed and monitored, what is indicated, for example, in published Asia-Pacific Human Development Report, (NHDR: Asia-Pacific, 2016)

## 1.2. What is unique about Kazakhstan’s urbanization?

Figure 3: Urban Population and Economic Growth in Kazakhstan (1960-2016)



Source: Adapted from World Development Indicators, World Bank

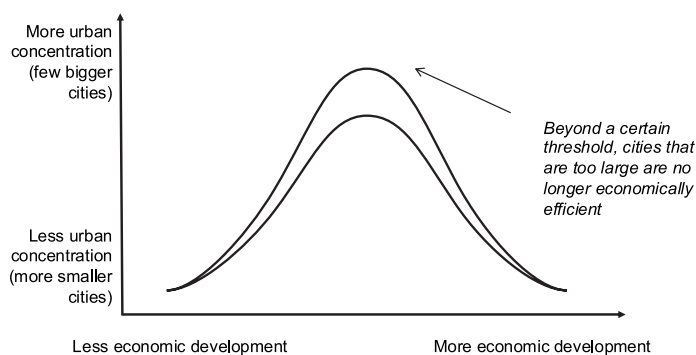
Over the last 50 years, two radically different waves of urbanization can be identified (Figure 3). The first was directly linked to *gradostroitel'stvo* (Soviet urban planning) ending with independence in 1991. In this wave, city growth was disconnected from economic growth. Urbanization was based on top-down industrial extractivism, which served the Soviet regime; it was dispersed, giving prevalence to small-sized cities. The second wave of urbanization was one of the highest post-independence urbanization rates in the Central Asia region; a reaction to one of the sharpest post-independence population declines. The second wave

was linked to the nation-building process: designating Astana as the capital, Oralman repatriation (ethnic Kazakh returnees), the promotion of a multi-ethnic society, as well as the rise of entrepreneurialism and the market economy. Unlike the first wave, the second wave urbanization grew in parallel with the economy, revealing signs of economic diversification, and giving prevalence to bigger cities.

City size matters in terms of economic development. Cross-country, panel-data studies demonstrate that economic development is higher in big cities and that “cities, especially large ones, are the drivers of long-run economic growth” (OECD, 2015). However, benefits start to decrease after a certain point ((Duranton and Puga, 2004) and (Henderson, 2003)), suggesting

urban primacy can at some point become disadvantageous. After an optimal level of urban primacy has been achieved, developed countries show increased urban polycentricism; they benefit from having multiple specialized urban centres (Figure 4). It is better for countries which are growing economically to have fewer big cities, but once a certain level of economic development level is secured, it becomes beneficial for a territory to have more smaller cities.

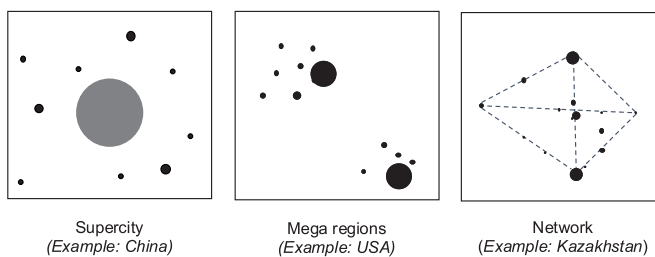
Figure 4: Policy Aims in Terms of Urban Concentration



Adapted from: (Duranton and Puga, 2004), (Henderson, 2003), (OECD, 2015), others

Countries should strive to have different models of urban concentration. Kazakhstan’s larger cities might not be considered big when compared to supercities, such as Shanghai and Beijing (with over 20 million inhabitants) or the mega-regions of the New York Tri-State (with a population of nearly 55 million). Thus, rather than using a fixed parameter applicable across different geographical, social, and political contexts, the optimal point should be thought of as a threshold that is context-dependent and is subject to technological and policy changes.

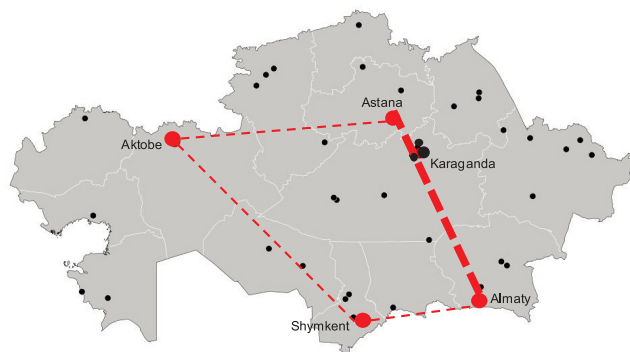
Figure 5: Models of urban concentration



Adapted from: (Henderson and Venables, 2009), others

More importantly, the evidence supports the idea that countries should consider their cities as a system, where growing cities generate economic benefits that “extend beyond their borders. These spillovers from larger cities to smaller cities or nearby regions are sizeable” (OECD, 2015). A country that understands its system of cities can manage and take advantage of its own model of urban concentration, emphasising the connections between smaller-sized cities that, by virtue of their relationship, can generate spillover effects. “The most relevant measure for such spillover effects is not distance but connectedness ... the density of the urban system might offset – or even contribute – to the lack of very large cities” (OECD, 2015).

Figure 6: Kazakhstani network of large cities’ agglomerations

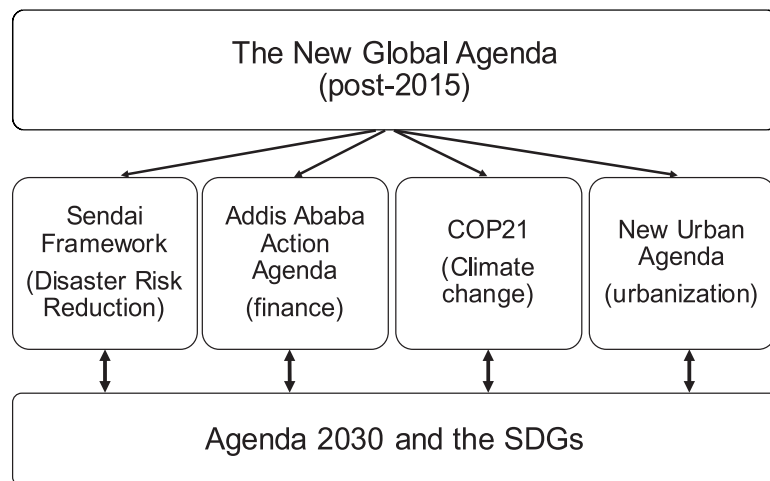


Kazakhstan’s urban concentration patterns reveal a networked model of urban concentration, of cities of 0.5 and 2 million inhabitants: four interconnected “hubs” (Almaty, Astana, Shymkent and Aktobe) and their interconnection “beams” (RoK, 2011, 2014, 2016) (Figure 6). The networked model resonates with the Kazakh traditional settlement

pattern (Kalybekova, 2015), coincides with the Soviet urbanism legacy (Castillo, 1997), and also reflects the geopolitical positioning of Kazakhstan as a New Silk Road. Moreover, a networked model – a system of cities – is more attuned to 21st century urbanization, characterized by modest scales that ease the distribution of benefits and are adaptable to innovative planning and management approaches.

### 1.3. Which are the relevant global and national policy agendas?

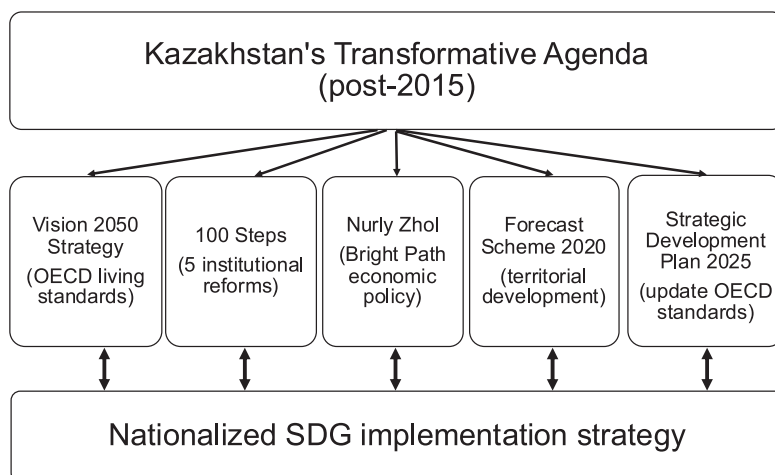
Figure 7: The New Global Agenda reinforces “localization”



The New Global Agenda is more encompassing, interconnected, and committed to multi-stakeholder partnerships than ever before. The 2030 Agenda of the Sustainable Development Goals reaches further and is broader than its predecessor, the Millennium Development Goals (MDGs). It calls into action poor, middle-income, and rich countries alike to participate in a truly global aspiration: “we can be the first generation to succeed in ending poverty; just as we may be the last to have a chance of saving

the planet” (UNGA, 2015). The agenda is also more complex and integrated. Promisingly, the Agenda was unanimously adopted by 193 Member States, including Kazakhstan.

Figure 8: National Transformative Agenda, “The Kazakhstan Way”



Kazakhstan’s Transformative Agenda consists of a set of policy documents that envision:

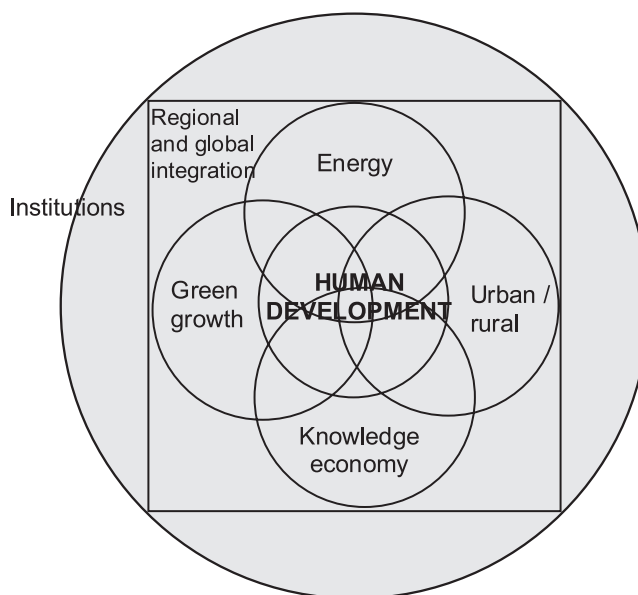
- A 4.5 increase of the GDP per capita from USD 13,000 to USD 60,000;
- A doubling of the share of non-oil exports from 32 per cent to 70 per cent;
- A fivefold increase in productivity from USD 24,500 per worker to USD 126,500;

- An increase in the share of SMEs contribution to the GDP from 20 per cent to 50 per cent;
- A 50 per cent decrease in energy consumption (switching to green energy);
- An increase of urbanization from 56 per cent to 70 per cent.

These goals are indicated in the 2050 Strategy (ROK, 2012) and summarized in the National Report to the United Nations Habitat III Conference (ROK, 2016:34).

In the face of such an ambitious and complex national agenda the question of implementation is crucial. Recognizing the need to manage priorities, the government has put human development at the centre of sustainable development. Kazakhstan’s Transformative Agenda is committed to the principle of “leaving no one behind” as both. The human development approach reinforces the social pillar of sustainable development, calling for inclusive sustainable development, where the benefits of development mean expanded freedoms for all. As explained at the beginning of this chapter, another important aspect in the implementation of the Transformative Agenda is the issue of balancing the three dimensions of sustainable development, managing undesirable trade-offs while putting people at the centre of all action.

*Figure 9: Seven Priorities of the 2050 Strategy*



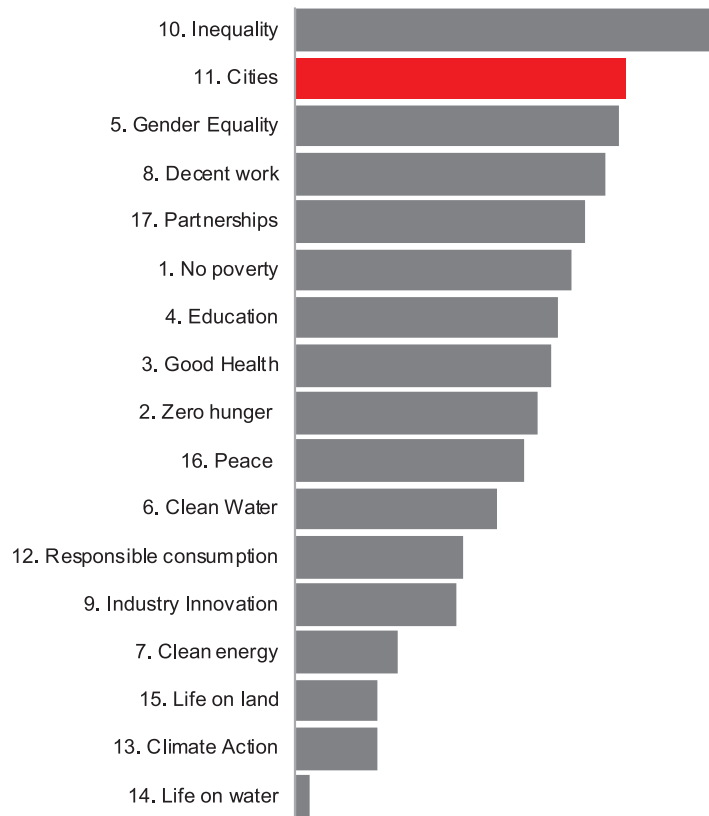
(Aitzhanova et al, 2014)

Perhaps the most pressing implementation issue of the agenda is how to define strategies which achieve sectoral objectives that are both integral and indivisible. How will the country ensure the bold transformations of its Transformative Agenda are mutually reinforcing? This report intends to provide the answer.



## 1.4. Why is urbanization an accelerator for Kazakhstan’s human development?

Figure 10: Global Interaction Assessment Between all SDG Goals and Targets (count)



(UNDG-MAPS, 2017)

As governments move from vision to implementation, from target setting to localization of agendas, they are compelled to engage with complexity and interconnectedness. This “implies, more than ever, a need to go beyond silos and take an integrated approach to development interventions ... it requires thinking through the connections and synergies across the goals and highlighting how action in one area draws dividends in others” (UNDP, 2017). But not all SDGs are equally relevant to a country; some are more intensely connected to other goals and their targets, while others are less well connected to the rest of the system. It is increasingly recognized that SDG 11 is particularly well connected. Following Nilsson et al., (2016) methodology, UNDG assessed the level of interaction between the 17 goals and 169 targets globally, concluding that not only is SDG 11 one of the most interconnected goals, it is also the most cross-sectoral (UNDG, MAPS, 2017). Experts estimate that “65 per cent of the SDG Agenda may not be fully achieved without the involvement of urban and local actors, [so]... Concentrating sustainable development efforts in cities is not only a practical imperative, it is also a strategic choice” (SDSN, 2016). Ultimately, cities are where the battle for sustainable development will be won or lost.

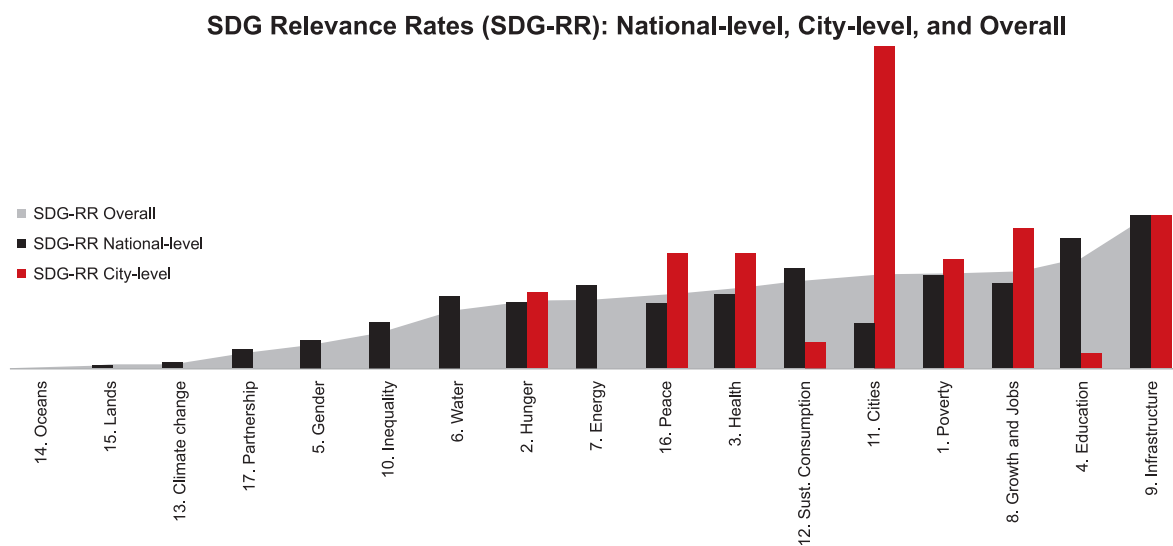




Figure 12: Rapid Integrated Assessment of city-level policies and SDG alignment

		SDG 11 alignment, by targets and actions									
Selected city-level programmes and strategies	Number of SDG 11 targets covered	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.a	11.b	11.c
Development Programme «Almaty - 2026» <sup>b</sup>	9	 Affordable housing <b>Goal 23:</b> The purpose of access to housing and social infrastructure; <b>Goal 27:</b> The purpose to provide consumers with quality and reliable public services;	 Safe and sustainable transport systems <b>Goal 25:</b> Reducing the level of congestion of the road network; <b>Goal 26:</b> The purpose of improving mobility and accessibility to public transport;	 Sustainable urbanization <b>Goal 1:</b> Ensure socio-economic development of Almaty city;	 Monuments of natural and cultural heritage <b>Goal 16:</b> The purpose of preservation of its historical and cultural heritage and the development of the spheres of art; <b>Goal 17:</b> The purpose of development of mass sports;	 Protect population <b>Goal 21:</b> The purpose of safeguarding public safety in the case of man-made accidents and natural disasters;	 Air Quality <b>Goal 28:</b> The purpose of lowering air pollution levels; <b>Goal 29:</b> The purpose of creation of a modern management system and waste and ensuring proper sanitary conditions of urban areas; <b>Goal 31:</b> The purpose of environmental rehabilitation of small rivers and water bodies of the city of Almaty;	 Green zones <b>Goal 30:</b> The purpose of improvement and greening the city;	 Links between urban and peri-urban areas <b>Goal 3:</b> Development of food belt;	 Climate change mitigation	 Green construction <b>Goal 24:</b> The purpose of ensuring high quality standards for the Residential areas;
Astana 2016-2020	6	<b>Goal 5:</b> Increase the productivity of enterprises in the housing and utilities sector to provide the public with affordable public services. (Within Direction 4. The city is comfortable for life). <b>Goal 3:</b> Increasing the affordability of housing. (Within Direction 4. The city is comfortable for life)	4. The city is comfortable for life). <b>Goal 3:</b> Increasing affordability of housing. (Within Direction 4. The city is comfortable for life)	Smart and innovative city (Within Direction 1. A modern competitive city <b>Goal 1:</b> Increasing the stability and competitiveness of the economy of the capital city)	<b>Goal 4:</b> Development of Astana as a regional cultural center. (Within Direction 2. Socially-oriented, cultural and creative city)		<b>Goal 1:</b> Maintain a clean environment. (Within the framework of Direction 5. City with a favorable ecological environment)	<b>Goal 2:</b> Development of public spaces through the transformation of the urban environment. (Within Direction 4. The city is comfortable for life)			
Shymkent 2016-2020	5	<b>Task 1:</b> Increase the volume of construction, improve its quality. <b>Task 3:</b> improvement of basic housing services (Within the framework of the goal - Creation of favorable conditions for the well-being of local population and visitors of the city. <b>Direction 3:</b> Development of the infrastructure complex).	Development of transport infrastructure. Direction: Infrastructure	<b>Task 1:</b> Convenient location of the population. (Within the framework of the goal - Improvement of the vital activity of the population in the agglomeration zone. <b>Direction 6:</b> Development of agglomeration of the city of Shymkent).	<b>Task 6:</b> Development of national language. (Within the framework of the goal - Increasing the competitiveness of the city's human resources and providing employment, improving the living standards of the city's residents. <b>Direction 2:</b> Development of social sector)		<b>Task 1:</b> Environmental protection. (Within the framework of the goal - Reduction of the anthropogenic pressure on the environment. <b>Direction 4:</b> Environmental protection and land resources).	<b>Task 1:</b> Environmental protection. (Within the framework of the goal - Reduction of the anthropogenic pressure on the environment. <b>Direction 4:</b> Environmental protection and land resources).			
Stepnogorsk 2016-2020	5	Ensuring the availability of housing and the development of construction. Direction: Infrastructure. Providing the population with quality basic housing services. Direction: Infrastructure	Development of transport infrastructure. Direction: Infrastructure		Ensuring a high level of activity in the cultural sector. Direction: Social sector. Language Development. Direction: Social sector		Ensuring environmental safety and environmental protection. Direction: Ecology and land resources Rational use of land. Direction: Ecology and land resources	Ensuring environmental safety and environmental protection. Direction: Ecology and land resources			
Petropavlovsk 2016-2020	5	<b>Goal 16:</b> Making housing affordable. <b>Direction 4:</b> Development of the city's infrastructure complex <b>Goal 17:</b> Improving the provision of consumers with quality basic services	<b>Goal 18:</b> Formation of a developed transport infrastructure	<b>Goal 1:</b> Sustainable development of the city's economy. Development of the city economy	<b>Goal 10:</b> Enhance the competitiveness of the sphere of culture and art		<b>Goal 19:</b> Ensure the improvement of the environment. Direction 5. Ecology and land resources				

Figure 13: SDG Relevance Rates for national policies, city policies and overall, calculated using UNDP-RIA analysis



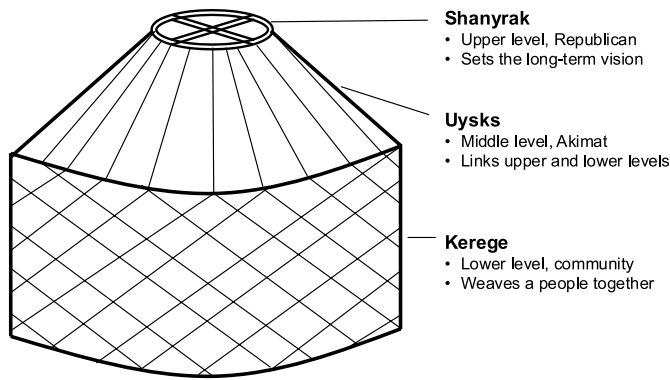
SDG Relevance Rates are calculated by dividing the number of mentions to SDG indicators identified in each of the policies reviewed, and dividing them by total number possible mentions per SDG goal across the 23 policies studied by the UNDP-RIA analysis (2018).

The SDGs are the ‘what’ of sustainable development: they address what countries and localities would like to achieve for every person. As SDGs are tightly interconnected it is almost impossible to prioritize one over another and, indeed, to do so would make little sense. What is more important is SDG implementation and sequencing, as trade-offs, synergies, and feedback loops are inevitable. SDG accelerators are the ‘how’ of development; they identify the strategic paths to the desirable goals. Accelerators determine the policy focus for achieving results faster and better, with more chain reactions across different sectors. Thus, SDG accelerators are policy strategies with a substantial positive multiplier effect. They increase the speed of attaining the sustainable development agenda; they unleash unused capacity or create preconditions conducive for progress, they remove bottlenecks, underlying constraints or obstacles, or they boost dynamic interactions. For a detailed analysis on the interactions between different SDG goals and targets, as well as on the salience of the SDGs in national and subnational policies, please refer to the Annex.

<b>SDG Relevance Rates by mentions in Kazakhstan’s policy documents</b>			
	Overall	National	City
1. Poverty	15.5%	15.0%	17.9%
2. Hunger	10.9%	10.5%	12.5%
3. Health	13.0%	12.1%	17.3%
4. Education	17.8%	21.1%	2.5%
5. Gender	3.9%	4.7%	0.0%
6. Water	9.8%	11.8%	0.0%
7. Energy	11.3%	13.7%	0.0%
8. Growth and Jobs	15.6%	14.0%	22.9%
9. Infrastructure	25.0%	25.0%	25.0%
10. Inequality	6.2%	7.5%	0.0%
11. Cities	15.2%	7.4%	52.5%
12. Sust. consumption	14.1%	16.2%	4.2%
13. Climate change	0.7%	0.9%	0.0%
14. Oceans	0.0%	0.0%	0.0%
15. Lands	0.4%	0.4%	0.0%
16. Peace	12.0%	10.5%	18.8%
17. Partnerships	2.5%	3.0%	0.0%

*Author’s calculations with data from: (UNDP-RIA, 2018)*

Figure 14: Analogy between yurt construction and zhurt policy



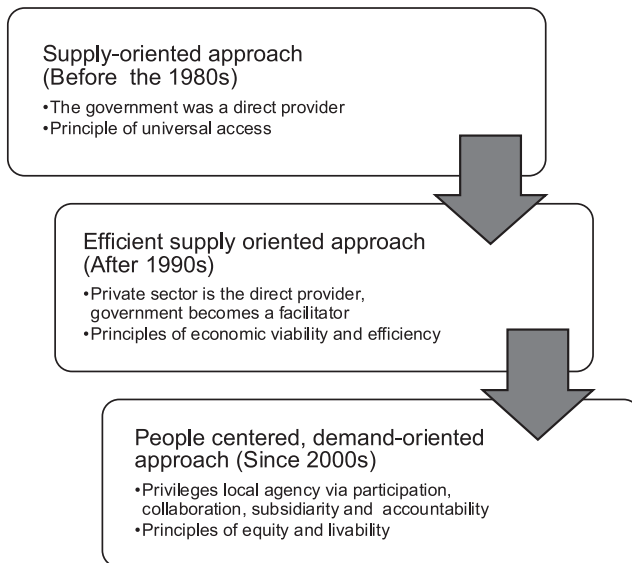
In Kazakhstan, the Akimat represents the intermediate level of government, sitting between the Republican level, setting the long-term national vision, and the community level, where the needs and possibilities are. Cities have the right scale of implementation for sustainable development because they bring together multi-scalar governance structures that are integrated at the community level, closer to the people, where the solutions ought to reach. The focus on city governance “implies some

devolution of power” (ICSU, 2015 and RoK, 2011); it enables a quicker response to local issues and strengthens accountability. “Zhurt” policy, i.e., territorial/settlement policy, is multi-scalar.

Because cities concentrate populations, if appropriately managed<sup>2</sup> (with suitable urban planning and control, as well as effective regulations), they can potentially minimize the human environmental footprint while accelerating economic activity. Appropriate urban infrastructure is a vehicle for distributing social well-being while supporting economic growth. Moreover, urban areas are natural laboratories of social transformation and innovation.

### 1.5. What are the current approaches to urban management?

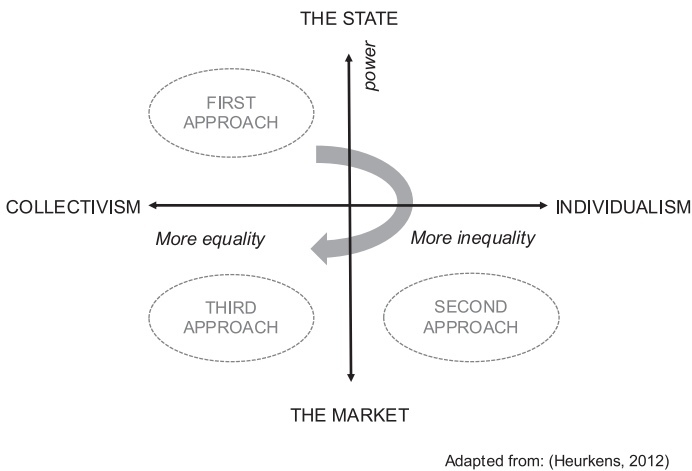
Figure 15: Three approaches to urban management



Over the last four decades, urban sector policies have transitioned through three distinct phases. Before the 1980s, urban policy actions and planning initiatives followed an approach focused on supply. This first approach operated under the principles of universal access in response to a sizeable and growing demand, where the government was a direct provider of housing and urban services. After the 1990s, the concern for efficiency encouraged the private sector to become involved in the provision of housing and other urban services. Thus, the role of the government in the urban sector began to decline, with it becoming a mere facilitator of a market-driven system of provision for housing and other urban services. In most cases, this second approach advocated for

privatization, liberalization, and decentralization, all processes thought to enhance efficiency in the supply of housing and urban services.

Figure 16: Shifts in power and values between three approaches of urban management



Though it advanced and spread swiftly, confirming its economic viability, the second approach revealed shortcomings in terms of equity and liveability. With the turn of the century a third, new approach, has been gaining traction in urban development; a human-centred, demand-oriented approach, operating on principles of community participation, coordinated collaboration schemes, increased accountability from below, and enhanced local capacity. As Kazakhstan transitions out of a model of urban management, based on the central government provision of goods and services, into a market-based

model, it is fundamental to consider preserving communitarian and earth-friendly values, with a people-centred perspective.

Contemporary urban management must be mindful of the cost and benefits of each approach to successfully cope with the challenges of truly sustainable development. Hence, it is important to recognize the risks associated with each approach, drawing from the experiences of other countries. The 1972 demolition of Pruitt-Igoe in St. Luis, Missouri, in the United States, came to symbolize the failure of government-supplied social housing. Unaffordable maintenance costs, poor quality construction, structural poverty, and racial segregation, led to high criminal activity in these housing projects. After Pruitt Igoe, policy design began to explore high-density, low-rise buildings, communal spaces that were easy to appropriate, and racial integration strategies.

A salient example of the failure of the market-based “efficient-supply” approach is what is known as the “people without houses and houses without people” phenomenon, notable in China, Spain, Egypt, Uzbekistan and Mexico. Here, public subsidies are given to developers to ensure large numbers of low-income housing are produced efficiently. However, this policy fails if projects ignore demographic needs, are of poor quality, poorly serviced and

Figure 17: Pruitt-Igoe: failure of the modern, direct supply approach



Source: US Department of Housing and Urban Development

Figure 18: “Houses without people”: failure of the second approach



Lomas de Anza housing project, Nogales Sonora State, Mexico. Source: Archive PUEC UNAM



disconnected from jobs, thus, people prefer to abandon them. Mexico has more than five million government-facilitated empty houses. The danger of producing “too much housing but little city” (Ziccardi, 2016), is that urban policy betrays its potential to serve as social policy.

Lastly, a people-centred, demand-oriented approach should not consider “people” as a homogenous group, but instead should respond to socio-economic, ethnic, and gender-based differences. For instance, interventions to reduce urban poverty tend to focus on people’s material circumstances (Tacoli, 2012). While this is important, a gender or a migrant perspective can deepen our understanding of disadvantage and create empirical evidence for informed policies to reduce inequalities. This will help us understand why women tend to concentrate in lower quality, more precarious forms of paid work, despite having a greater participation in the labour force. A people-centred approach to urbanization creates policies and planning tools that account for disadvantages based on gender, socio-economic status or ethnicity.

Given limited resources and capacities, and in the face of rapid urban growth, public authorities should adopt a strategy which focuses their attention on a narrow set of urban planning issues that can be followed through efficiently. Equally, rather than attempting to over-plan and over control, local governments should focus on those aspects that cannot be achieved by other actors or partnerships alone, such as transport planning, setting aside urban land for future amenities (roads, utilities, parks and social services), and assuring logistics and utility corridors.

### **Box 1. Brief insight on the extent of Housing Programme 7-20-25\***

The recently launched 7-20-25 housing programme (7 per cent interest rates, 20 per cent down payment, and a 25-year term loan) is a long-term, self-amortized mortgage policy. Quite different from the usual housing instruments available today in most European countries, this programme could mark the beginning of a secondary mortgage market (Schwartz, 2018).

In terms of affordability, the programme seems targeted to middle-income households, rather than those below the average income (SDG target 11.1). Also, the policy assumes that people have sufficient savings to cover 20 per cent of the housing cost. While this is relatively standard internationally, it also means that the target population are people with stable, formal incomes, such as those in the public sector; not necessarily the norm according to some critics. The regional differentiation envisioned by the programme is to be celebrated. Regional variations of the required monthly payment amount can vary as much as 20 per cent. This acknowledges differences in housing prices, but also and more prominently, income differentials, which can be quite substantial in Kazakhstan (see chapter 2). However, this homeownership programme also sidelines the much needed and called for incentives to develop the rental market (UNECE 2017, OECD 2017). Programme 7-20-25 is also initially envisioned as a construction programme, which appeals to contractors and real estate developers, leaving aside the used housing market, and thus does not necessarily prioritize redevelopment, upgrading, nor densification of existing urban areas. If this policy instrument is not further complemented, it may run the risk of encouraging inefficient land-use consumption patterns (SDG target 11.3b)

In sum, this is a clear example of a supply-oriented approach to housing provision. Indeed, the policy was designed with bank input (Akishev, 2017), rather than springing from a detailed knowledge of the demand’s needs and taking into account a broader scope of civil society participation (SDG target 11.3a).

\* - as of 2018

## CHAPTER 2: ASSESSING URBAN PERFORMANCE IN KAZAKHSTAN

Kazakhstan's transition since gaining independence in 1991 is remarkable. The country has transitioned from lower- to upper-middle-income status in less than two decades, poverty incidence has fallen sharply, and the country now ranks very high in human development. With a 2016 GDP per capita of USD 7,714.8, Kazakhstan comes close to Turkey and the Russian Federation in economic activity. However, the economy is centred around extractive industries (oil, gas, mining) which represent 65 per cent of Kazakhstan's exports (OECD, 2017), creating exposure and dependence on the volatile international market. In addition, not all the country's 16<sup>3</sup> regions have progressed evenly in this process with some even falling behind. Regional inequalities in economic growth, health, innovation, infrastructure, education and gender are some of the country's main challenges in fulfilling the 2030 Agenda and accomplishing sustained development.

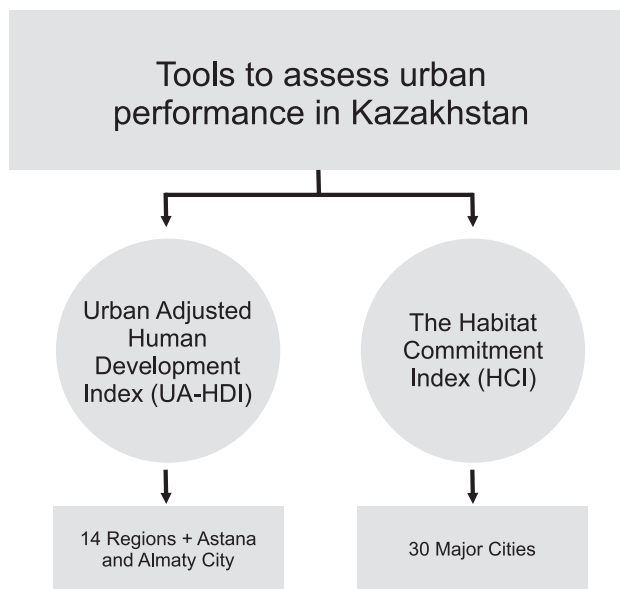
Around the world, cities are at the frontline of such challenges. Home to more than half of the world's population and responsible for 70 per cent of carbon emissions, they are where the battle for sustainable development will be won or lost. This is especially the case in Kazakhstan, which expects to increase the share of its urban population from 56 per cent in 2016 to 70 per cent by 2050 (Strategy "Kazakhstan-2050"). Considering the challenges and transformations that Kazakhstan's cities already encounter, such urban growth estimates are daunting. Many cities in Kazakhstan experience dangerous levels of air pollution and infrastructure in urgent need of repair and investment. Young Kazakhs struggle with underemployment and many highly skilled and well-educated citizens have resorted to emigrating to Russia, Western Europe, or the United States searching for better opportunities.

Local governments could turn these challenges into opportunities, building on the country's great reservoirs of dynamism and talent. Addressing several interrelated urban challenges, such as transport, public utilities, the quality of public space, and housing, will help make its cities more sustainable and inclusive. Cities such as Stepnogorsk, Almaty city, Kokshetau, and Astana are already performing well, setting the frontier of what can be achieved in light of local capacities.

Seeking to identify priorities for action at the local level, this chapter quantitatively assesses Kazakhstan's urban areas and cities in light of the new global goals described in chapter 1 and, with a focus on human development, considers the following questions:

- What is the current level of human development across urban areas in Kazakhstan's regions?
- How do cities perform, and which cities are leading the way in sustainable development?
- What challenges need to be addressed to foster human development in cities?

Figure 19: Indices used for the analysis



To address the above questions and identify policy recommendations, the UA-HDI (to measure human development in urban areas of Kazakhstan’s 16 regions) and the HCI (to assess the fulfilment of Habitat and SDG related goals in 30 major cities) were again applied.

Both indices are composed of multiple indicators, adjusted to fit Kazakhstan’s local context. As the UA-HDI evaluates urban areas by regions and the HCI assesses individual cities, the two indices complement each other. The indices also serve as a tool for benchmarking progress on different aspects of sustainable development and help city administrations prioritize policy and investment areas.





## 2.1 Measuring human development in urban areas at the regional level: The Urban-Adjusted Human Development Index

The framework for Kazakhstan’s Urban Adjusted Human Development Index (UA-HDI) is based on the three dimensions of the traditional Human Development Index – a long and healthy life, access to knowledge and a decent living standard – but includes a fourth dimension: the built environment. There is growing consensus that the built environment plays a significant role in well-being. A city’s welfare and the capabilities of city dwellers are shaped by the urban spatial structure and the amenities a city provides. The built environment – a term used in urban studies literature to reflect human-made structures that affect aspects of city life – encompasses buildings, water/electricity distribution systems, roads and transportation systems, and public spaces that create community (Mouratidis, 2018). Where you live makes a difference. Evidence from the United States, for example, found that children living in deprived neighbourhoods had less chances of upward mobility, higher rates of depression, anxiety and obesity (Chetty et al., 2014). Moreover, the built environment is closely linked to air pollution, physical activity, community, social capital, and health disparities (Burton, 2011).

The UA-HDI assigns equal weight to the four human development dimensions, on the normative assumption that human beings value these dimensions equally.<sup>4</sup> The four dimensions and their indicators are depicted in Table 1 and defined in the following paragraphs.



Table 1: The Urban-Adjusted Human Development Index (UA-HDI)  
4 dimensions, 13 indicators, 16 regions

	 <b>LONG AND HEALTHY LIVES</b>	 <b>KNOWLEDGE</b>	 <b>LIVING STANDARD</b>	 <b>BUILT ENVIRONMENT</b>
<b>DIMENSIONS</b>				
<b>INDICATORS</b>	Life expectancy (SDG 3)	Mean Years of Schooling Index (SDG 4.3)	Average Income (SDG 10.1)	Investments (SDG 9)
	Infant Mortality (SDG 3.2)			Green Space (SDG 12, 13, 15, 11)
	Mortality Causes (SDG 3) (circulatory, respiratory, digestive system, or cancer)		Poverty line (SDG 1)	Public vs Private Transport (SDG 9, 11)
<b>RELATED SDGs</b>	<b>3</b>	<b>4</b>	<b>8, 10</b>	<b>6, 9, 11, 12, 13, 15</b>

Long and healthy life is measured using six indicators. The first indicator, life expectancy, is an estimate of the average years a newborn could be expected to live, based on their year of birth. The second indicator, infant mortality, refers to the deaths of young children per 1,000 live births. The remaining four indicators look at Kazakhstan’s most common mortality causes, namely, the circulatory system, the respiratory system, the digestive system, and neoplasms (cancer). The World Health Organization (2016) estimates that these four mortality causes are above average in Kazakhstan compared with other countries in the region. Circulatory diseases, including diabetes, and cancer account for about 85 per cent of all deaths in Kazakhstan. One of the most significant public health challenges is the legacy of poor environmental management and the testing of nuclear weapons by the Soviet Union; this led to several catastrophic environmental health disasters with lasting effects (Aringazina, 2012).<sup>5</sup> Today, the most pressing challenges for public health are of an organizational, political, and philosophical nature. According to the WHO (2016), the “biggest challenge of the country’s health sector in the domain of public health lies in clarifying, coordinating and streamlining the roles and responsibilities of different agencies responsible for public health and health promotion activities.”

The level of knowledge is assessed using Mean Years of Schooling (MYS). MYS indicates the average number of completed years of education of a country's population, excluding years spent repeating individual grades. MYS estimates cover the population aged 25 years and older and has been used since 2010 as one of the two education indicators in the calculation of the HDI; it replaces the adult literacy rate used in the calculation of the HDI until 2009 (UNDP, 2010).<sup>6</sup>

Based on Kazakhstan's educational system, the educational levels included in the knowledge dimension are:

- Primary education
- Lower secondary education
- Upper secondary education
- Higher education<sup>7</sup>

Kazakhstan has made significant achievements in providing access to primary and secondary education, and according to UNESCO (2015) has reached universal coverage. However, UNICEF (2018) and the OECD (2015) raise concerns about the quality of education due to language barriers, overcrowded classes in urban areas, poorly trained teachers, and dated classroom equipment.<sup>8</sup> The low average performance in the 2012 Programme for International Student Assessment (PISA) test also suggests that there is considerable room to improve learning outcomes. Assessing higher education coverage is therefore more revealing and illustrates the country's preparedness in meeting the needs of a labour market in its transition from being resource based to a service sector driven economy, fostering synergies between education, science and industry.

Standard of living is traditionally measured using a country's gross national income (GNI) per capita. As GNI is not disaggregated by rural and urban, average urban real incomes and the national poverty line were used as proxy indicators for Kazakhstan. The economic law of diminishing marginal utility suggests that as income increases individuals gain a correspondingly smaller increase in satisfaction and happiness. To account for this marginal utility, a logarithmic function was applied to average out real incomes.

The built environment is measured using seven indicators, organized into four groups. The first group of indicators pertains to access and quality of basic services (access to sanitation, the quality of drinking water, and the quality of the heating system), while the second group examines green space, measuring the ratio of green and public space to the city as a whole. The third group relates to public transport, for which a ratio of trips in private cars compared to trips on public transportation was used. The fourth group concerns public and private investments in fixed assets and housing; a useful proxy for maintenance of existing infrastructure and the housing stock.

The HDI and the UA-HDI were calculated for urban areas in Kazakhstan's 14 regions and Astana and Almaty, using the most recent available data from the country's Committee on Statistics. The two cities are included in this analysis, as the 1993 law "On Administrative and Territorial Structure of the Republic of Kazakhstan" granted them "republican status", according them the same status as regions.

## Box 2. Brief insight into UNECE's Kazakhstan Housing Sector Profile 2018

Since 1991, housing construction in Kazakhstan has undergone many ups and downs. Immediately after gaining independence, construction decreased due to the disruption of economic links with other former Soviet countries. Then, in the mid-2000s, the easing of mortgage regulations and housing construction programmes led to a significant increase in new units. This trend stalled during the 2008 global economic and financial crisis, but has slowly recovered, largely due to the national Nurly Zher housing construction programme.

Despite national efforts and investments, Kazakhstan continues to experience housing shortages. In addition, housing affordability is an increasing concern for both low- and middle-income households. It is estimated that pressure on the existing housing stock will increase even further in the coming years as more people move to cities. It is therefore important to find innovative solutions to the existing housing accessibility and affordability challenge. An in-depth review of Kazakhstan's housing profile by the United Nations Economic Commission for Europe (UNECE, 2018) suggests that developing an affordable and social-rental housing sector is an important step in the right direction.

Another top priority in Kazakhstan's housing sector is the improvement of energy efficiency and energy-saving schemes. Today, the country's residential sector is the largest consumer of heat and electrical power, with consumption levels far exceeding that of France, Germany and England. As most of the housing stock date back to the 1950s to 1990s and has never received proper maintenance or undergone modernization, they are far from energy efficient. Energy efficiency needs to be increasingly considered in the construction of new units, but also in the maintenance of existing ones.

For more information on these issues, as well as housing legislation, maintenance, management and the financial framework of the housing sector, please see UNECE's 2018 Country Profile on the Housing Sector.

The UA-HDI analysis has two purposes. First, it provides insight into the level of urban human development in each region and allows for comparisons across regions. Second, comparing results from the HDI and the UA-HDI highlights the dissatisfactory state of Kazakhstan's built environment. The scores range from 0-1, with 1 being the highest possible score. The UA-HDI classifications are based on fixed cut-off points, which are derived from quartiles of the distributions of component indicators. The cut-off points are UA-HDI of less than 0.25 for low human development, 0.25-0.5 for medium human development, 0.5-0.75 for high development and 0.75 or greater for very high human development. The average UA-HDI score for Kazakhstan is 0.58, ranking it in the high human development category. Alone, that number is not especially meaningful, but it provides a helpful benchmark for understanding the variation that exists among regions.

### 2.1.1. What does the UA-HDI tell us about Kazakhstan's Urban Areas?

With a country level HDI of close to 0.8 (on a scale of 0-1), Kazakhstan has higher human development than most countries in Central Asia. This can be explained in part by government investment in health and education, broad access to basic services and public goods, and a thriving economy. However, this high performance is unevenly distributed across the country. As Kazakhstan's 2016 National Human Development Report shows, several regions score well below the average. The strongest performers were the administrative cities of Astana and Almaty.

It is therefore unsurprising that all the dimensions in the UA-HDI are highest in Astana and Almaty. The two cities are considered "agents of change" and are more advanced than other regions because of their ability to attract human capital from around the country (UNICEF, 2018). Their populations are constantly increasing due to migration flows from other regions and from neighbouring countries, and the employment rate of the economically active population is 94.5 per cent. Based on the UA-HDI (Table 2), urban areas in Pavlodar, Atyrau, Karaganda, Aktobe, Jambyl, West Kazakhstan, and East Kazakhstan have human development levels exceeding the country's average. Urban areas in the regions of Akmola, North Kazakhstan, South Kazakhstan, Kostanai, and Kyzylorda, lag behind, with scores of less than 0.5.

*Table 2: The Urban-Adjusted Human Development Index by Region, 2017*

Region	UA-HDI	Health	Living Standard	Knowledge	Built Environment
1 Astana city	0.85	0.86	0.99	1.00	0.62
2 Almaty city	0.75	0.81	0.97	1.00	0.40
3 Pavlodar	0.68	0.70	0.85	0.73	0.49
4 Atyrau	0.63	0.73	1.00	0.61	0.33
5 Karagandy	0.62	0.66	1.00	0.72	0.31
6 Aktobe	0.62	0.74	0.84	0.60	0.40
7 Jambyl	0.62	0.65	0.80	0.63	0.44
8 West Kazakhstan	0.60	0.66	0.83	0.64	0.37
9 East Kazakhstan	0.59	0.62	0.93	0.70	0.29
10 Mangystau	0.54	0.82	1.00	0.56	0.19
11 Almaty	0.52	0.67	0.90	0.60	0.20
12 Kyzylorda	0.48	0.69	0.63	0.60	0.20
13 Kostanai	0.48	0.59	0.86	0.63	0.16
14 South Kazakhstan	0.45	0.78	0.60	0.77	0.12
15 North Kazakhstan	0.44	0.66	0.62	0.59	0.16
16 Akmola	0.44	0.65	0.57	0.59	0.17

### Box 3. The type of growth matters

The three regions achieving the highest scores in the living standards dimension are Atyrau, Karaganda, and Mangystau. While Karaganda's high score can be traced back to a diverse economy, the economies of Atyrau and Mangystau are predominately linked to extractive resources and gas and oil exports. While lucrative, such economies often come with adverse health effects and little investment in third sectors such as higher education, public space and public transportation, which is reflected in the low built environment scores of both regions, and high income inequality measured with the Gini coefficient.

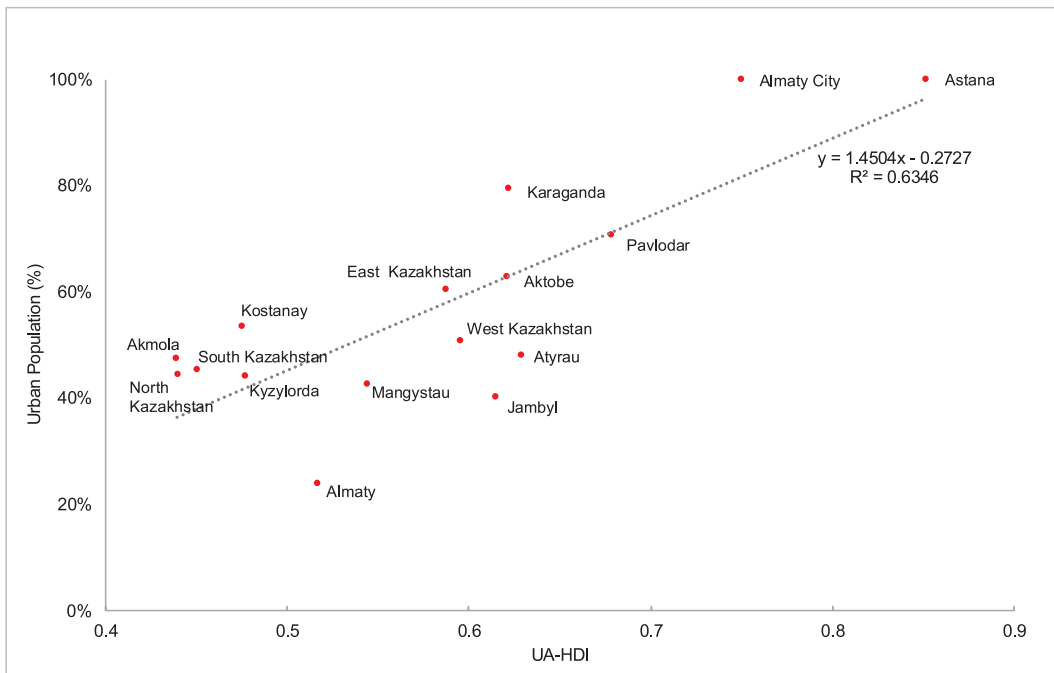
The findings also corroborate the 2016 NHDR, which revealed that economic complexity was lowest in Mangystau and Atyrau. Consequently, despite high GDP per capita, GDP per capita growth is below average. These regions could benefit from vertical policies to stimulate R&D, innovation and productivity and thus reach higher levels of growth in wealth creation. The lack of economic complexity can adversely affect a person's ability to reach their full potential and may explain the regions' negative net migration balance in 2016, during which about one thousand people emigrated from Mangystau and Atyrau. As fluctuations in the oil and resource-based economies are expected to become more severe in the near future, this trend is likely to further aggravate. Promoting greater economic complexity is an important driver in enhancing a region's human capabilities in urban areas.

Moreover, extractive economies are male dominated sectors, with wage levels often inflated by the commodity effect. Consequently, the gender pay gap is particularly large in these regions. In Mangystau and Atyrau, the difference in salary between men and women is about 50 per cent. Proactive policies to promote the employment of women in economies such as the mining sector, at comparable wage levels to those of men, are important strategies to address existing gaps. Local government communication campaigns and gender awards can help make firms more responsive to reducing the gender gap. Communication campaigns should also be in place at the high school and university level to encourage more women to pursue careers in engineering and mining.

The UA-HDI was also found to be influenced by the level of urbanization within a region. Across the 16 regions, a positive relationship exists between more urbanized regions and higher human development (Figure 20). This positive relationship continues to exist if Astana and Almaty city are excluded from the sample, which reinforces the premise that urbanization has significant potential to increase human well-being and a person's capabilities.

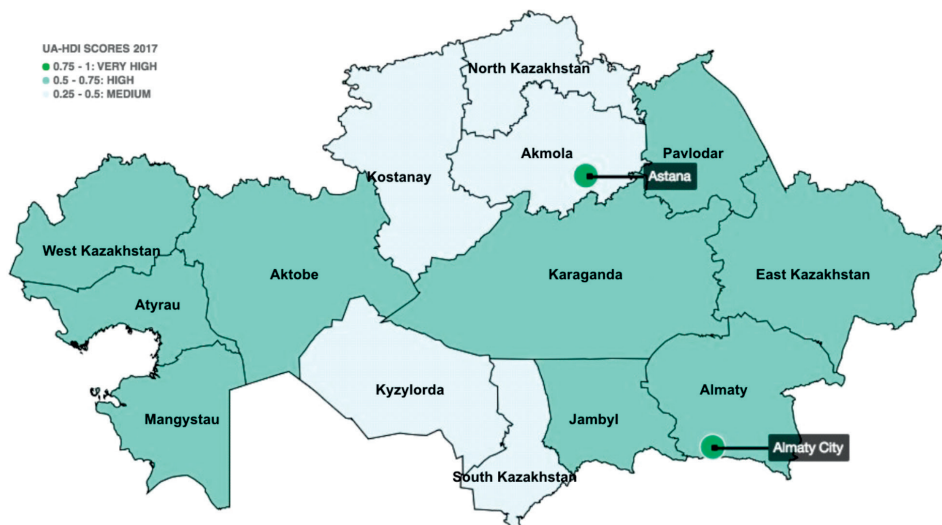
Population trends are not homogenous across the country. While the urban population increased in almost all regions between 2009 and 2016, the northern regions are growing much slower than the southern. Akmola, Mangystau, East Kazakhstan, Karaganda, North Kazakhstan, Pavlodar, and Kostanay grew by less than 10 per cent during this period. In contrast, the urban population has increased by more than 15 per cent (the country average) in Kyzylorda, Atyrau, Almaty city, South Kazakhstan, and Astana. South Kazakhstan's urban population has grown by 32 per cent since 2009, Astana's by 44 per cent. The most urbanized regions are Karaganda (79 per cent urban), Pavlodar (70 per cent), Aktobe (62 per cent) and East Kazakhstan (60 per cent). In contrast, the rural population is concentrated in the Almaty region (76 per cent), Jambyl (60 per cent), and Mangystau (57 per cent).

Figure 20: More urbanized regions fare better in human development (calculations made using the least-square method)



Across the country, urban areas score high or very high in health, living standards, and knowledge, and low in built environment. Geographically, southern and northern regions fare lower in the UA HDI compared to regions in the centre, the east and the west (Map 1). All five regions perform particularly badly in the built environment dimension, with scores ranging from 0.12 to 0.20. Despite ranking among the lower-performing regions, South Kazakhstan stands out as scoring very high in knowledge and health. Shymkent, South Kazakhstan’s largest city, has at least five major higher education institutions, which explains the region’s high score in knowledge.

Map 1. Regions in the north and south perform lower in the UA-HDI





### 2.1.2. Key findings by dimension

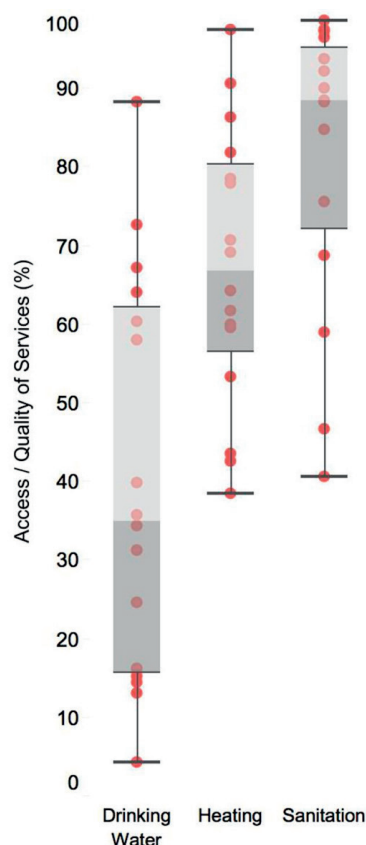
All 16 regions score high or very high in knowledge, health, and living standards, which speaks to the country's progress since independence in life expectancy, infant mortality, and poverty. This progress is particularly notable in the decline in urban poverty, which has dropped from 38 per cent to less than 3 per cent since 2001. This enormous reduction in poverty is related to two key events: the rapid economic growth between 2001-2008, which generated a range of new employment opportunities, increasing average income; and, since 2008, with the financial crisis affecting economic growth, the increased relevance of redistributive policies and stimulus packages, which guaranteed minimum living standards (Kudebayeva and Barrientos, 2017). Life expectancy, however, remains low when compared to countries with similar income levels, despite improvements in the last decade, with maternal mortality, infant mortality and under-five mortality rates remaining high (OECD, 2014). Considering the stark differences in economic performance and well-being across regions and between rural and urban, it is also questionable whether a national poverty line is sufficient or whether poverty thresholds should consider expenses such as housing or health care costs.

Regions perform more unevenly regarding knowledge. As 'mean years of education' measures the average number of years of education received, higher education significantly affects the score of a given region. As a result, regions with university hubs – Astana, Almaty city, South Kazakhstan, Pavlodar, and Karaganda – score highest. Access to higher education has consequences that reach beyond knowledge itself. Most obviously, universities play a key role in human capital development and innovation systems in their cities and regions. They also play a central role as catalysts in the development of advanced urban economies and future GDP growth. Skilled workers tend to be more productive than unskilled workers, and city-level human capital tends to raise individual wages (Moretti, 2004). It is no coincidence that all three regions that rank lower in knowledge (with scores of 0.56 – 0.60) have seen their populations decline in recent years. Since 2014, the populations of Almaty region and North Kazakhstan decreased by more than 16,000 due to internal and international migration, and around 1,000 of Mangystau's urban residents left the city in 2016.<sup>9</sup> In contrast, during the past three years more than 70,000 new residents from abroad and other parts of the country have moved to Astana and Almaty city (Committee on Statistics, 2018).

The lowest scores across all regions occur in the built environment, with an average regional score of 30. The built environment (buildings, public spaces, and infrastructure) provide the fundamental physical settings that the provision of basic human needs, such as food, shelter, community, and transport, rely on, but also contribute to greenhouse gas emissions throughout their construction, operation, and management (James et al., 2009). In the following paragraphs, some of the patterns emerging from specific indicators in the built environment are explored.

**Access and quality of basic services.** Kazakhstan's municipal utilities have deteriorated significantly since 1991. Following the transition period, little or no investment has been made in the maintenance and repair of basic sanitary facilities. An almost alarming pattern identified by the UA-HDI is the low quality of drinking water. Figure 20 displays the great variance that exists in access to drinking water across Kazakhstan's regions. On average, only 39 per cent of households reported access to quality drinking water; in some regions this figure is as low as 4 per cent. The SDG Index and Dashboards Report (Sachs et al., 2018) also finds that

Figure 21: Access and quality of basic services (%)



Kazakhstan’s performance in access to improved piped water in cities has been stagnating and is not improving at the rate necessary to achieve the SDGs by 2030.

Among the 16 regions, 80 per cent of houses in urban areas have sanitation. This means approximately two million people are without proper sanitation. Notably, four regions have sanitation levels below 70 per cent. Kyzylorda has the lowest connection rates, where 60 per cent of the houses in urban areas have no sanitation. In terms of heating temperature, only 67 per cent of households are satisfied with their connections (Committee on Statistics, 2018). The OECD (2017) finds similar trends, suggesting that countrywide 80 per cent of the urban central heating system is obsolete, with distribution heat losses and failures.

These trends have been confirmed by an expert in the field. “Air and water quality is a big problem in our cities. It is even more distressing that the problem is understudied, as there is little available data because big private firms control this type of information. There is a rampant lack of transparency in this regard, which leads to rumours and assumptions driving the public discourse on these issues. This is a concern for the government and NGOs alike.” (Gulyayev, 2018)

**Green space.** Green spaces, such as parks, public spaces, and sports fields are fundamental to any urban ecosystem as they increase the quality of life by making compact living more

attractive and viable. Living in greener environments is associated with better mental health and emotional well-being and lower mortality. Greener living environments also come with a range of environmental benefits as they reduce urban heat effects, offsetting greenhouse gas emissions. The importance of green space was recognized in SDG 11 Target 7, which calls for the provision of “universal access to safe, inclusive and accessible, green, and public spaces, in particular for women and children, older persons, and persons with disabilities,” by 2030. Open and green space can also have a direct impact on property prices. Green space can enhance residential property values because homeowners and renters are willing to pay more for the perceived benefits of being close to green space (Crompton, 2001). The average share of green space in Kazakhstan’s urban areas is 5 per cent, which is low compared to 15 per cent in European cities. One explanation for this could be the harsh climate, especially in northern Kazakhstan where winter temperatures drop to -45°C, with -57°C being recorded in Atbasar (Akmola region). In southern Kazakhstan, summer temperatures often exceed 35°C with a high of 49°C recorded in Turkestan (South Kazakhstan) (Advantour, 2001).

**Public transport versus the use of private cars.** As traffic congestion continues to grow, priority should be given to public transport modes, such as metro trains, bus rapid transport systems (BRT), or buses, instead of personal vehicles. Public transport is more efficient in moving people around, reducing the environmental impact and CO<sub>2</sub> emissions. Kazakhstan



inherited an extensive urban public transport system from the Soviet era, based on buses, trolleybuses, and tramways. Since independence, investment in public transport decreased, resulting in an increased use of private automobiles. Car ownership has risen considerably since 2000, with the highest motorization rates in the cities of Astana and Almaty. Between 2003 and 2016, individual car ownership increased by 390 per cent in Astana, and by 102 per cent in Almaty. Today, every fifth permanent resident owns a car. While metro trains and trolleys are applicable for medium and large cities, BRT systems are more pertinent in the smaller city context. Cities can however be creative and adopt systems for their local circumstances, such as in Reno, Nevada (USA), where a streetcar system based on electric cars was developed to connect the main areas of the city with residential areas (Jaffe, 2011).

#### Box 4: Nationally Appropriate Mitigation Actions for Low-carbon Urban Development, 2015-2020

##### Key GHG Emitters in Kazak Cities



With average per capita emissions of around 12 tCO<sub>2</sub>e/year, Kazakh urban settlements are among the most GHG-intensive municipalities in the world. To tackle this issue, the government of Kazakhstan is committed to mitigating GHG emissions in the cities under the United Nations Framework Convention on Climate Change (UNFCCC). Kazakhstan identifies the ‘urban sector’, consisting of district heating, buildings, waste and transport, as the priority area for national climate change mitigation with a potential to reduce annual GHG emissions by 25 Mt CO<sub>2</sub> by 2030. This is almost 30 per cent of the cumulative GHG abatement potential for Kazakhstan.

This joint UNDP, GEF and Kazakhstan government project involves bankable investments in infrastructure, supported by capacity building, awareness raising, and technical assistance, in 15 cities, 7 of which have already been selected: Kostanay, Lissakovsk, Aktobe, Oral, Shymkent, Temirtau and Taraz. Five standard solutions were developed to be implemented via public-private partnerships: smart meters for heating (at least 15 per cent energy reduction expected), water pumps with VFR, LED-technology lighting (at least 45 per cent energy reduction expected), waste management at the household level, and modernization of boilers. Two strategic investment support mechanisms have been developed: a subsidy of 10 per cent to the interest rates and up to 19 per cent, and a guarantee model where UNDP serves as guarantor for SMEs for up to 50 per cent of the loan amount.

The project is an important example of the type of collective actions required in cities, not only to curb emissions, but more generally to ensure a more sustainable urban future for all.

**Investment in fixed assets and housing.** Existing infrastructure (roads, services, housing stock) requires constant maintenance and repair. A leaking heating system, for example, negatively affects the environment and creates a financial loss. Moreover, investment must follow demand. Cities that are growing due to migratory inflows require greater investment in new and affordable housing and infrastructure than shrinking cities. On average, all 16 regions invest significantly more in fixed assets than in housing. Across regions, per capita investments varied significantly; Atyrau invested most in fixed assets; Kyzylorda invested most in its housing stock.

### Box 5: Enabling SME involvement in energy efficiency improvements of multi-apartment buildings

Despite the efforts made, Kazakhstan faces acute challenges with the maintenance and operations of a large, deteriorated housing stock and associated utilities infrastructure. Capital renovation is required for 30 per cent of the buildings and experts estimate that 60-70 per cent of the multi-apartment buildings have inefficient heating systems. Losses due to deteriorated infrastructure are more than 50 per cent of heat consumption and more than 60 per cent of water consumption (UNDP, 2018). Responding to this issue, the national housing modernization programme was launched in 2009 with the objective of retrofitting 11,000 housing units. While an important effort, a 2010 assessment revealed there are between 70,000 to 100,000 units that require updating from Soviet-era insulation standards. A deteriorated housing stock affects the quality of life and gives rise to social tensions making the maintenance and operations of the buildings more difficult. Green SMEs, particularly Energy Service Companies (ESCOs) could make an important contribution in solving this problem. However, high energy subsidies create distortions to the market mechanism and private sector involvement. Households that spend more than 10 per cent of their income on energy receive “social subsidies”. “Latent subsidies” are also received by energy generation companies which further reduces the cost of energy.

This project is being implemented by the UNDP and the government to increase investment attractiveness to solve this challenge in the housing sector. The project has five main components:

Financial	Technical	Legal	Organizational	Social
Green interest loans to SMEs: lower rates from 15% to 5%	Minimum proven standards	Amendments to housing relations law	Participation protocols for community management	Raising awareness of participation and energy efficiency

The project is a front runner not only in its technical approach, but in its social and financial design. As the Programme Manager explains: “community-driven actions are still very nascent, civil associations were not legally allowed and people still hold individualistic attitudes that make such collective efforts more difficult. Notwithstanding the difficulties, the results in terms of energy savings and greenhouse reductions speak for themselves” (Belyi, 2018). Such a demand-driven approach proves the viability of truly sustainable initiatives; they are environmentally and socially effective and economically attractive.

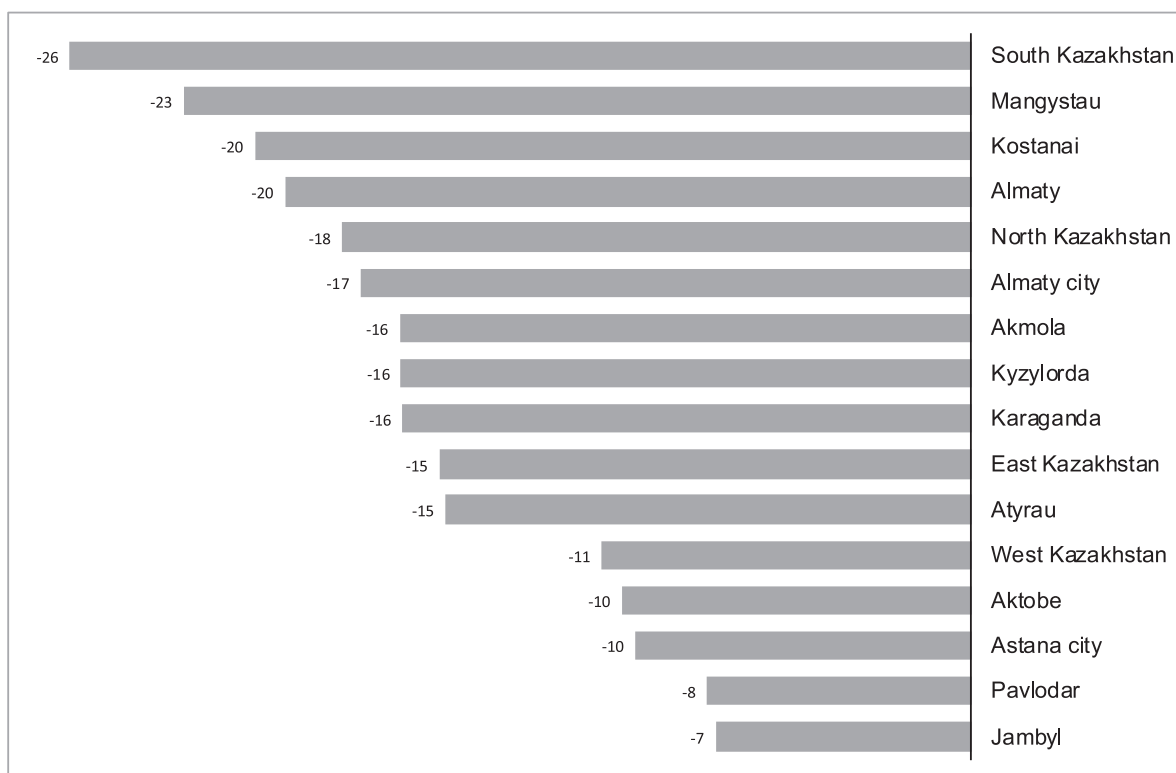
### 2.1.3. Built environment challenges differ in the south and the north

**The southern regions**, Kyzylorda, South Kazakhstan and Almaty have low to mediocre scores in access and quality of basic services. Access to sanitation, quality of drinking water and heating are all below 60 per cent, which is well below the country average. In Kyzylorda, a staggering 60 per cent of urban households lack proper sanitation. South Kazakhstan stands out with the lowest per capita investments in the existing housing stock. This lack of investment may have significant effects on the quality of housing in the near future.

**In the northern regions**, Akmola and Kostanay have poor water quality and lack green spaces. In Akmola, only 15 per cent of urban households have high-quality drinking water, in Kostanay this decreases to 4 per cent. Both regions have low ratios of green and public spaces. In Akmola, less than 0.5 per cent and in Kostanay less than 4 per cent of urban space is green, compared to 13 per cent in Karaganda. Moreover, investments in housing and fixed assets are much lower than in other regions. North Kazakhstan ranks lowest in the use of public transportation; with only 16 passenger trips per year, the region is well below the country's average of 253.

Comparing the UA-HDI scores to the traditional HDI scores shows that all 16 regions perform consistently lower in the UA-HDI than in the HDI. The difference between the two is biggest in South Kazakhstan and Mangystau (Figure 22). This disparity highlights that there is ample room for improvement in the quality of built environments in Kazakhstan's urban areas. Improving the quality of basic services, access to public transportation, and the availability of green space, can significantly improve human development in cities.

Figure 22: All regions perform lower in the UA-HDI than in the HDI, 2017



The UA-HDI shows the living standards of people residing in urban areas across regions. However, this is only the starting point for discussions on urban human development. The analysis does not show the dichotomy of performance across cities within the regions. It would be naive to assume that all cities in Karaganda or South Kazakhstan perform at the same level. As regional averages mask the differences that exist in large, medium, and small cities, it is necessary to go into greater depth to understand what is behind these regional averages. The following section seeks to address this by exploring performance at the city level, applying the Habitat Commitment Index to 30 major cities in Kazakhstan.

## 2.2. Measuring sustainable development at the city level: the Habitat Commitment Index

The Habitat Commitment Index (HCI) ranks 30 cities according to 19 indicators, across 9 dimensions, linked to 10 of the 17 Sustainable Development Goals (Table 3). We use the HCI for city-level assessment because of its methodology, which compares cities not in absolute terms, but relative to cities at similar economic resource levels. The rationale for this methodology is that it makes little sense to compare Astana and Petropavl in terms of retail turnover, as the two cities have very different economic capacity. A regular ranking would also not factor in 'effort'. In 2014, Almaty city's coverage of sanitation was three times that of Kyzylorda. While this is interesting, it hides the 'effort' Kyzylorda has made in improving its sanitation coverage, especially in light of the city's resources. Performance rankings are only meaningful when they include a qualifier that considers local capacity. Doing so produces different performance results than found in ordinary rankings. The HCI considers these differences, drawing on the SERF methodology to obtain a more equitable assessment of cities.<sup>10</sup> (For more information on our methodology and for calculating Kazakhstan's HCI scores please see Annex A).

HCI scores use a scale of 0 to 100. A score of 100 does not necessarily indicate 100 per cent fulfilment of an indicator, but 100 per cent of the maximum score historically possible for a given per capita GDP.<sup>11</sup> After defining the upper and lower boundaries for each indicator, a regression methodology is used to identify the distance between a specific performance and the possibility frontier. This makes it easier to interpret the HCI. A city that scores 50 on an indicator is halfway towards achieving the best possible outcome considering its economic resources, i.e., it is performing at 50 per cent of its potential.










As of 2017, 87 cities<sup>iii</sup>, 30 urban settlements in the proximity of cities, and 2,676 subnational governments were officially registered in Kazakhstan. These subnational administrations are categorized in three tiers, depending on population size and political relevance: regions (oblasts), districts (rayons) and municipalities (auls). Almaty and Astana are first-tier cities of republican significance. In the second tier, 38 cities have "regional significance" with district-level administrative status and prerogatives, in addition to municipal administrative tasks and prerogatives. At the municipal level, there are 47 smaller cities of "municipal and district significance". As no official data is produced for third-tier cities, the HCI focuses on cities in tier I and tier II, which account for a total of 40 cities. However, due to data limitations at the tier I and II levels, the assessment was only possible for 30 cities.

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<sup>iii</sup> 87 settlements have the status of a city in Kazakhstan

Table 3: The Habitat Commitment Index for cities in Kazakhstan

9 dimensions, 19 indicators, and 30 cities, linked to 10 SDGs

DIMENSIONS	 BASIC SERVICES	 HOUSING	 WELL BEING	 ECONOMICS	 ENVIRONMENT	 GENDER EQUALITY	 EDUCATION	 NETWORK INFRASTRUCTURE	 URBAN FORM
INDICATORS	Water supply (%) (SDG 6, 11)	Housing investment per capita, tenge (SDG 11)	Infant Mortality (per 1000 live births) (SDG 1, 3)	Net migration (SDG 10)	PM 2.5 (SDG 11, 12)	Gender Pay Gap (SDG 5, 10)	Student-teacher ratio (SDG 4)	Number of enterprises w/Internet (SDG 9)	Population Density, persons per km2 (SDG 11)
	Sanitation (%) (SDG 6, 11)			Income growth (%) (SDG 10)	PM 10 (SDG 11, 12)				
	Investment in fixed assets per capita, tenge (SDG 6, 9, 11)	Living space per person, m2 (SDG 11)		Retail trade per capita, tenge (SDG 8)	Waste generation per capita per year (SDG 11, 12)				
				Local budget expenditure on transport, tenge (SDG 12)					
RELATED SDGs	1, 6, 9 11	11	1, 3	8, 10	10, 12, 13	5, 10	4	9, 12	11, 15

## 2.3. Assessment of evidence

### 2.3.1. Even top-performing cities operate well below their potential

Figure 23 provides a ranking of the 30 cities by the Habitat Commitment Index. It is worth noting that two of the four top performers are in the Akmola region, with the top-ranking Stepnogorsk performing at about 71 per cent of what is possible considering its economic activity.

However, these top performers are still only performing at 60 to 70 per cent of full potential.

Among the lowest ranking cities, from the Karaganda region Satpaev, achieved very low scores in urban form, environmental indicators, and network infrastructure, and had a high gender pay gap, while Saran performed much better in environmental indicators and gender equality, but scored low in economics and basic services. Zyryanovsk in East Kazakhstan scored particularly low in basic services and network infrastructure. Aktau, a city in the Mangystau region, performed particularly low in gender equality, with an HCI score of 45.

The four lowest ranking cities are all small, having less than 200,000 residents.

Figure 23: Cities ranked by HCI Score



## Box 6. Kazakhstan's top HCI performer: Stepnogorsk

Stepnogorsk is one of Kazakhstan's 27 single industry towns (monotowns); remnants of the centrally-planned economy of the Soviet Union. In Kazakhstan, monotowns are defined as cities where at least 20 per cent of industrial output stems from a single industry or where most workers are employed by one company. While most monotowns focused on mining or fishing activities, Stepnogorsk housed the world's biggest anthrax-manufacturing plant. After independence, when the US Cooperative Threat Reduction Programme shut down and dismantled the laboratory, the city suffered from out-migration and government attention and support ceased (Bissenova, 2001).



Across Kazakhstan, monotowns have faced major challenges since independence due to the declining competitiveness of their primary industries, low wages, emigration of a highly skilled and trained workforce, and poor transport connectedness. To address these challenges, the government introduced the Programme on the Development of Single-Industry Towns, 2012–2020. Although the plan has been criticised for its limited consideration of local contexts, Stepnogorsk has made

significant progress since its introduction. Since 2012, unemployment has declined, industrial production has increased, more small and medium-sized businesses have entered the local market, and the city has attracted new investment from state-owned companies. Targeted support of SMEs and start-ups has played an important role in the city's economic progress. Such support systems are in the form of soft loans or subsidies. In 2015, the city's self-employment rate reached 25 per cent, compared to Kazakhstan's average of 17 per cent.



The current mayor is admirably referred to locally as the “implementer akim”, one of the instigators of this change. While most monotowns experience out-migration, Stepnogorsk has managed to maintain a stable population since 2010. Stepnogorsk is an example of how internal migration can help to build and diversify the urban economy and encourage the vitality of a city. As Stepnogorsk's Mayor Anuar Kumpekeyev notes: “To continue to diversify the economy is fundamental for us, hence our emphasis on SMEs and the service sector. Our unemployment rate is 4 per cent. The regional HDI is second in the country, explained perhaps by our good economic performance and also because we have four vocational technological schools. According to recent polls, the local population has 83 per cent confidence in our administration.”

### 2.3.2. Cities in the east and the west struggle the most

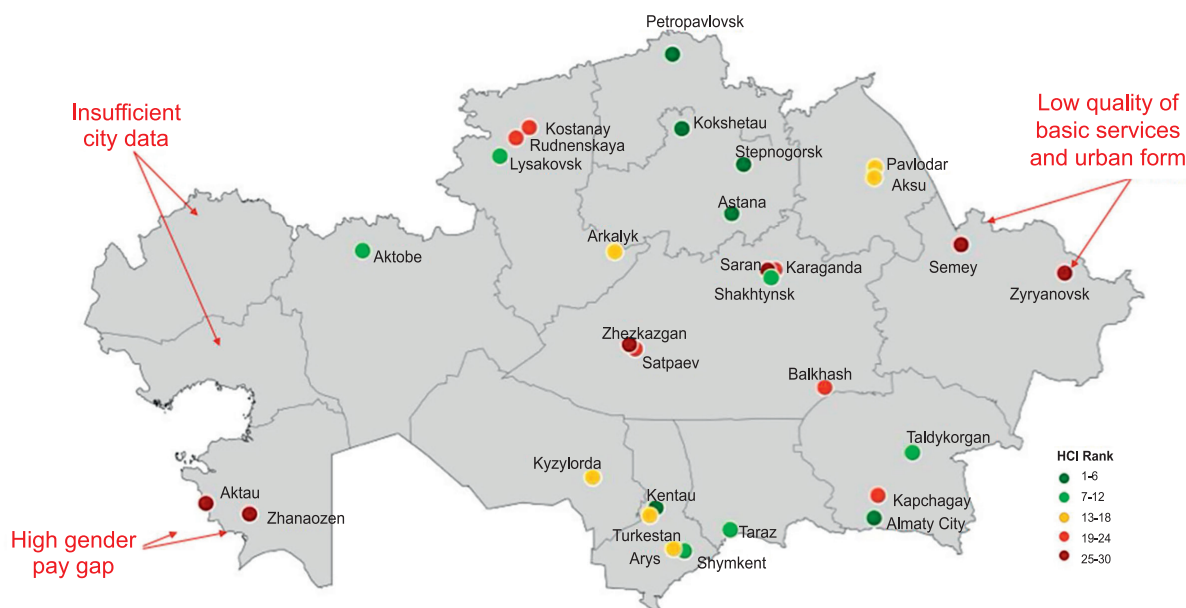
A geographic view of the rankings (Map 2) shows a concentration of low-performing cities in East Kazakhstan and Mangystau. Cities in the centre, especially in Karaganda, also have low HCI scores. On the contrary, North Kazakhstan, South Kazakhstan, and Akmola have the highest-ranking cities, moreover, none of the cities in South or North Kazakhstan performed



below average. As the regions of Atyrau and West Kazakhstan had insufficient city level data, the cities from these regions were not included in the HCI analysis.

The low HCI scores of cities in the Mangystau region are influenced by a large gender wage gap, while low-quality basic services and unsatisfactory urban form downgraded scores in East Kazakhstan. Mangystau’s cities have experienced social unrest and socio-economic conflict in recent years, which is reflected in the HCI findings. In the oil and gas producing monotown Zhanaozen for instance, which ranks 25 out of 30 in the HCI, oil industry workers went on strike in response to salary cuts, demanding better wages, new jobs, the implementation of social support programmes and basic infrastructure provision. Jobs in the energy sector are often precarious and poorly remunerated. In addition, pay gaps between local and foreign workers tend to be high, contributing to social conflict (Voloshin, 2013).

Map 2. HCI Rankings in 30 cities



This map shows the spatial distribution of the 30 cities across Kazakhstan with color classification representing the relative HCI rankings.

Generally, cities in the north fare better in basic services than those in the centre, the east and the west. Performance across southern cities is mixed, with Turkestan scoring lowest (HCI of 52), and Kentau scoring slightly above average (HCI of 65). In well-being, measured with infant mortality, cities in northern regions (Akmola and Pavlodar) fare better than cities in other regions. The composite economics score is lowest in southern regions, and higher in the centre and the north. Stepnogorsk, Almaty, and Aktobe score highest in retail trade turnover, which is one of the most important macroeconomic indicators of a city’s socio-economic development and an important factor in ensuring sustainable economic growth. Concerning gender, the north and the south have higher gender equality than the west and the centre. The three lowest ranking cities on gender are in Mangystau and Karaganda (Satpaev, Aktau, and Karaganda City). The cities with the highest scores in urban form are in the south and the north. Cities in the centre, east, and west rank significantly lower. Geography is less of a determining factor for economics, housing, environment, and network infrastructure. Here, city size matters more.



### 2.3.3. Small cities face greater urban performance challenges

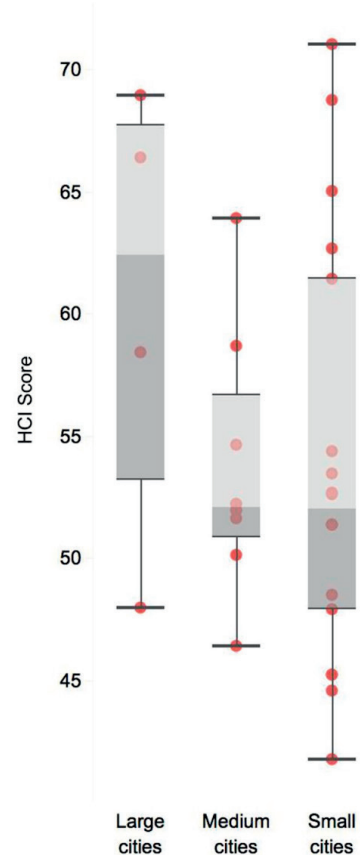
Of the 30 cities included in the HCI analysis, 60 per cent are small cities, 27 per cent are medium-sized cities, and 13 per cent (4 cities), are classified as large.<sup>12</sup> Stepnogorsk, the highest performer in the HCI, is a small city of about 68,000 people. Kokshetau, the third best performer, is also a small city of 129,000 people. While there are small cities that rank high in the HCI, large cities, on average, perform better than small or medium-sized cities. The average performance of large cities is 63 in the HCI, significantly higher than medium and small cities, which both have an average score of 53. The broadest range of high and low-performing cities is found among small cities (Figure 24); while small cities are the best performers, on average they score the lowest in the HCI.

The significance of city size depends greatly on which HCI dimension is being considered. Large cities (Astana, Almaty, Shymkent and Karaganda) score higher in economics, network infrastructure, urban form, and housing. Incomes also grow at a faster rate in larger cities. More enterprises use the Internet, and public transport is available for a greater share of the population. Average housing space per person is greater in large cities, while in some smaller cities (Zhanaozen and Arys) average housing space per capita is 14 m<sup>2</sup>, which is below international thresholds.

However, large cities score significantly lower in environmental indicators, especially in air pollution (measured with PM 2.5 and PM 10), which is becoming an increasing concern in Kazakhstan's large and economically growing cities. The higher productivity of urban areas requires more energy, as does the resulting high-consumption (OECD, 2017). Kazakhstan's performance in the SDG Dashboard (Sachs et al., 2018) confirms these findings, indicating that across the country cities are performing poorly regarding PM 2.5 emissions and are unlikely to accomplish SDG targets by 2030. If unaddressed by local and national administrations, pollution is likely to become more severe in the coming years, as medium and large cities are growing at a faster rate than small cities. This is particularly worrying as the country's two metropolises, Astana and Almaty, are expected to become important trade and economic hubs in the Eurasian system of trade.

An HCI study of 178 cities from different regions confirms the relationship between CO<sub>2</sub> and economic development found in Kazakhstan's cities (GUF, 2018). The study further finds that the relationship between CO<sub>2</sub> and urban density is weaker than that between CO<sub>2</sub> and income. Low levels of per capita carbon emissions in Marrakech, Morocco (low-density) and Dar Es Salaam, Tanzania (high-density) show that economic development is a greater determinant of the level of carbon emissions of a city than density, but that density becomes an increasingly more influential factor as cities become wealthier.

Figure 24: HCI Scores by City Size: Large, medium, and small cities



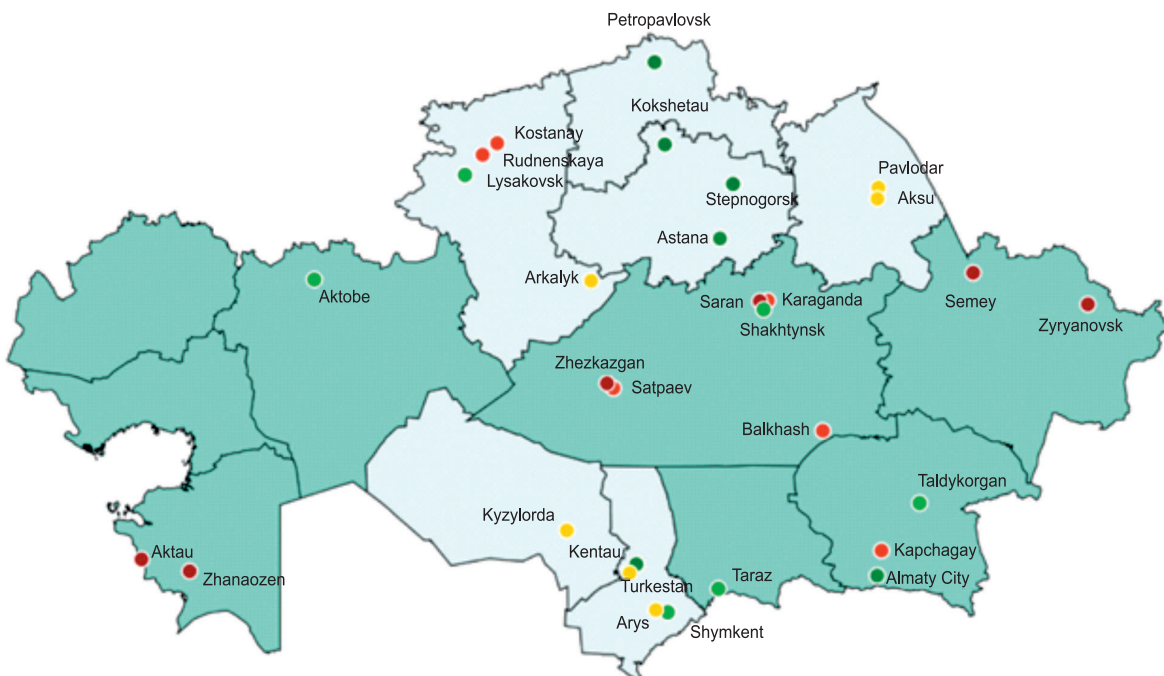
It may therefore be considered an important strategy for mitigating rising emissions with economic development. The study also suggests that compact cities emit less CO<sub>2</sub> than sprawling cities.

The fact that large cities score high in economics and low in the environment points to a discussion in traditional economic theory which posits a trade-off between economic growth and environmental quality, referring to a so-called Environmental Kuznets Curve. This theory suggests that indicators of environmental degradation tend to get worse as modern economic growth occurs, until incomes reach a certain point over the course of development.<sup>13</sup> However, if economic growth is accompanied by the right policies, environmental measures may improve with rising income and economic growth. It is therefore crucial to identify local and national policies, both conventional and innovative, to ensure environmental sustainability in the process of economic development and urban growth. Such policies can include switching to cleaner energy sources and electric vehicles, as well as cleaning up heavy industry and encouraging a shift to public transport. As Kazakhstan's cities continue to grow, there is a window of opportunity to build greener cities and break the link between economic growth and pollution.

### 2.3.4. High HCI scores and low regional UA-HDI scores indicate the importance of tertiary cities

Combining the findings from the Urban-Adjusted HDI and the Habitat Commitment Index provides insight into the larger, underlying forces of urban development. In Mangystau and East Kazakhstan, cities perform below their potential, facing structural challenges and socio-economic difficulties, while Jambyl and Aktobe have high average urban performance and cities that perform as expected considering local economic capacities (Map 3).

*Map 3. Combining HCI scores and the UA-HDI*



Similarly, some of the highest-ranking cities are in regions that fare below average in the UA-HDI. Stepnogorsk, Kokshetau, and Astana, for instance, are based in regions with medium UA-HDI scores. This discrepancy between regional performance and city-level performance has two possible explanations. First, the two indices include different indicators, with the HCI covering a wider range of dimensions. Second, urban averages assessed in the UA-HDI include small, mainly tier III cities, that were not assessed in the HCI due to data limitations for tier II and III cities. This infers that tier III cities may fare lower in sustainable development than tier I and tier II cities.

The difference between regional urban performance in the UA-HDI and city performance in the HCI points to inequality in human and urban well-being across Kazakhstan's cities, where large cities perform better than small and medium cities, and where the smallest and politically least significant towns perform lowest.

This also indicates the need for greater data collection at the city level. "In Kazakhstan there is a generalized lack of relevant data. Because of this, we can only speculate about what the real issues are (Kazakova, 2018)." Addressing the lack of data at the most local level is therefore crucial for gaining a better understanding of local challenges, priorities, and potential solutions.

### 2.3.5. Findings for discussion

This chapter provides an overview of human development in Kazakhstan's 30 major cities and the urban areas of its 16 regions. By highlighting high and low performers, displaying regional disparities and persistent problems, it aims to galvanize efforts to tackle the sustainable urbanization challenge. The analysis of the Urban-Adjusted Human Development Index and the Habitat Commitment Index, indicates ten overall measures that can serve as the basis of action points for local and national administrations, as follows:

- Urban areas across all regions can substantially elevate human development by improving the quality of the built environment (SDG 6, 11, 13, and 15). Investing in the quality of basic service delivery, especially drinking water, sanitation, and heating, is key;
- More urbanized regions score higher in human development;
- Currently, all 30 cities perform significantly below their capacities. Even top-performing cities only reach 60-70 per cent of their potential. This finding corroborates Kazakhstan's performance in the SDG Scorecard, where achievements in SDG 11 have been stagnating below the growth rate needed to achieve the targets by 2030 (Sachs et al., 2018);
- The network infrastructure (public transport and Internet access) is underdeveloped and underutilized, scoring lowest in all 30 cities (SDG 11 and 9). The lack of public transport modes means residents must use their own cars, which negatively affects congestion and air pollution;
- Population density and green space are significantly below international averages. This has potential negative consequences for health, mobility, social equity, and environmental sustainability (SDG 11 and 15);

- Air pollution is a major concern in large cities. This emphasizes the need to rethink the spatial configuration of cities, transport, heating, energy production and consumption, and modes of production (SDG 11, 12, 13 and 15);
- Small cities struggle with economic diversification and crumbling infrastructure (SDG 6 and 11);
- The performance in economic well-being is extremely unequal across cities (SDG 8 and 10). Although no data is available, it is anticipated that income inequality will become an increasing concern;
- The gender wage gap, which was found to be particularly wide in western and central regions, represents one of the many forms of existing gender inequalities, with women frequently excluded from formal economic activities and decision-making processes (SDG 5). To identify women's specific needs in urban planning and budgetary allocations more disaggregated data by gender should be collected on an urgent basis;
- Missing data on tertiary cities conceals differences within regions. Tier III cities are expected to score significantly lower in human development than the tier I and II cities assessed in the HCI.

Turning these challenges into opportunities will be key to fostering human development in all cities. Policy responses to the above challenges will need to be tailored to the development path of each region and city. Some will be outlined in greater detail in chapter 4 of this report.

Some cities, such as Almaty, Astana, Stepnogorsk, and Kokshetau, have started investing in their cities and residents. Their commitment is paying off, with Stepnogorsk achieving the top HCI ranking. The indices used in this chapter intend to commend these efforts by illustrating how cities fare relative to each other. This analysis also encourages a closer examination of local policies, plans, and investments, that can make a profound difference for sustainable development outcomes. According to the HCI, Stepnogorsk currently performs at 71 per cent of its capacity, demonstrating that even cities at low economic density levels can overcome the sustainable development challenge.

Despite current efforts to nationalize SDG indicators and to identify strategies to monitor the implementation of SDG 11 in particular, city-level assessments will remain crucial for tracking progress in urban well-being. This is because SDG goals and indicators are monitored at the country level, masking within-country differences.

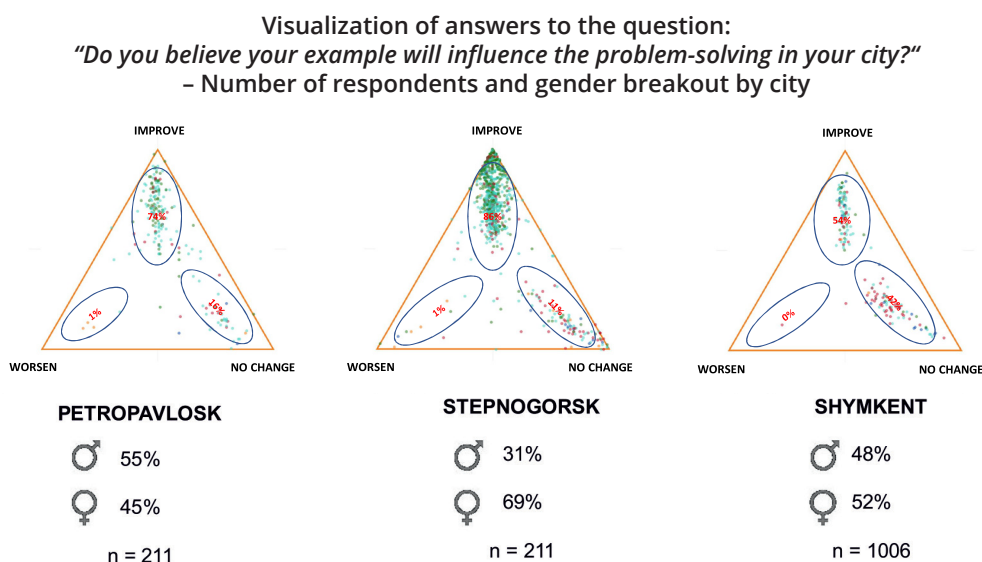
To better understand the knowledge gaps between tier I, II and III cities, and inequalities that became apparent across cities, national and local policies need to invest in data and monitoring. Investments in local-level statistical systems, and a strong national commitment to share data, will be essential to the design of successful policies and programmes which guide human-centred urban development. Better data will also encourage the more frequent use of benchmarking and trend analysis tools like the HCI and UA-HDI, which are critical to reflect, monitor and promote human development and sustainable urbanization in Kazakhstan.

## CHAPTER 3: CITY LIFE STORIES

This NHDR embraces an innovative research strategy. It uses a multi-modal, sequential, mixed-methods approach which includes both quantitative and qualitative components. Both methodologies received equal weight in the overall analysis; their results were merged after the data collection, during the data analysis. While the quantitative analysis was centred on the two indices described in chapter 2, the qualitative phase identified the well-being self-perceptions of an average family in three different Kazakhstani cities: Shymkent, Petropavlosk, and Stepnogorsk. The cities were selected to represent very different sizes, geographical conditions, ethnic compositions, economic complexity, migratory conditions, and human development levels. The objective was to gain insight into the daily activities of an average family. Questionnaire-based interviews, time-use diaries, observation, and multimedia were used to assess how regular citizens live in their particular city, how they perceive their daily life, and the effect of urban goods and services on their well-being. In addition to the family interviews, bilateral interviews in all the three cities were conducted with public officials, regular citizens and experts in different fields; a workshop was also held. Multi-modality was key in the data collection and analysis of the qualitative component, which is why the stories presented in this chapter are image-based. This is a story told in the voices and faces of Kazakhstani citizens themselves.

UNDP recognizes that cultivating collective intelligence and leveraging bottom-up solutions to some of the pressing problems that cities face, while strengthening trust between residents and their public institutions, is fundamental. Thus, UNDP takes the task of listening carefully to people’s stories very seriously. This entails listening to residents’ concerns and ideas, especially those groups frequently ignored in policy dialogues: women, minorities, youth, the disabled, and the elderly. It is why one of the most important current projects (Box 5) collected thousands of stories and incorporated the use of micro-narratives into its development. In the focal cities of this report 1,417 micro-narratives (MN) were collected; some of them are included as part of this chapter and others can be read as part of Annex D (UNDP-MN, 2018).

*Figure 25: Capturing people’s stories through micro-narrative analysis in Kazakhstan*

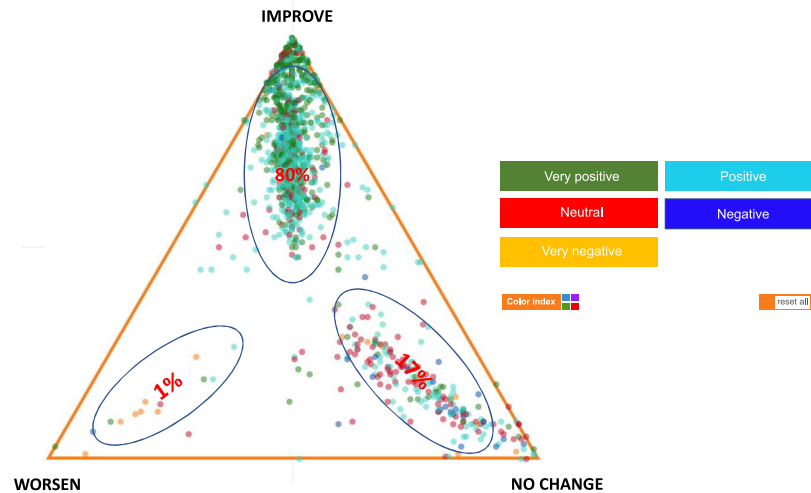


Source: UNDP-CO with SenseMaker (2018-2019)



Figure 26: Capturing people's stories through micro-narratives analysis in Kazakhstan (continued)

Stepnogorsk citizens' answer to the question:  
"Do you believe your example will influence the problem-solving in your city?"



Source: UNDP-CO with SenseMaker (2018-2019)

The interconnected nature of sustainable urban development issues requires going beyond sector-specific or technical solutions and addressing them in an integrated manner. This is why people's perspectives are particularly useful, as they provide the deepest insight into the quality of life in their own living environments. People's stories reveal detailed urban diagnostics that most local governments cannot perform. Moreover, people's stories uncover innovative solutions that connect different sectors in seamless ways.

The following pages provide a window into the quality of life in three different Kazakh cities: Petropavlosk in the north (about 216,000 inhabitants), the monotown Stepnogorsk (less than 70,000), and Shymkent (less than 900,000) in the south. Stories are provided by family members of different generations, by experts, and by average citizens, who shared their thoughts and impressions of their hometowns. These are simple stories, common people and average places, reflecting the liveability and people-centred paradigm of urban sustainability; they complement the analysis.

From north to south, Kazakhstan reveals great diversity. Climates, landscapes, economic realities, ethnic composition, social standing, aspirations, and prospects of the past, present and future. The north is of course colder, semi-desert, and ethnically more Russian. It is also more sparsely populated, has smaller and younger cities, and is heavily affected by outmigration. The south, on the other hand, is warmer, mountainous, and ethnically more Turkic. It is more densely populated, has bigger and older cities, which are affected by immigration, mostly from neighbouring countries to the south. It can be said that the north is in love with the past, Astana is in love with the future, and the south is busy living today!

### 3.1. Petropavlosk stories\*



\* Some names and identifying details have been changed to protect the privacy of individuals





"I have 7 children, 17 grandchildren and 8 great-grandchildren, all of them are enrolled in the military. We came to live to this city because of my daughter's work. My husband was a math teacher for 37 years, until he retired. We are recognized in the Petropavl society for having such a long successful marriage and a big authentic Kazakh family. We live with our younger son, as is the tradition. Every night my husband and I go out for a walk."

*Anara, Petropavlosk*



"Our parents lived in very different conditions. We have a much better life now: roads, asphalt, heating, everything. There is also better interaction between citizens now, more equality among citizens. In the Soviet era, Russians acted as though they were better, especially if Kazakhs didn't speak Russian or pronounced some words differently. I thank Nazarbayev, he is a good President, he loves the Kazakh people and is not afraid to speak."

*Talgat, Petropavlosk*



"I am a music teacher at a school teaching first to fifth grade. I also work as assistant to the Principal. I have a daughter and a son, the three of us live together. My neighbourhood is good, the market is close, medical services are close, a restaurant, and even a sauna. Streets are lighted, so it is safe to walk at any hour. We have neighbours from Azerbaijan and also a Russian family, we get along well. In my house, I classify waste and recycle some materials. I have one energy-saving lightbulb, they are expensive."

*Sezim, Petropavlosk*



"I moved to Petropavlosk from Akmola, there was no central heating in my town. I am very happy here because I have a lot of support not only to continue my training but to help other athletes with disabilities."

*Sergey Kharlamov, Paralympic athlete and coach*



"For 30 years I have worked at an association of housing management cooperatives. It is a satisfying yet difficult job because the mentality of self-effort is not there yet. Maintenance fees are very low, but still people feel the government should pay for them. Ours is a good city, green and clean with lots of new construction, but it needs manufacturing jobs. There is a lot of cattle-breeding, but we need more processing facilities. Also, the service sector is not well developed."

*Sergey and Svetlana, Petropavlosk*

City dwelling is relatively recent, especially in the north and in monotowns. Frequently, grandparents, who were born in rural areas, have children and grandchildren who were born in the city. Many of the elderly do not use the city much, spending most of their days indoors. In general, in older generations, there is a sense of complacency with material conditions. Young people, with less personal memories of the Soviet times, and also those who have travelled more, tend to have higher expectations with the quality of the urban spaces and services, so are generally more demanding.

Even with the extreme weather of the north, people visit lively streets, enjoy parks, and shop in year-round outdoor markets. Young people and families often go to shopping malls, not because they wish to buy, but to socialize and spend time together. Some new malls are very well-equipped for this, offering ample corridors, benches, recreation areas, Wi-Fi access, and even indoor vegetation and bird feeders. But these high-quality public spaces, with expensive associated goods and services, are not always available to all types of citizen.

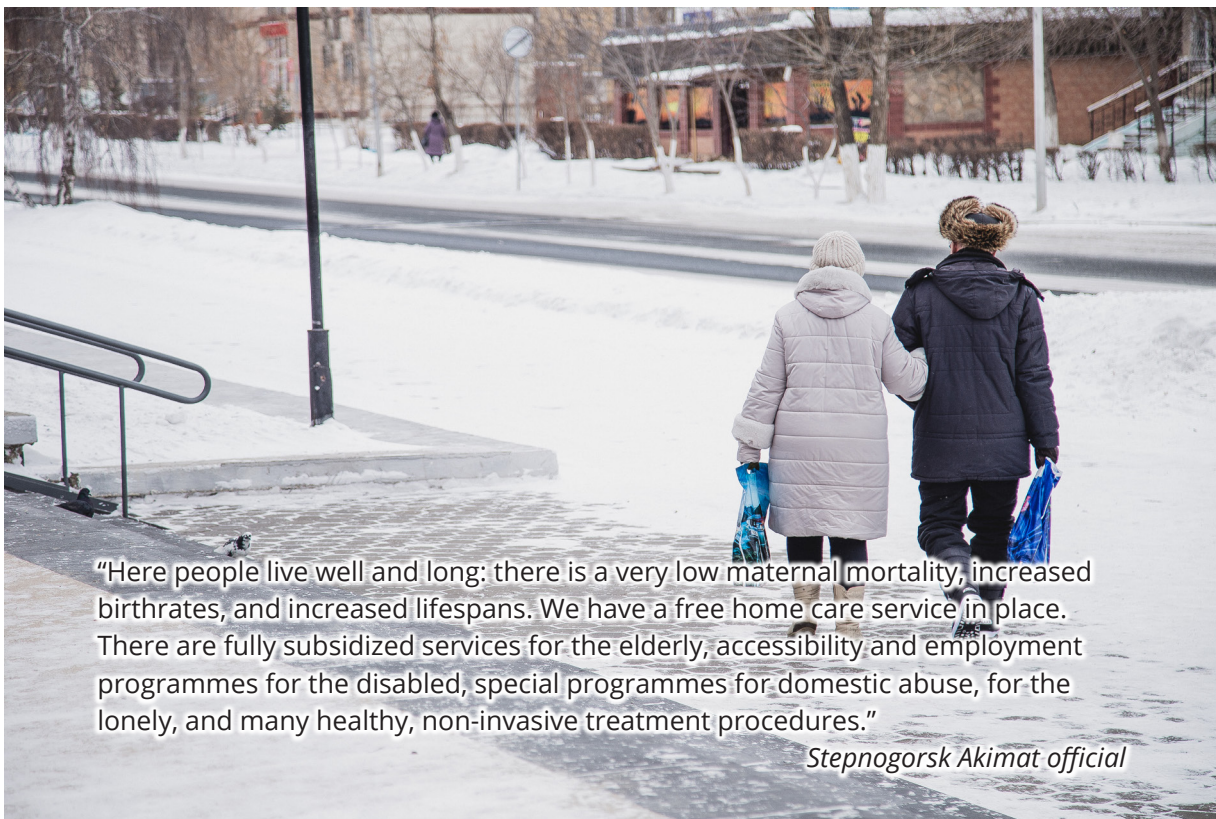
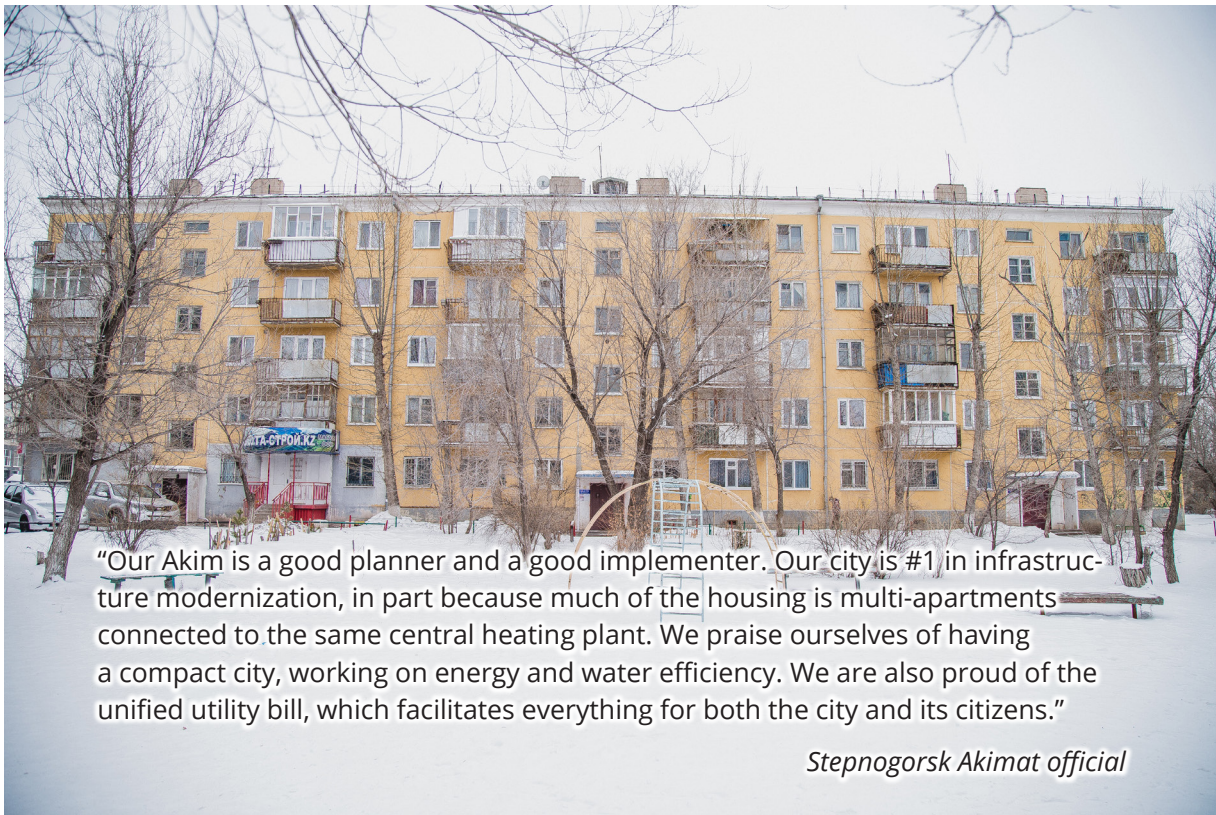
There tends to be a high level of concern for the disabled population; citizens are aware of the challenges and the extra support they need but it is unusual to see disabled people out and about. As an Akimat official explained: “We have installed ramps for the disabled across the city, but people complain that the angles of the ramps are not correct, and they cannot use them” (UNDP Workshop, 2018). Environmental experts agreed that “free public transport for the disabled is very important because seeing them in the city raises the public’s acceptability of them, and helps them counter isolation and depression. Transport subsidies are good and are part of the social protection policies. Kazakhstan has made important efforts in this” (UNDP Workshop, 2018).

Citizens generally recognize the physical disrepair of Soviet-era infrastructure, but there is less awareness that the social infrastructure also needs modernization. However, there is a nascent collective conscience about this, associated with new technologies: “We installed energy-saving lightbulbs, they last a long time and are very bright. What is better, over time, with these savings we could install an intercom system at the main entrance of the building” (UNDP-MN, 2018). “In the main street there are charging stations for mobile phones with solar panels” (UNDP-MN, 2018). Ideas like gender parity, citizen participation, digital literacy, and even smart urbanism may be popular, but there is little knowledge about what they really mean and how to actually make them a reality.

Infrastructure disrepair is a key challenge. While efforts continue to be made, the scale of what needs to be done outpaces the ambitious programmes already in place. Also, as a former city council member affirms, there are two additional challenges. One is with the construction itself “because corruption abounds, works cost an extra 30 per cent, which is often incorporated into the budgets” (Gulyayev, 2018). While local governments can undertake large-scale construction, problems arise during operations and maintenance. This is especially so in the north, which suffers from a large amount of ‘brain-drain’ to the Russian Federation.



### 3.2. Stepnogorsk stories







"I have eight children: five sons and three daughters. I was born in a village 200 kms away from Stepnogorsk. After I got married we both moved here. It was so long ago that I barely remember. I do not go out of the house often, I sit here, I read the Quran and pray. I own this house together with my son. We moved here 20 years ago. We chose it because it is a second floor, so it is easier to get up the stairs. There are five of us in the house; it has three rooms."

*Golnar, Stepnogorsk*



"I work on a farm. We have grain crops and a hundred horses for breeding, my father had this job and all my brothers also work there. I joined the family farm after I graduated from school in 2009 as a business manager. Being my own boss, I work a lot. I have little time for sports or hobbies, but I like to read."

*Baurzhan, Stepnogorsk*



"After graduating from law school in Kostanai, I worked as a lawyer for five years. It was a great job, with full benefits as it was a state-owned company. Now I take care of our newborn. I play football and I swim. I like our neighbourhood, everyone is very respectful. I wish the local grocery was closer, especially because there is no public transport in the city other than taxis. My grandmother gets free taxis to move around the city, though seldom uses them."

*Aynur, Stepnogorsk*



"This school prides itself on having a very high ratio of students going into college. The students are mainly Russian but there is a Kazakh classroom. All of them learn English. The classrooms have a computers and Internet connection, but it is rather slow. One of the challenges we face is the old age of the teachers, staffing can be a problem. I love Stepnogorsk, it is pretty, similar to Russia".

*Assistant School Principal, Stepnogorsk*

Many Stepnogorsk citizens talk about actions they have made to help their neighbourhoods, as new urban forms of collective action emerge: “I help maintain the lawn and garden around the building” (UNDP-MN, 2018). “Together with the neighbours we collected enough money for a new elevator for our nine-storey building, it used to be very tiring, especially for the elderly and for mothers with strollers” (UNDP-MN, 2018). “We repaired the ramp at the entrance of the building so wheelchairs could get in more easily. The local government was not doing anything about it, so the neighbours took matters into our own hands” (UNDP-MN, 2018).

As was shown in chapter 2, Stepnogorsk’s outstanding performance in the Habitat Commitment Index demonstrates that a city committed to improving and maintaining a high quality of life for its citizens can do so despite its size. Today, Stepnogorsk is a well-managed urban area that does not deny its past nor the challenges ahead, it has a positive relationship with its rural hinterland and shows one of the highest levels of population density.

### 3.3. Shymkent stories



“Our city is unique, it has a history and culture has developed for of 2,200 years. We are in the crossroads of the Silk Road, which is why we are mixed, we have learned from many cultures. This is also why we are naturally so hospitable”.

*Shymkent Akimat official*

Kazakh families are very big, and even if they live in a standard khrushchyovka apartment, it is normal for three generations to share the same roof, sometimes more. Tradition is one of the reasons for this as the younger son is expected to live in his parents’ house and take care of them during their older years until their passing. “Each family is like a government. In this one, grandmother is our president” (Shymkent family member, 2018). Tightly knit family bonds ensure cultural traditions are present in newer generations. You can find, for example, at least one dombra player in each Kazakh family. Women tend not to be employed, particularly after childbearing. Big households bound to traditional conventions play a role in that, as well as good social services, and a relatively high level of welfare.





"I am 79 years old now, I married at 17. I have 10 children, 56 grandchildren, and 10 great-grandchildren. When I was young I lived in a state-owned farm named after Karl Marx. I moved to Shymkent 34 years ago, because my husband found a job in the city. He began as a driver, then he became prominent, the head of the county. I remember Old Shymkent was peaceful."

*Zhuldyz, Shymkent*



"Approximately 15 people live in this house. It has 10 rooms. Each family is like a government. In this one, grandmother Zhuldyz is our president. Shymkent is so big that we say the whole population of Kazakhstan was born here. My main business is gravel mining for construction. Akimats live in their own world, we seldom interact with them. But we businesspeople are free to develop, permits are easy to get, and many subsidies are available."

*Erasy, eldest son, Shymkent*



"We are fortunate to have this house, we built it on three plots, and it has 1,000 m<sup>2</sup>. You cannot choose the location, it is given by the state. These plots are rural, but the government has expanded the city, which means we will eventually have infrastructure, hot water, and central heating. We are friends with the neighbours, as the local traditions say, you can often rely much more on your neighbours than on your relatives. If I won the lottery I would travel. Perhaps also get some new technologies."

*Serik, youngest son, Shymkent*



"I am 21 years old, I live with my parents and my older brother. We have a very big house with 25 rooms. We had problems with some neighbours, especially Russians and Chinese. Relationships with neighbours are better in the village. I study business management and I own a boutique and a restaurant. I'm also studying to become a translator. I love reading and watching TED-talks and YouTube videos in English. I drive to the fitness centre regularly. My scarf doesn't mean I sit in the house all day, I'm very open and active."

*Madina, Shymkent*



"I went to school until 10th grade. Here women study until they get married. I was a baker for 25 years and retired early. Now I work at the municipal water company. I like it, it is flexible, and in the neighbourhood, so I know everyone. Our family is in a good position, we have fixed salaries, which others don't. Some people were not allocated land plots or were given smaller plots. My favourite place in the city is my home. I love it. We're always making upgrades, it never ends! The windows and flooring need better insulation. In winter we use shoes inside the house."

*Inzhu, Shymkent*



"I work in the Akimat's front office, it is a good job, but I'm still on my journey to find what I like most. I would like to work on construction finance, I might need an additional degree. I read, I like browsing the Internet, and I'm good at karaoke, it is a good way to practice English. I love Shymkent, especially the Dendrarium. I like it because you can walk there, people also bike. But I like Almaty even more. If I won the lottery I would travel to the US and the UK."

*Aibek, Shymkent*

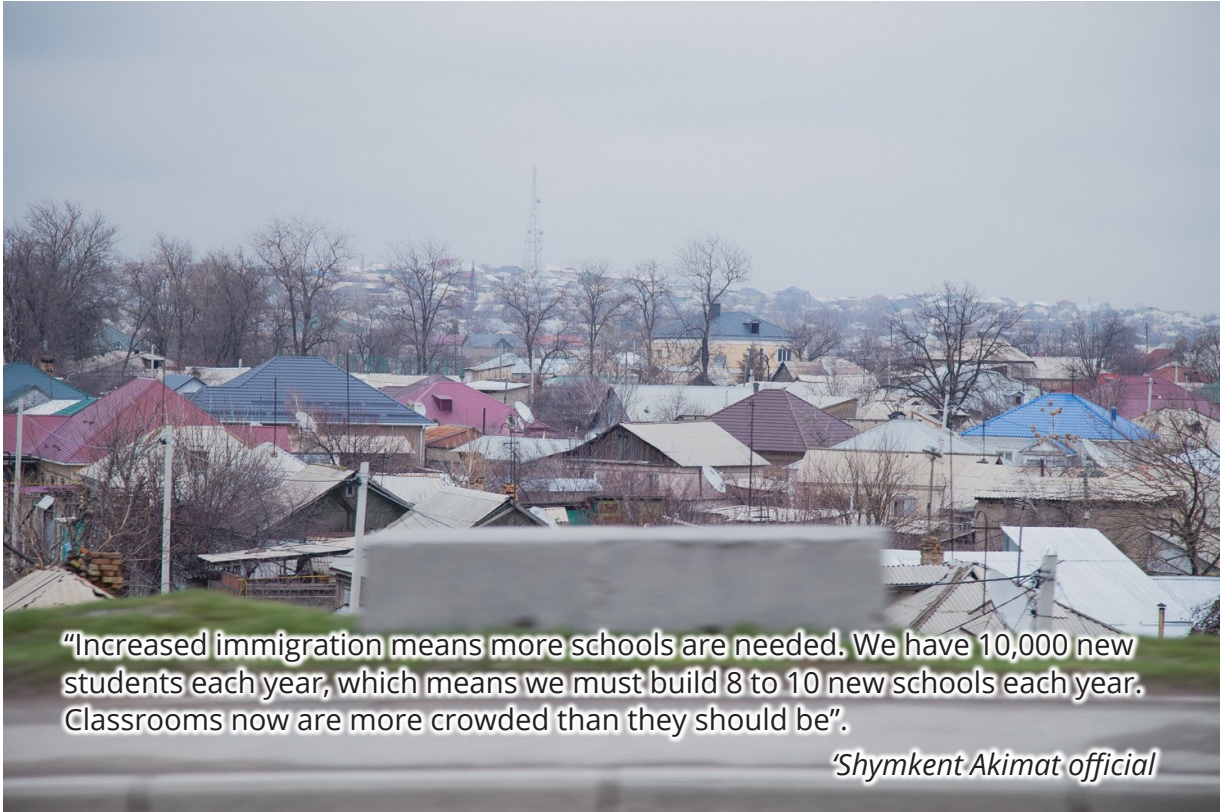


"There are big differences between north and south in terms of gender equality. The north has a mentality more akin to the European, while in the south, it's usual for adult women to live with their parents. In Soviet times, women were part of the workforce, so there was more gender equality. Today, Kazakh traditions have re-emerged, meaning women are being taken care of."

*Aruzhan, Art Historian, Shymkent*

Another salient issue in some cities, and in Shymkent in particular, pertains to informal settlements. "There is an ongoing process of squatting in the outskirts of many cities. Rural migrants get invited to cities at voting times. They settle in unattractive lands in the periphery, for which they are offered land titles. This is the case of the Shanyrak district in Almaty. People from many different places built their homes there with whatever materials they could find. Later, the government withdraws the offer. This has been a frequent practice in Almaty and also in Astana" (Kazakova, 2018). It is never easy to discuss processes of informalization, especially with strong governments such as the Kazakh. It is therefore important to recognize the existence of these informal settlements and support the integration of their inhabitants as regular citizens.





“Increased immigration means more schools are needed. We have 10,000 new students each year, which means we must build 8 to 10 new schools each year. Classrooms now are more crowded than they should be”.

*‘Shymkent Akimat official*



“In Kazakhstan everyone knows that here you can walk, bike and swim most of the year, we have 8 months of sunny days. With a mild climate, nature is good, people are good.”

*Shymkent Akimat official*

The Shymkent stories provide an image of a larger city where people connect with each other and solve each other's problems in unexpected ways. One micro-story describes a person who enjoys helping people find work: "I like to help people find jobs. I found a woman a placement as an accountant, five men jobs at a construction company, and two girls as waitresses. And many others, I don't remember now" (UNDP-MN, 2018). Another story describes how people, when encouraged by others and with appropriate public spaces, help advance the standards of urban quality of life: "With some friends, we saved some money and installed a free WiFi station at the park near my house. Some businessmen saw this, and they supported this initiative for four months. Everyone could use the Internet for free. It was very good for everyone, especially visiting students, who could save money and spend it on other things" (UNDP-MN, 2018). There is a tale about an animal-lover: "I volunteer at an animal shelter. I post photos of animals to help find new homes for them. I also go there once a week to spend some time with the dogs and cats" (UNDP-MN, 2018). Another about a mathematician: "I organized an online course in math, to help children in remote areas with computers solve homework problems" (UNDP-MN, 2018). All these stories show how cities bring together individual passions and talents, and how, brought together, these interests can be developed further. It demonstrates the power of togetherness.

The faces, places, and insights shown here represent a small, qualitative window revealing the fascinating urbanization process taking place in Kazakhstan today. Together with the insights from the quantitative analyses (the Urban-Adjusted Human Development Index and the Habitat Commitment Index), as well as the reflections of the work done by the UNDP Country Office, the final chapter presents a set of conclusions and recommendations for action.

## CHAPTER 4: FRAMEWORK FOR CHANGE

Urbanization is fundamental for socio-economic development, it can be a fulcrum for positive changes in environmental development, and hence it is a strategic hub for SDG implementation. The merits of urbanization are starting to be seen in Kazakhstan. In 2017, the country's most urbanized regions performed higher in human development than those less urbanized (see chapter 2). But urbanization must be aided, guided, planned for, and consistently managed. This report contributes to this objective by putting forward a framework for change. Rather than a piecemeal list of recommendations, a framework for change is a group of interlinked ideas that, because of their interactions, support and deepen each other. It is in this way that the ideas below should be considered, as a framework, a strongly interconnected set. In this sense, not only does it matter **what** is done, but **how** it is done. The emphasis should be placed on the strategy of interconnections that reinforce joint outcomes. This involves a new way of thinking and a new way of working, localized and intersectoral.

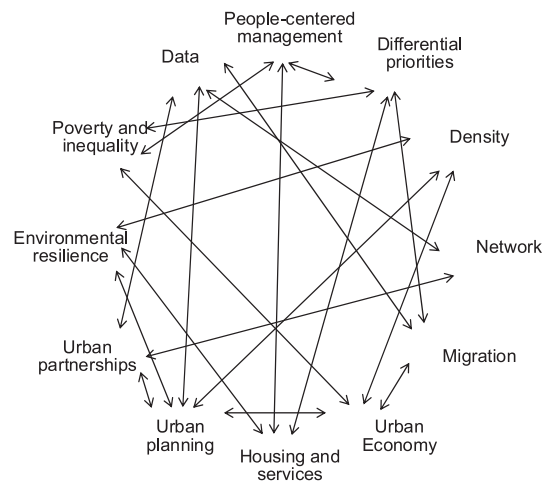
It is urgent for decision makers to understand that the physical, environmental, and social infrastructures that cities represent trigger many chains of interconnected effects. Often, the high costs associated with laying out and maintaining all these types of infrastructure are not sunk costs, but rather investments into other sectors' policies. Conversely, it can also happen that high-quality infrastructures boosting one sector have adverse effects in another sector. It is urgent, then, to have an integrated approach. One that does not shy away from complexity, one that decidedly balances again and again in every step of the decision-making process the three pillars of sustainable development: economy, environment, and people.

In the midst of Kazakhstan's 2050 Transformative Agenda, the urgency of this message cannot be stressed enough. Actions must be taken, ideas behind reigning paradigms must be defined, or an opportunity will be missed. To postpone is not an alternative.

### 4.1. Strategic Policy Points

What follows is a set of 12 policy strategies and 28 specific policy actions that result from the quantitative and qualitative analysis provided in this report. Rather than an extensive, all-encompassing list of recommendations, this "framework for change" includes a selection of strategic points that should trigger transformations or shifts in the way urban policies and programmes are being thought of in Kazakhstan.

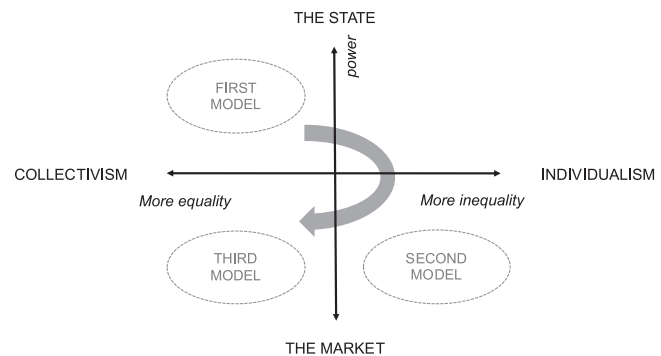
*Figure 27: From a set of recommendations to a framework for change*





## 1. Promote a people-centred model of urban management

As Kazakhstan transitions out of a model of urban management based on the central government provision of goods and services into a market-based mechanism, it is important to be mindful of the failures of the second model, where efficiency can run against equity and environmental standards. Thus, this systemic transition ought to consider preserving communitarian and earth-friendly values, with a people-centred perspective. The ultimate goal of all urban policy is to satisfy the needs of real people, rather than be functional, delivering high economic output but few social outcomes. Furthermore, the model should work for all people and understand the different needs and demands across gender, socio-economic status and age.



Adapted from: (Heurkens, 2012)

High rises, big data, and the Internet of things are not necessarily the paradigmatic urban solution for every city, as these can easily make invisible those already excluded, invisible. “Sensors are not smart. Digital kiosks do not save the world. Efficiency is not democracy ... a truly smart city is one that creates equal opportunities for people to connect with each other and with the world. It allows its residents to decide what their definition of “smart” should be, and what constitutes real civic value” (City of Boston City, 2018). Participatory information technology and open data can promote greater citizen engagement, transparency, reduction of information inequality among urban residents, and a more localized and inclusive understanding of issues. But it is important to arrive at a clear, locally appropriate definition of what a smart city means, or more importantly, define nationally-relevant paradigms of what Kazakh cities of the 21<sup>st</sup> century want to look like.

Policy recommendations:

- Base transfer priorities on existing demands (i.e. number of children), rather than supply capacity or on existing infrastructure (i.e. number of parks available);
- Enforce environmental and equity standards for urban services and for urban development. For example, quality standards for housing provision should ensure affordability in maintenance and operations, coordination with land use planning, and energy-efficient technologies;
- Support open research platforms and civic discussions about the nationally and sub-nationally relevant paradigms of what Kazakh cities of the 21st century want to look like.

## 2. Differentiate priorities for growing and shrinking cities

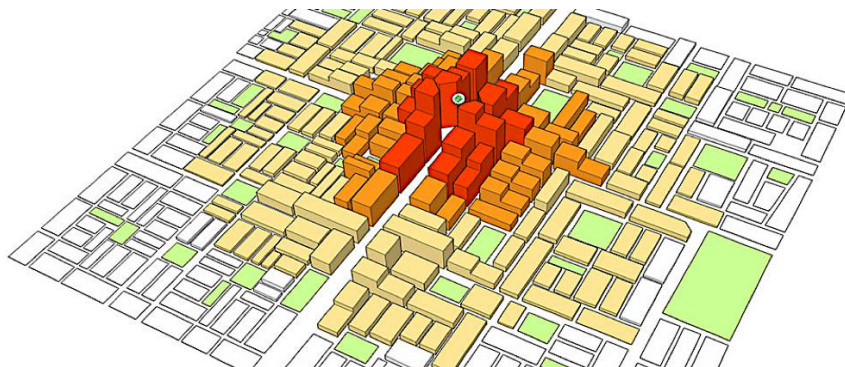


Night-time satellite lights data (World Bank, 2017) shows that between 1996 and 2010 Kazakhstan had one of the largest gains in the density of economic activity, despite having one of the lowest concentrations in the East Asia region. The World Bank analysis also shows that growing cities (78.1 per cent) are rapidly absorbing population, while declining cities (21.9 per cent) are not shrinking as fast. In comparison to other countries in the region, Kazakh cities have particularly low densities but show signs of a rising dynamism. Small cities in Kazakhstan face very different challenges to large cities (see chapter 2). For example, small cities struggle with economic diversification and crumbling infrastructure (SDG 6 and 11), while large cities experience worsening air pollution (SDG 8 and 10). The range of statuses in the universe of Kazakh cities pose radically different action priorities to the government.

Policy recommendations:

- Reinforce the trend towards more city autonomy with human and technical capacities, for growing cities. Growing cities ought to be given more room to act by themselves in terms of fiscal capacity, spatial planning, and land value capture powers;
- Guarantee welfare and well-being standards do not fall below certain levels in shrinking cities. Redistribution is the responsibility of the government.

## 3. Foster benefits of density while offsetting potential disadvantages



With appropriate sustainable urban design and urban planning, density can be welcomed in order to exploit its benefits while reducing potential negative effects. Denser cities with smaller urban footprints generally reduce transport distances, infrastructure needs, energy consumption, and environmental impact per capita, while encouraging community engagement

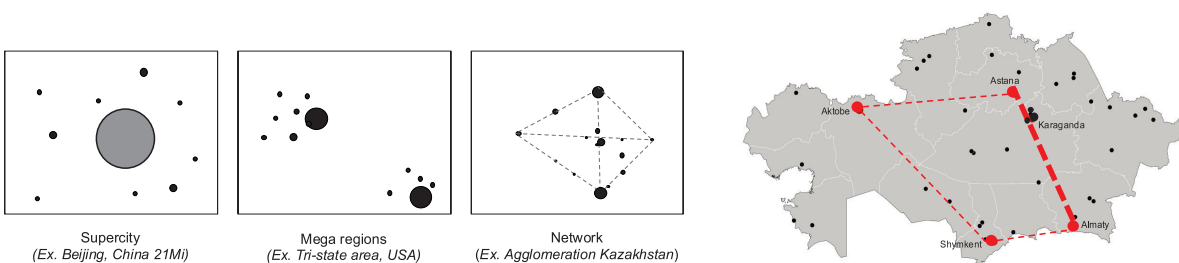
and triggering social innovation. When urban land consumption outpaces population growth, it is unsustainable from an economic and environmental point of view, which is why territorial planning intends to curb sprawl. If cities worldwide were of low density, their footprint would cover more of the earth, negatively affecting a greater number of ecosystems, and diminishing the biological capacity to absorb the carbon waste.<sup>14</sup> On the other hand, evidence also shows that modern high-density, high-rise developments significantly change consumption patterns, increasing energy and water consumption per capita and the cost of land and housing, as they tend to have more communal services that are only used occasionally.

In Kazakhstan, population density and green space are significantly below international averages. Lower urban densities that are not accompanied with increased urban green space, demonstrate there is the need and the opportunity to increase both without necessarily having negative consequences for health and the environment. Ample evidence demonstrates the correlation between “walkability” and “liveability”, health, and increased property values; making walkability one of the most important concepts in urban sustainability in the 21st century. Strategies to increase walkability via urban design include: visually active and physically permeable frontage, smaller blocks, shade and shelter (from extreme weather), mixed-use zoning, and higher densities. Having both potential advantages and disadvantages (see table in Endnote<sup>15</sup>), density is a condition that varies across the city, having several higher densification points that should be coordinated with hubs of services and infrastructure (especially public transport), following the principles of Transit Oriented Development. Areas away from these dense hubs would find more appropriate Demand Oriented Transport models (OECD-ITF, 2015).

Policy recommendations:

- Promote urban planning and design principles (like Transit Oriented Development) to avoid uncontrolled urban sprawl, encourage mixed-uses, and incentivize (rather than enforce) increased densities. High-density developments should follow urban design standards that ensure the development of amenities associated with low-densities: more greenery, more roaming space, and cleaner air;
- Integrate fiscal incentives and taxation in municipal planning to address market failures concerning urban land;
- Encourage greater “walkability” by promoting a standardized measurement for it so it can be incorporated into planning and design regulations.

#### 4. Support the emerging system of cities



The system of cities in Kazakhstan can be structured in a strategic way that reinforces its sustainable development objectives. While in global comparison Kazakh cities are less concentrated, this can be an advantage. Urban policentricity is associated with higher and more evenly distributed incomes as well as with higher levels of quality of life. For example, Europe has a higher population density in small and intermediate cities than Africa. A dense and better-connected system of cities, where nodes are closer in terms of transport, communication and knowledge exchange, is beneficial in terms of urban sustainability in all its three dimensions (economic, social, and environmental).

Policy recommendations:

- Support city-to-city knowledge transfer and inter-administrative collaborations, so that cities learn to collaborate and compete with each other to offer the best quality of urban infrastructure to their inhabitants.

### *5. Recognize immigration as a development need*



Not only is urban migration a good partner of sustainable development, it is urgent for local governments to recognize that “the country faces an acute demographic-economic imbalance. Solely relying on natural population growth, the country will not be able to close the productivity gap with the OECD countries for another 18 years. In concrete terms, it needs to add 500,000 jobs to the economy to reach the desired growth rate of at least 4 per cent and achieve a GDP per capita of 70,000 by 2050” (Keserovic, 2018). People are already voting with their feet in search of better opportunities. As chapter 2 shows, the regions that scored lowest in the UA-HDI experienced the highest out-migration. In contrast, the highest scoring regions attracted many new residents. Perhaps unsurprisingly, small cities struggle more with economic diversification than large and growing cities. It is also important to understand that agricultural productivity reinforces urbanization; a more productive agricultural sector means less rural workers will be needed which, in turn, means rural to urban migration will increase. Indeed, internal migration should be further encouraged as it strengthens and diversifies the urban economy, helps efficiently reach more citizens with urban products and services, and broadens the extent of human capabilities. Higher internal mobility leads to higher labour elasticity.

Policy recommendations:

- Modernize and simplify the registration process for internal migrants ensuring equitable access to public services;
- Develop a consolidated one-stop system that integrates different sources of official statistics on migration: quota system, special programmes, patent visas, and overextensions of the CIS visa-free regime;



- Engage in a future policy research agenda supporting the Ministry of Social Protection to calculate, monitor, and manage “city absorption capacity”, taking into account city-to city knowledge exchanges.

## 6. Support the urban economy

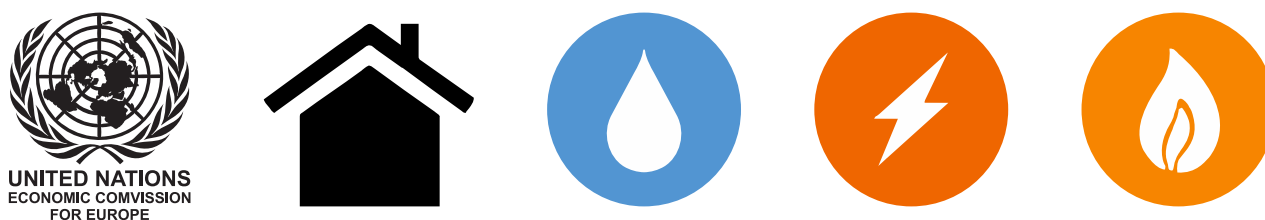


Cities are responsible for more than 70 per cent of Kazakhstan’s Gross Value Added (World Bank, 2017), but this economic contribution is not necessarily diverse. The most successful cities are those that have more than one kind of success and are continually able to reinvent themselves (Jacobs, 1969). According to the Habitat Commitment Index, Kazakhstan’s cities are currently performing significantly below their capacities. Even top performing cities only reach 60-70 per cent of their potential. With an enabling policy environment, growing cities can support the country in the diversification of its economic base. Urban-type economic sectors such as construction, manufacturing, knowledge-based services, and financial intermediation are indispensable drivers of competitiveness and productivity. Supporting local manufacture and small and medium-size business development in cities can also strengthen the development of the service-based economy. Since the benefits of agglomeration depend on continuous good performance in the operation and delivery of urban goods and services, it is important to guarantee that akimats have enough resources to invest to improve how cities function.

Policy recommendations:

- Guarantee financial and technical support for the development of service-based SMEs;
- Strengthen local finances by focusing on basic property taxes, which requires efforts updating city cadastres. Complementary financing tools like land value capture, transferable development rights, sector-based voluntary taxation, or Business Improvement Districts can follow.

## 7. Monitor quality and affordability of housing and basic services

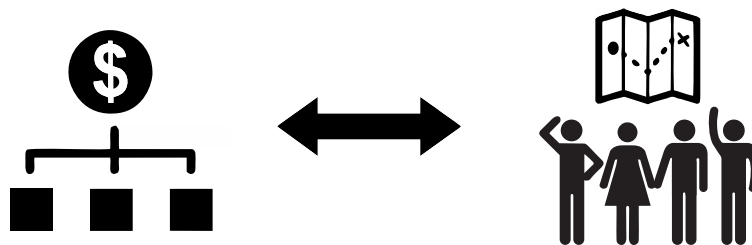


Kazakhstan’s housing stock has expanded considerably since 2000, yet, cities are experiencing housing shortages, especially those that are growing. Real house prices have increased six-fold and the rental housing market remains under-developed. Addressing this issue requires efforts in land use regulation, housing finance, and developing a rental market, to provide housing opportunities for families that do not have the financial capacities to become homeowners. The recently launched 7-20-25 housing programme represents an important stimulus to the housing mortgage market. While the programme has an important regional differentiation, it is necessary to guarantee housing affordability not only for families with average incomes, but also for those below the average. It is also important for the country to devise a truly integral housing policy that includes land use efficiency and green technologies to ensure sustainable urban development. In addition, cities should never stop working to maintain the quality and coverage of their basic services networks. Urban infrastructure and basic services need constant repair and expansion, as well as monitoring to ensure sustained quality. Chapter 2 noted that Kazakhstan’s cities continue to face challenges in providing full sewerage coverage, quality drinking water and adequate heating. The responsibility of local governments in managing urban infrastructure does not end with ensuring full coverage. It also requires assuring continued satisfaction with the quality and accessibility of the services provided. Improving the quality of urban services can substantially enhance a city’s built environment and ultimately contribute to higher well-being.

Policy recommendations:

- Expand green loans to ESCOs to encourage homeowner associations to modernize the water and energy efficiency of their buildings (UNDP-GEF, 2018);
- Prioritize affordable housing (SDG target 11.1) and follow specific recommendations in the UNECE Housing Profile 2018;
- Develop open-access quantitative indicators to monitor the quality of urban services, including citizen feedback (SDG target 11.3 on participation).

## ***8. Link local budgets to physical urban planning***



City master plans are often developed without detailed needs assessments (OECD, 2017). It is important to connect spatial plans with the people living in these territories via effective participatory planning conduits. Not only do local actors need to have a voice in city planning, local governments need to ensure that participation is inclusive across income levels and genders. Furthermore, spatial planning and urban development should be linked effectively and transparently to city budgets on a priority basis. For this, land use should be clear,

transparent, enforceable, and make sense locally. Land-use planning can be an effective city revenue source, but it should not be understood as urban land expansion, which, if not connected to sound urban planning, is unsustainable in terms of ecological sustainability and hinders economic agglomeration effects.

Policy recommendations:

- Reinforce the Urban Zoning Registry so it becomes an integrated urban management tool linking planning, control, and taxing (OECD, 2017).
- Update the cadastres so property taxes and land-capture measures can be effectively implemented.
- Mandate a budget line for participatory budgeting to be incorporated into budgets of large cities, to encourage active citizenship.

### ***9. Strengthen urban institutions, partnerships, and programmes***



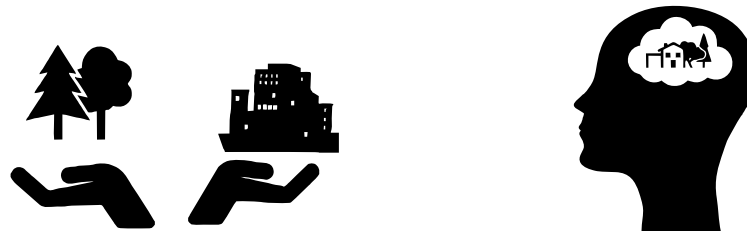
The institutional architecture of the urban sector in Kazakhstan must reflect the intrinsically intersectoral nature of urban policy. City management simply reproduces most national-level policies and programmes at the local level. All national sectors: health, education, finance, migration, social protection, etc., are addressed at the city level (UNGA-MAPS, 2017). Hence, an integrated institutional approach is not only needed, but is a necessary condition to ensure positive feedback loops between different policies. This entails inter-ministerial as well as intra-ministerial coordination. When the Ministry of Regional Development was transformed into a Department within the Ministry of National Economy, the importance of including urban topics in the national agenda and the capacity of the sector to coordinate other sectors was weakened. A coordinated intersectoral approach, particularly during a transition towards a more market-based economy, also needs to establish strong partnerships with the private sector, especially with real estate developers and the communities. However, as developers' business models are based on efficient supply rather than demand satisfaction, it is crucial

for the government to assume an active role in ensuring a positive dialogue between different actors within civil society. The UN system must also react to this integrated approach, working across agencies to ensure better outcomes, not just outputs. A coordinated intersectoral approach does not demand more programmes, but rather fewer, with more programmatic alignment.

Policy recommendations:

- Leverage partnerships across divergent sectors and levels of government: within and between Ministries, across UN agencies, engaging a broad spectrum of actors in the civil society (especially promoting dialogue between private sector developers and the community).
- Minimize the number of strategies to maximize policy and programme effectiveness.

### *10. Develop a culture of urban resilience*

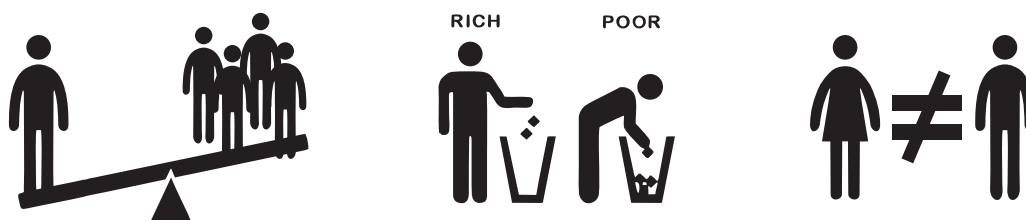


Urban resilience is the ability of the population, infrastructure, and institutions in a city to withstand external shocks and disasters. As population and economic output is concentrated in cities, they concentrate risks and at the same time hold the key to mitigate those risks, create risk-awareness, and adapt effectively to disruptions. Urban resilience can be strengthened via mitigation and adaptation measures. On one hand, Kazakhstan’s mitigation agenda cannot be effectively tackled without cities’ collaboration. Of all sectors, energy accounts for about 80 per cent of total emissions, 90 per cent of which comes from power and heat generation. Buildings, primarily residential, account for 13.5 per cent of power demand and 24 per cent of heat demand (UNDP-GEF, 2018). Green building and green retrofitting for energy efficiency are indispensable. On the other hand, in terms of adaptation, local government actions can spearhead noticeable impacts. Kazakhstan fares above the global and regional average in the INFORM Risk Index. The 2018 score of this Index indicates that the component with most room for improvement is “coping capacity”, particularly the governance indicators of the institutional component (Transparency International’s Corruption Perception Index and World Bank’s Government Effectiveness Index) (IASC, 2018).

Policy recommendations:

- Design comprehensive risk management local strategies that actively involve citizens in identification, reduction, management, and transference of risk;
- Consider gender mainstreaming in urban design, as well as in risk management policy.

## 11. Confront different types of poverty and inequality



Even though nationally measured statistics like the Multidimensional Poverty Index and HDI rank Kazakhstan low in poverty compared to other countries, more in-depth studies like the Inequality-Adjusted HDI and the Regional HDI, show extensive in-country gaps. Uneven regional levels of growth, productivity, and employment, and regional disparities in health and access to health care are some of Kazakhstan's sustainable development challenges and relate to SDG 8, 10, and 11 (NHDR, 2016; chapter 3). Inequality and poverty are relational by nature and are more evident at lower scales of analysis. There are larger inequalities at the regional level than the national level, and, as the HCI demonstrates, inequalities are larger between cities than between regions. The performance gaps between small and large cities in Kazakhstan, as well as the differences in quality and coverage of basic services, ranging from 98 per cent to 40 per cent, merit attention. Moreover, in countries around the world income inequality is highly underestimated due to tax evasion and under-reporting by some of the wealthiest groups in society (Oxfam, 2017). It is thus very probable that income inequality in Kazakhstan is significantly higher than officially reported.

Gender inequality is also notable, with cities in the west and the centre having the largest gender pay gap. Notably, at the national, regional, and local level, women are under-represented in political positions, which undermines the possibility of bringing a gender perspective to the table and to the decision-making processes. As a consequence, the existing pay gap tends to reflect a "trap" of disadvantage in accessing urban services and reaping the benefits of urbanization. Addressing gender equality not only tackles SDG 5, but also SDG 11.

Policy recommendations:

- Adjust poverty lines to city-specific conditions with thresholds that consider costs of living;
- Make available disaggregated information by gender, age, and socio-economic status;
- Support studies that highlight different types of inequality, as well as information on Kazakhstan incomes and the top one per cent wealthiest of the population.



## 12. Ensure city-level data collection for performance benchmarking



City-level data ensures that issues are analyzed at the correct geographical scale. It also enables budgets as well as spatial planning to respond to each other, and to the needs of the population. Pursuing the principle of leaving no one and no place behind, necessarily implies increased efforts in data collection, SDG localization and monitoring. For this reason, local data should be consistently and uniformly gathered, should be of open access, and should include enforceable protocols so that sources other than official censuses and household surveys can be made available to the public. Unless relevant local data becomes available, there will be a growing gap between public discourse and urban management. As highlighted in chapter 2, city-level data currently only exists for the politically more important tier I and tier II cities. The lack of data for tier III cities means the exact quality of life in these cities is unknown, though it is estimated to be lower, on average. As mentioned throughout this report, cities are a hub for SDG implementation, which is why some local governments are already committed to city-level SDG assessment and monitoring. Kazakhstan should follow such initiatives and encourage its three agglomeration-level cities, Astana, Almaty, and Shymkent, to engage in city-level SDG assessments.

Policy recommendations:

- Assess and monitor city performance in SDG progress starting with Astana, Almaty, and Shymkent;
- Adopt the HCI methodology of incorporating nationalized SDG indicators to benchmark urban performance across tiers I and II cities in Kazakhstan. Such a dashboard can facilitate performance-based revenue transfers and city-to-city knowledge cooperation;
- Reinforce open-access urban data accessibility via a centralized urban data platform and develop data sharing protocols to involve other actors in data collection and analysis.

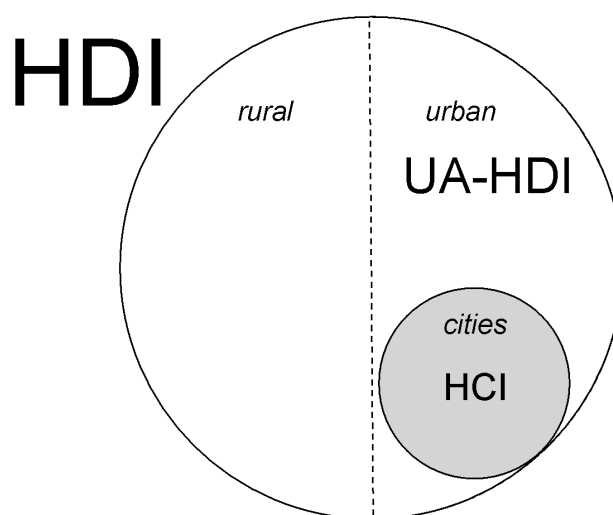
## Summary List of Policy Recommendations with Interlinkages

Policy Strategies	Policy Recommendations	Geared to	Interlinkages	Related SDG
<b>1. Promote a people-centered model of urban management</b>	1.1. Base transfer priorities on existing demand, rather than supply capacity or on existing infrastructure.	Nation	2, 4, 7, 12	1, 3, 4, 5, 6, 8, 10, 11
	1.2. Enforce environmental and equity standards for urban services and for urban development	Nation, Akimats	3, 4, 5, 7, 8, 9, 12	1, 3, 4, 5, 8, 10, 11, 13
	1.3. Support research and discussion platforms about the nationality relevant 21st century urban paradigms.	Nation, Akimats, UNDP	1, 3, 5, 8, 10, 11	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17
<b>2. Differentiate priorities for growing and shrinking cities</b>	2.1. Reinforce autonomy of growing cities in terms of: human and technical capacities, fiscal capacity, and spatial planning.	Nation	1, 4, 5, 8, 12	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17
	2.2. Guarantee welfare and well-being standards do not fall below certain levels in shrinking cities.	Nation	1, 4, 7, 9, 11, 12	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 17
<b>3. Foster density as a means to economic and environmental sustainability</b>	3.1. Promote urban planning and design principles that encourage mixed-uses and enforce minimum densities.	Nation, Akimats	4, 5, 6, 7, 8, 9, 10, 12	5, 7, 8, 9, 10, 11, 13, 15, 17
	3.2. Integrate fiscal incentives and taxation in municipal planning mixed-uses and enforce minimum densities.	Nation, Akimats	1, 2, 3, 5, 6, 7, 8, 9	5, 6, 7, 8, 10, 11, 13, 16
	3.3. Encourage greater “walkability” by incorporating minimum standards into planning and design regulations.	Nation, Akimats	3, 4, 6, 8, 10, 11, 12	3, 4, 5, 7, 8, 9, 10, 11, 12
<b>4. Support the emerging network of cities</b>	4.1. Support city-to-city knowledge transfer and inter-administrative collaborations.	Nation, Akimats	1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17
<b>5. Recognize immigration as a development need</b>	5.1. Modernize and simplify the registration process for internal migrants ensuring equitable access to public services.	Nation	1, 2, 4, 7, 9, 10, 11	1, 2, 3, 4, 8, 9, 10, 11, 16, 17
	5.2. Develop a consolidated one-stop statistical system integrating the different data sources on migration.	Nation	1, 2, 4, 7, 8, 9, 10, 11, 12	10, 11, 16, 17
	5.3. Engage in a future policy research agenda to calculate, monitor, and manage “city absorption capacity”.	Nation, Akimats	2, 4, 7, 8, 10, 11, 13	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17
<b>6. Support the urban economy</b>	6.1. Guarantee financial and technical support for the development of service-based SMEs	Nation, Akimats	2, 3, 4, 5, 10, 11, 12	1, 5, 8, 9, 10, 11, 17
	6.2. Strengthen local finances by focusing on basic property taxes, which requires efforts updating city cadasters.	Akimats	1, 2, 3, 4, 6, 8, 9, 10, 11, 12	10, 11, 15, 17
<b>7. Monitor quality and affordability of housing and basic services</b>	7.1. Prioritize affordable housing and follow specific recommendations in the UNECE Housing Profile 2018.	Nation, Akimats	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13	3, 5, 6, 7, 10, 11, 12, 14
	7.2. Develop open-access quantitative indicators to monitor quality of urban services, including citizen feedback.	Nation, Akimats	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12	1, 3, 4, 5, 8, 10, 11
<b>8. Link local budgets to physical urban planning</b>	8.1. Reinforce the Urban Zoning Registry so it integrates planning, control, and taxing.	Akimats	1, 2, 3, 4, 7, 12	6, 7, 9, 10, 11, 12, 13, 15
	8.2. Update the cadasters so property taxes and land-capture measures can be effectively implemented.	Akimats	1, 2, 3, 4, 7, 12	6, 7, 9, 10, 11, 12, 13
	8.3. Mandate a budget line for participatory budgeting to be incorporated into budgets of large cities.	Nation, Akimats	1, 4, 6, 9, 10, 12	3, 4, 5, 10, 11, 12, 17
<b>9. Strengthen urban institutions, partnerships and programmes</b>	9.1. Leverage partnerships across divergent sectors and levels of government.	Nation, Akimats, UNDP	4, 5, 6, 7, 8, 10, 12	7, 9, 11, 16, 17
	9.2. Minimize the number of strategies to maximize policy and program effectiveness	Nation, Akimats	2, 3, 6	10, 12, 11, 16, 17
<b>10. Develop a culture of urban resilience</b>	10.1. Design comprehensive risk management local strategies that actively involve citizens.	Akimats	3, 4, 5, 6, 7, 8, 9, 11, 12	2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15
	10.2. Consider main streaming a gendered approach.	Nation, Akimats, UNDP	1, 5, 6, 7, 8, 9, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17
<b>11. Confront different types of poverty and inequality</b>	11.1. Adjust poverty lines to city-specific conditions with thresholds that consider costs of living.	Akimats	2, 5, 7, 8, 9, 10	1, 5, 6, 10, 11
	11.2. Make available income information at a disaggregated scale to allow for studies at the city level.	Akimats	5, 7, 9, 12	1, 3, 4, 5, 8, 10, 11
	11.3. Support studies that make visible different types of inequality, as well as information on Kazakhstan’s 1%.	Nation, UNDP	5, 7, 9, 12	1, 3, 4, 5, 8, 10, 11
<b>12. Ensure city-level data collection for performance benchmarking</b>	12.1. Access and monitor city performance in SDG progress starting with Astana, Almaty, and Shymkent	Akimats, UNDP	1, 4, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17
	12.2. Adopt the HCI methodology to facilitate performance-based revenue transfers and city-to-city cooperation.	Nation, Akimats	2, 4, 6, 7, 10, 11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17
	12.3. Reinforce open access urban data accessibility and develop sharing protocols to broaden data collection.	Nation, Akimats, UNDP	2, 4, 5, 6, 7, 8, 9, 10, 11	5, 9, 11, 12, 13, 17

## Urban-Adjusted Human Development Index and Habitat Commitment Index

The 2018 National Human Development Report uses two indices to assess well-being in Kazakhstan's cities: the Urban-Adjusted Human Development Index (UA-HDI), and the Habitat Commitment Index (HCI).

*Figure A1: Difference in data disaggregation levels: HDI, UA-HDI, and HCI*



### Urban-Adjusted Human Development Index

#### • Background

Human development is the process of improving people's well-being and expanding their freedoms and opportunities. The human development approach is broad, encompassing a wide range of economic, social, political, psychological, environmental, and cultural factors that

expand or restrict people's opportunities and freedoms. The Human Development Index (HDI) was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. The HDI can therefore be useful for questioning policy choices, investigating why two countries, regions, or cities with the same level of GDP per capita achieve different human development outcomes. These contrasts can stimulate debate about government policy priorities (UNDP, 2016).

#### • About the UA-HDI

The Urban-Adjusted HDI expands the HDI to reflect Kazakhstan's urban realities by adding a fourth set of indicators that refer to the built environment of cities. The UA-HDI is a summary measure of average achievement in four key dimensions of human development: a long and healthy life, knowledge, a decent standard of living, and living in an enjoyable, high-quality, built environment.

The UA-HDI is the geometric mean of normalized indices for each of the four dimensions. The value of the UA-HDI varies between 0 and 1, with a score close to 0 indicating a greater distance from the maximum that can be achieved on the aggregate factors that make up the index. The UA-HDI was calculated for the urban areas of Kazakhstan’s 16 regions. The findings of the UA-HDI are presented in chapter 2.

- **Data sources**

The UA-HDI was calculated using official data provided by Kazakhstan’s Committee on Statistics. For all indicators and dimensions, only the most recently available data was used for the UA-HDI calculations.

- **Calculating the Urban-Adjusted Human Development Index**

Two steps are used to calculate the UA-HDI.

*Step 1: Creating the dimension sub-indices*

Minimum and maximum values (goalposts) are established in order to transform the indicators expressed in different units into indices on a scale of 0 to 1. These goalposts act as the “natural zeros” for low performance and “aspirational targets” for high performance, respectively, from which component indicators are standardized.

Having defined the minimum and maximum values, the dimension sub-indices are calculated using the following equation:

$$\text{Dimension index: } \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

For the decent life dimension, for example, the equation is first applied to each of the two indicators, and then the arithmetic mean of the two resulting indices is taken. Because each dimension index is a proxy for capabilities in the corresponding dimension, the transformation function from income to capabilities is likely to be concave (Anand and Sen 2000). This is especially the case for income, as each additional dollar of income has a smaller effect on expanding capabilities. Thus, for income, the natural logarithm of the actual, minimum and maximum values is used.

*Step 2: Aggregating the dimensional indices to produce the Urban-Adjusted Human Development Index*

The UA-HDI is calculated using the equation below, which takes the geometric mean of the four dimensions’ sub-indices:

$$\text{UA-HDI} = (I_{\text{Health}} * I_{\text{Education}} * I_{\text{Income}} * I_{\text{BuiltEnvironment}})^{1/4}$$

## • UA-HDI Indicators: Setting the Goalposts

Depending on the indicator, international and national standards determine the goalposts. The goalposts are displayed in Table A1, and explained in more detail in the following paragraphs.

It is important to note that for most indicators the maximum value is higher than the minimum value. However, in the case of mortality, infant mortality, and urban poverty, the maximum values are all lower than the minimum value. As mentioned before, the maximum value represents “aspirational targets”. For example, we ‘aspire’ to have infant mortality decrease, thus the aspirational value is lower than the minimum, which reflects low performance, in this case high infant mortality. The same is true for urban poverty, as we aspire to have lower urban poverty, and for mortality causes, as we aspire to reduce deaths caused by certain diseases. This methodology has been used for global HDI calculations (UNDP, 2016).

*Table A1: Goalposts for the UA-HDI Calculations*

Dimension	Indicator	Minimum	Maximum	References
<b>Health</b>	Life expectancy (years)	20	85	UNDP, Maddison
	Mortality from diseases of the circulatory system	352	97	Local standards
	Mortality from diseases of the respiratory organs	218	36	Local standards
	Mortality from neoplasms	151	60	Local standards
	Mortality from diseases of the digestive system	140	23	Local standards
	Infant Mortality (per 1,000 births)	25	5	International standards (UNDP)
<b>Standard of living</b>	Average real income (PPP 2014 USD)	100	75,000	Kahneman and Deaton
	Urban Poverty (%)	4	1	Local standards
<b>Built environment</b>	Sanitation (%)	40	100	Local standards
	Quality of services - Drinking Water	4	100	Local standards
	Quality of services - Heating	38	100	Local standards
	Green Space Ratio (%)	0	24	Local standards
	Public Transport Ratio	15	560	Local standards
	Investment - Fixed Assets (tenge per capita)	150,000	985,000	Local standards
	Investment - Housing (tenge per capita)	20,000	180,000	Local standards
<b>Knowledge</b>	Mean Years of Schooling	8	15	Local standards

### *Health*

The justification for placing the minimum for life expectancy at 20 years is based on historical evidence that no country in the 20<sup>th</sup> century had a life expectancy of less than 20 years (Maddison, 2010; UNDP, 2016).



Minimum and maximum values for mortality causes were selected in accordance to the lowest and highest achievements observed in Kazakhstan, referred to as local standards in Table A1. For example, mortality from neoplasms (cancer) was highest in Pavlodar, with 151 deaths, and lowest in South Kazakhstan, with 60 deaths. These two cases have therefore been used as goalposts to rank the performance of other regions.

The infant mortality values are based on the performance of other high-income countries. For example, in 2013, the UK, Italy, and Germany had infant mortality rates of less than 5 (per 1,000 live births), none had rates higher than 20. Middle-income countries perform lower, as do countries that rank medium in human development, with infant mortality at about 35. For Kazakhstan, the value of 25 was therefore chosen as a cut-off point for low performance, with 5 for high performance.

### *Standard of living*

The low minimum value of USD 100 is used for average incomes and is justified by an income that is close to the minimum. Regarding the maximum of USD 75,000 per capita, Kahneman and Deaton (2010) have shown that there is virtually no gain in human development and well-being from income per capita above that amount.

The goalposts for urban poverty are set by national and local poverty values. In some of Kazakhstan's urban areas poverty was less than 1 per cent in 2017 (0.6 per cent); in fact, no urban region exceeded 3 per cent poverty. Yet, as the national poverty rate is at about 4.5 per cent, the cut-off was set to 1 as the maximum and 5 as the minimum.

### *Built environment*

The maximum values (aspirational values for sanitation, heating, and drinking water) are set at 100, as it is desirable to achieve full access in quality drinking water, sanitation and heating. The minimums are determined by the lowest performing region: Kyzlorda with 40 per cent access in sanitation and 38 per cent of quality heating, and Kostanay with 4 per cent of households with quality drinking water.

The goalposts for green space, transport, and investment are set by observing the performance of high and low performing regions in Kazakhstan. For example, green space is highest in Almaty city with 24 per cent and lowest in Akmola with 0.04 per cent.

### *Knowledge*

Mean years of schooling (MYS) is determined by international standards and local performances. At the country level (which includes urban as well as rural areas), countries ranking high in human development report MYS of between 12 and 13. In 2017, Germany and Norway ranked highest with MYS between 14 and 15. Kazakhstan reported 11.8 MYS as a country average. MYS is higher at the urban level than in rural areas with an average urban MYS for Kazakhstan of 12.9 and some regions reaching 15.6. Thresholds are therefore set at 8 for the minimum, and 15 for the maximum.

The methodology for calculating MYS can be described as follows. The attainment of the population aged 25 and older is broken down according to level of education; those with no education, those with incomplete and completed primary education, those with incomplete and completed lower secondary education, and so on. These percentages are then multiplied by the official duration of schooling levels of the country, and for those with an incomplete level of schooling, that schooling level duration is divided by 2 in order to give a rough approximation to include in the measure. These separate calculations are then aggregated, to give a population weighted measure.

- **UA-HDI categories**

This NHDR groups the UA-HDI scores into 'very high', 'high', 'medium', and 'low' human development, according to the cut-off points below.<sup>16</sup>

Very high human development	0.75 – 1
High human development	0.5 – 0.75
Medium human development	0.25 – 0.5
Low human development	0 – 0.25

*Table A2: Data on UA-HDI Indicators for Aktobe and Mangystau; Calculating the UA-HDI*

Indicator	Minimum	Maximum	Aktobe	Mangystau
Life expectancy (years)	20	85	73	72
Infant Mortality (per 1,000 births)	25	5	9.7	10
Mortality from diseases of the circulatory system	352	97	197.5	98
Mortality from diseases of the respiratory organs	218	36	87.4	45.2
Mortality from neoplasms	151	60	91.4	63.9
Mortality from diseases of the digestive system	140	23	74.8	48.3
Average real income (PPP 2016\$)	100	75,000	14,287	31,522
Urban Poverty (%)	4	1	1.2	0.6
Sanitation (%)	40	100	84.7	98.7
Quality of services - Drinking Water	4	100	64	35.7
Quality of services - Heating	35	100	81.8	42.6
Green Space Ratio (%)	0	24	5.1	0.26
Public Transport Trips/Cars	15	560	329.7	18.9
Investment - Fixed Assets (tenge per capita)	150,000	985,000	353,224	451,471
Investment - Housing (tenge per capita)	20,000	180,000	81,559	54,582
Mean Years of Schooling	8	15	12.222	11.91

	<b>Aktobe</b>	<b>Mangystau</b>
<b>Health</b>	<p>Life expectancy index: <math>\frac{73-20}{85-20} = 0.8153</math></p> <p>Infant Mortality Index: <math>\frac{9.7-25}{5-25} = 0.765</math></p> <p>Mortality from diseases index: <math>\left(\frac{197.5-352}{97-352} + \frac{87.4-218}{36-218} + \frac{91.4-151}{60-151} + \frac{74.8-140}{23-140}\right) \div 4 = 0.633</math></p> <p><b>Aktobe Health Index:</b>  <math>(0.81 + 0.76 + 0.63) / 3 = 0.74</math></p>	<p>Life expectancy index: <math>\frac{72-20}{85-20} = 0.8</math></p> <p>Infant Mortality Index: <math>\frac{10-25}{5-25} = 0.75</math></p> <p>Mortality from diseases index: <math>\left(\frac{98-352}{97-352} + \frac{45.2-218}{36-218} + \frac{63.9-151}{60-151} + \frac{48.3-140}{23-140}\right) \div 4 = 0.92</math></p> <p><b>Mangystau Health Index:</b>  <math>(0.8 + 0.75 + 0.92) / 3 = 0.82</math></p>
<b>Decent Life</b>	<p>Income Index: <math>\frac{\ln(14,287)-\ln(100)}{\ln(75,000)-\ln(100)} = 0.75</math></p> <p>Poverty Index: <math>\frac{1.2-4}{1-4} = 0.93</math></p> <p><b>Aktobe Decent Life Index:</b>  <math>(0.75 + 0.93) / 2 = 0.84</math></p>	<p>Income Index: <math>\frac{\ln(31,522)-\ln(100)}{\ln(75,000)-\ln(100)} = 0.87</math></p> <p>Poverty Index: <math>\frac{0.6-4}{1-4} = 1</math></p> <p><b>Mangystau Decent Life Index:</b>  <math>(0.86 + 1) / 2 = 1</math></p>
<b>Education</b>	<p><b>Aktobe MYS Index:</b> <math>\frac{12.22-8}{15-8} = 0.60</math></p>	<p><b>Mangystau MYS Index:</b> <math>\frac{11.91-8}{15-8} = 0.56</math></p>
<b>Built Environment</b>	<p>Services Index: <math>\left(\left(\frac{84.7-40}{100-40}\right) + \left(\frac{64-4}{100-4}\right) + \left(\frac{81.8-35}{100-35}\right)\right) \frac{1}{3} = 0.69</math></p> <p>Green Space Index: <math>\frac{5.1-0}{24-0} = 0.21</math></p> <p>Transport Index: <math>\frac{329.7-15}{560-15} = 0.57</math></p> <p>Investment Index: <math>\left(\left(\frac{353,224-150,000}{985,000-150,000}\right) + \left(\frac{81,559-20,000}{180,000-20,000}\right)\right) \frac{1}{2} = 0.44</math></p> <p><b>Aktobe Built Environment Index:</b>  <math>(0.69 + 0.21 + 0.57 + 0.44) / 4 = 0.47</math></p>	<p>Services Index: <math>\left(\left(\frac{98.7-40}{100-40}\right) + \left(\frac{35.7-4}{100-4}\right) + \left(\frac{42.6-35}{100-35}\right)\right) \frac{1}{3} = 0.47</math></p> <p>Green Space Index: <math>\frac{0.26-0}{24-0} = 0.01</math></p> <p>Transport Index: <math>\frac{18.9-15}{560-15} = 0.007</math></p> <p>Investment Index: <math>\left(\left(\frac{451,471-150,000}{985,000-150,000}\right) + \left(\frac{54,582-20,000}{180,000-20,000}\right)\right) \frac{1}{2} = 0.29</math></p> <p><b>Mangystau Built Environment Index:</b>  <math>(0.47+0.01+0.007+0.29) / 4 = 0.195</math></p>
<b>Urban-Adjusted HDI</b>	<p><math>(0.74 * 0.84 * 0.6 * 0.47)^{1/4} = 0.62</math></p>	<p><math>(0.82 * 1 * 0.56 * 0.195)^{1/4} = 0.54</math></p>

# The Habitat Commitment Index

- **Background**

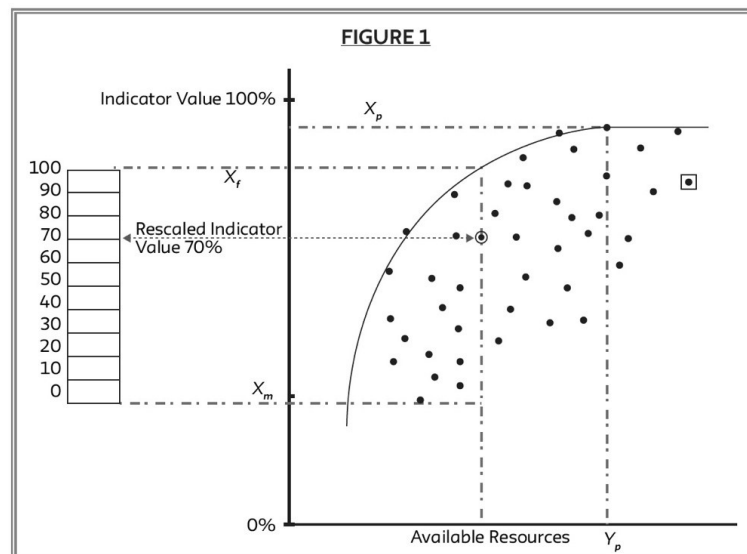
The Habitat Commitment Index (HCI) is modelled on the Social and Economic Rights Fulfilment (SERF) Index; a methodology developed by Professor Sakiko Fukuda-Parr, former Director of the UNDP Human Development Report Office (1995-2004). The HCI was developed by the Global Urban Futures Project (GUF) at the New School University to measure the fulfilment of commitments made by countries at the Habitat II Conference in 1996. The HCI is a composite score of indicators that are essential to urban well-being, weighted by local capacity. The methodology is unique because it assesses country performance not in absolute achievement levels but identifies the maximum possible achievement of a given indicator at every resource level. Available resources can be measured using GDP per capita, night-time light satellite images, public expenditure per capita, or local budgets, depending on the unit of analysis and data availability. The matching of achievements at given resource levels generates an Achievement Possibility Frontier (Figure A2).

In 2016, the HCI was used to assess the performance of 178 cities around the globe in fulfilling commitments made in the New Urban Agenda and the Sustainable Development Goals. As part of chapter 2 in this report, the city HCI methodology was applied to 30 major cities in Kazakhstan.

- **About the HCI**

The rationale for using this methodology is that it makes little sense to compare the performance indicators of Togo and Sweden, New York City and Kinshasa, or Astana and Stepnogorsk, as these places have drastically different institutional and economic capacities. Instead, it would be more sensible to compare cities that have similar local capacities, such as Stepnogorsk with Arys, which have significant differences in performance.

*Figure A2: The Achievement Possibility Frontier*












Using historical data from Kazakhstan from the past 17 years, the objective of the HCI is to predict the maximum level of achievement for 30 cities in Kazakhstan, considering their local capacity. The HCI scores rank from 0 to 100, with 100 not necessarily indicating a 100 per cent fulfilment of an indicator, but signifying the best possible performance in an indicator, according to the predicted maximum potential for a given economic resource level. In Kazakhstan, GDP per capita is not disaggregated by rural and urban, therefore, this report uses data from night-time lights satellite images (NLS) provided by the World Bank (2017) as a proxy for local capacity. NLS intensity has been found to be positively correlated with levels of economic activity as measured by GDP (World Bank, 2017).

## • HCI Indicators

The HCI for Kazakhstan is composed of 19 indicators, grouped in 9 dimensions, which relate to 10 of the 17 SDGs. As depicted in Table A3, these indicators were chosen through a matching process of those indicators that are essential to well-being, part of the 2030 Agenda and for which local data was available. Due to limited city-level data other indicators that are essential to urban well-being could not be included; for example, the Gini coefficient, which determines income inequality in Kazakhstan, is not disaggregated by rural and urban.

Table A3: Indicators used for the Habitat Commitment Index

	 BASIC SERVICES	 HOUSING	 WELL BEING	 ECONOMICS	 ENVIRONMENT	 GENDER EQUALITY	 EDUCATION	 NETWORK INFRASTRUCTURE	 URBAN FORM
DIMENSIONS	Water supply (%) (SDG 6, 11)	Housing investment per capita, tenge (SDG 11)	Infant Mortality (per 1000 live births) (SDG 1, 3)	Net migration (SDG 10)	PM 2,5 (SDG 11, 12)	Gender Pay Gap (SDG 5, 10)	Student-teacher ratio (SDG 4)	Number of enterprises w/Internet (SDG 9)	Population Density, persons per km2 (SDG 11)
INDICATORS	Sanitation (%) (SDG 6, 11)	Living space per person, m2 (SDG 11)		Income growth (%) (SDG 10)	PM 10 (SDG 11, 12)			Public transport trips per capita (SDG 9, 12)	Green space (% of total area) (SDG 11, 15)
	Investment in fixed assets per capita, tenge (SDG 6, 9, 11)			Retail trade per capita, tenge (SDG 8)	Waste generation per capita per year (SDG 11, 12)				
					Local budget expenditure on transport, tenge (SDG 12)				
RELATED SDGs	1, 6, 9, 11	11	1, 3	8, 10	10, 12, 13	5, 10	4	9, 12	11, 15

## • Steps to calculate the Habitat Commitment Index

The five steps in the calculation of the HCI scores are:

1. For each indicator, the relationship with local resources must be determined first. This can be done by plotting the indicator to the city's economic density (measured with World Bank NLS data), using the most recent data available.
2. If step 1 shows a relationship between the indicator and local capacity, the achievement possibility frontier is identified using visual inspection, with the requirement that the frontier includes observations from at least four cities.



3. Having taken notes on the maximum and the minimum values in the frontier, the frontier is calculated using econometric methods, considering multiple functional forms, such as linear, logarithmic, inverse, quadratic, power, growth, exponential, etc. The best-fit relationship is determined by statistical measures of goodness of fit (R2), and visual inspection of the shape. The function plateaus at a point where the frontier indicates economic resources are high enough that cities at that level and beyond are capable of full or near-full achievement of the indicator.
4. The indicator values (X) are rescaled as a percentage of achievement between the lowest level of achievement recorded by any city at any income (Xm), and the maximum possible level of achievement for the city's per capita GDP, as calculated by the Achievement Possibilities Frontier (Xf) (Figure 28).
5. If necessary, a penalty function is applied. This is the case when a city has very high levels of local economic capacity but little performance in a given indicator. A city with capacity far beyond what is needed for total fulfilment of an indicator should be held to a higher standard than cities at, or just above, the level of capacity required for maximum achievement. To reflect this in the HCI, scores are adjusted downwards as local capacity increases without achieving complete fulfilment of the indicator. The adjustment uses the following equation, with Y being the city's local capacity level, Yp being the capacity level at which the frontier levels out, S being the rescaled score, and β is fixed at 0.5.

$$A = 100 \left[ \left( \frac{5}{100} \right)^{(Y - Y_p)^\beta} \right]$$

The mathematical formulas for adjusting scores for cities with incomes above the full achievement point are made according to the following criteria:

- No Penalty on 100% fulfilment. For cities that have achieved total fulfilment of an indicator, there is no inappropriate penalty for continued capacity growth;
- Asymptotic Equality. The adjusted performance score approaches the observed indicator score as the value of the resource capacity indicator approaches Yp from above, ensuring there is no rapid drop in scores when a city's income reaches Yp;
- Increasing Penalty with Resource Capacity. The downward adjustment of scores increases as capacity grows beyond Yp. Two cities with sufficient capacity to fulfil an indicator and the same raw score will be scored differently according to the extent to which capacity exceeds Yp;
- Penalty Decreases with Rising Yp Values. Higher Yp values indicate lower feasible rates of transformation, and therefore a lower penalty;
- Penalty Declines with Increasing Achievement. As the adjusted scores approach 100, the penalty for failing to achieve total fulfilment becomes less severe.

#### • Data Sources

The HCI was calculated using data from official statistics, provided by Kazakhstan's Ministry of Economy Committee of Statistics. The only external data used was regarding economic density; this was provided by the World Bank.

### Box A1: An example – calculating the HCI Score in Access to Sanitation

Providing access to sanitation within a city requires large and continued capital investment. It is therefore of little surprise that cities with more local capacity and economic resources, such as Karaganda, have greater access to sanitation than Kentau or Kokshetau (Table A4). The sanitation frontier, which is 70 for Kentau and 99 for the other four cities included in the table, depicts the highest achievement in access to sanitation at the each of the cities' capacity level (Figure A3).

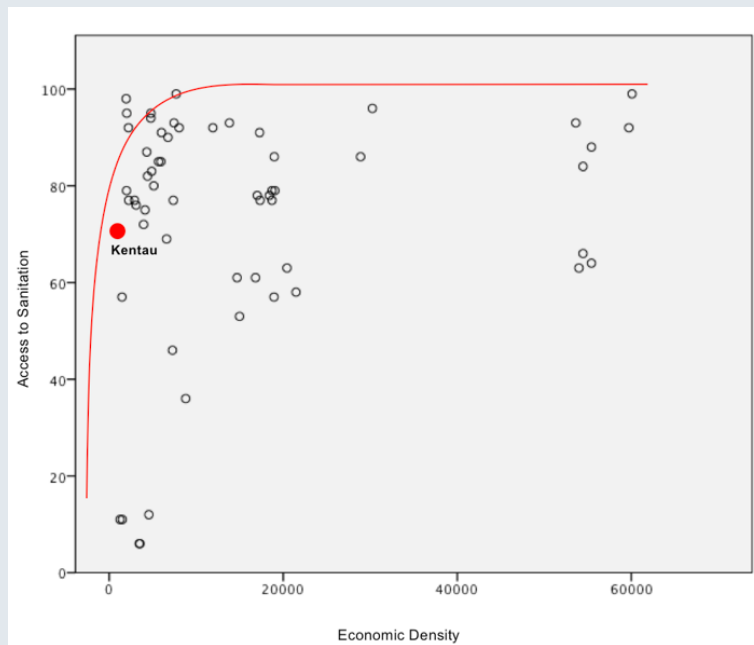
Kentau has one of the lowest capacity levels in Kazakhstan. Its sanitation HCI score is therefore adjusted upward, because Kentau is performing as well as it can, considering its low resources. As is highlighted in Figure A3, no other city at this capacity has reached higher sanitation levels. For this reason, Kentau has a sanitation HCI score of 100.

The case of Shymkent demonstrates the use of the penalty scoring. Despite relatively high local capacity, only 59% of the city has access to sanitation. Shymkent's score is therefore adjusted downward, reaching an HCI score of 37.

Table A4: Sanitation HCI scores in 5 cities

City	Sanitation (%) (official statistics)	Frontier	Local Capacity (Economic Density)	HCI Score
Kentau	71	70	936	100
Kokshetau	69	99	6,588	67
Aktobe	84	99	18,702	78
Shymkent	59	99	21,416	37
Karaganda	88	99	55,428	70

Figure A3: Sanitation: Achievement Possibility Frontier



## a) Habitat Commitment Index Dashboard

Habitat Commitment Index for Kazakhstan 2018: Final city ranking and sub-indexes per dimension

	Basic services	Housing	Well-being	Economics	Environment	Gender equality	Children and youth	Network infrastructure	Urban form	FINAL SCORE
Streptogorsk	100	52	85	58	78	86		96	14	71
Almaty	67	75	39	63	46	69	100	63	100	69
Kokshetau	68	64	71	57	77	85	67	64	65	69
Astana	79	100	45	60	42	54		100	51	66
Kentau	70	-16	61	36	97	100	100	69	68	65
Petropavlovsk	55	48	70	38	59	100	100	26	81	64
Taldykorgan	70	50	67	37	82	100	44	47	67	63
Lysakovsk	70	48	52	36	98	76		29	82	61
Aktobe	52	86	49	45	54	56	67	63	56	59
Shymkent	36	52	57	36	60	69		58	100	58
Taraz	33	21	62	35	70	77	27	68	100	55
Shakhtynsk	77	44	71	34	62	90		8	49	54
Arkalyk	72	31	59	27	65	100	100	26	0	54
Aksu	94	31	100	38	47	47		15	50	53
Arys'	38	52	82	36	96	78		37	2	53
Kyzylorda	71	64	48	48	60	63	70	32	15	52
Pavlodar	64	49	77	35	62	58	45	50	29	52
Turkestan	16	40	47	29	95	100	100	29	8	52
Kapchagay	71	68	78	47	39	74		30	4	51
Balkhash	63	49	84	38	45	71	100	10	2	51
Zhezkazgan	77	48	54	37	59	52	95	31	10	51
Kostanay	43	77	48	45	26	92	36	34	49	50
Rudnenskaya	72	39	78	31	69	37	32	18	60	49
Kazaraganda	47	48	47	61	34	26		75	46	48
Zhanaozen	73	50	80	3	66	37		13	61	48
Semypalatynsk	20	27	48	40	59	100	91	31	1	46
Aktau	64	34	59	41	52	23	53	41	41	45
Zyryanovsk	24	51	99	50	79	70		26	16	45
Saran'	26	42	99	20	53	100		0	15	45
Satpaev	80	41	96	40	33	22		13	10	42

## Semi-structured interviews with family members

### *Objective:*

The purpose of the semi-structured interviews with families was to describe qualitatively the well-being self-perceptions of an average family in three different Kazakhstani cities: Shymkent, Petropavlosk and Stepnogorsk. The data collected provided insight into the activities of citizens in the context in which they take place. It used questionnaire-based interviews, observation, and photography to narrate how regular citizens live in their city, how they perceive their daily life, and the effect of urban goods and services on their well-being.

### *Criteria for the selection of families:*

- Following the criteria suggested for the selection of cities, it was determined that families of different ethnic backgrounds be selected (Kazak, either more Turkic, or more Russian) to reflect the population diversity of Kazakhstan. The families actually interviewed were chosen by the respective Akimat;
- In terms of family size and age composition of the families, three generations (grandparents, parents, and children) in each family participated, regardless of whether they were part of the same household. Due to time constraints, at least one member of each generation was interviewed independently;
- In order to observe family activities and their urban context directly, the interviews were performed at the family's household;
- Most importantly the families interviewed opted voluntarily to participate in this project. In order to guarantee this, they were fully informed of the study's general purpose and methodology and signed corresponding consent and assent forms.

### *Details on the questionnaires:*

The questionnaires took up to one and a half hours per adult and 20 minutes per children, taking into account that interviews with interpreters are more time-consuming. As the interviews were performed at the family's household, time spent with them involved direct participant observation as well as a certain degree of shadowing (researchers joined the family for dinner, tea, and/or dombra playing).

The format of the interview varied slightly depending on the generation of the interviewee: parents were asked a more comprehensive set of questions, grandparents were asked about the changes they perceived during their lifetime, while children were asked only a few questions complemented with an age appropriate "draw-your-city" or "map-your-city" activity. The questionnaire had four sections: a time-use diary, a well-being section, a place satisfaction assessment, and an urban sustainability section.

### *1. Time-use diary section*

Closely following the Multinational Time Use Survey (MTUS) instrument, parents and grandparents were asked to review their daily activities the day before the interview, using the template designed by the Centre of Time Use Research at Oxford University, which was adapted for this HDR.

### *2. Well-being section*

The second section of the questionnaire was based on the indicators that compose the OECD Well-Being Index. Selected questions from the topics of housing, community, education, environment, civic engagement, health, life satisfaction, safety, and work-life balance, were reproduced. Questions about income and earnings were disregarded. By using these questions, some interesting comparisons could be made with the data from the 38 countries available in the Better Life Index. The purpose of this section was to reinforce the fact that urban well-being is not solely dependent on economic conditions but that other aspects have equal or even greater relevance in shaping human development.

### *3. Place satisfaction section*

The objective of this section was to briefly assess residents' place satisfaction by reflecting on the key elements that make a locality a desired place to live. Special emphasis was placed on daily routines and movements to and from places that ought to be visited regularly, in an effort to assess key aspects of the neighbourhood's liveability and walkability. Walkability indices give maximum points to places in which amenities and daily errands are within a five-minute walk (400 m). Conversely, they penalize those places that make a car or other means of transport necessary.

### *4. Green technologies section*

Most aspects related to urban sustainability were covered in the previous sections. The final part of the interview asked complementary aspects related to familiarity, access, and usage of green technologies.

### *5. Draw-your-city or map-your city (age dependent)*

Children and adults experience their city differently, and children's perceptions and opinions are often not taken into consideration. A summarized version of the interview (half a page) was designed for children, while a complementary activity was conducted. The researchers asked children to make a drawing (for small children) or a map (for older children) showing the places in the city they use the most: home, school, park, playground, sports, or recreation area. Follow-up questions were asked on their drawings, including: Which is your favourite place in the city? Which is your least favourite place? What would you add or change to your city to make it better?



# UNDP Kazakhstan NHDR 2018

## Questionnaire for Adult Family Members

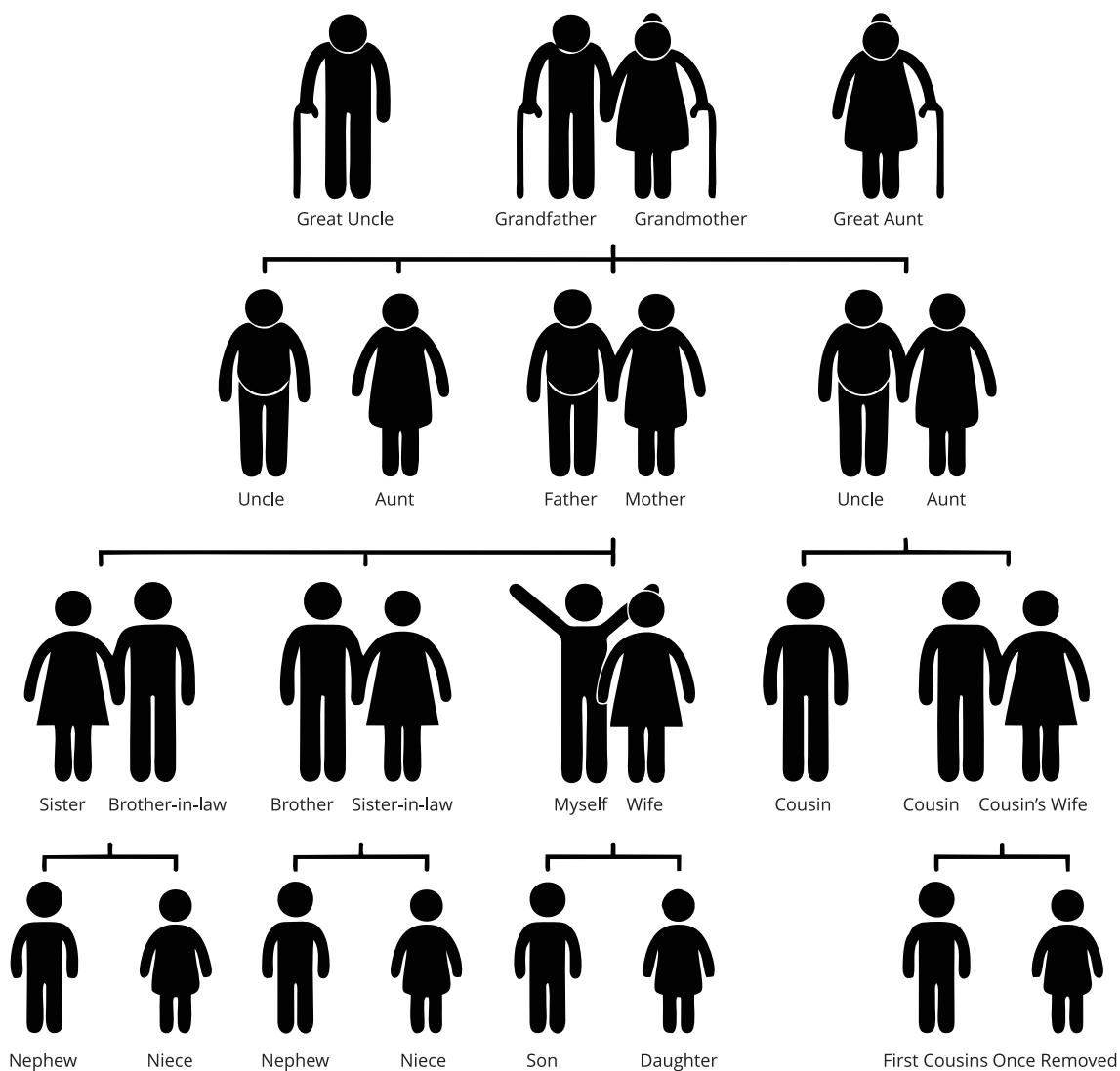
City:	Date:
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### 1. Introductory and job-related questions

1.1. What is your name and what should I call you throughout this interview?

Name:
Nickname:

1.2. Who are the members of your family, and how old are they? Does anyone have a disability?



1.3. What is your work or occupation?

Occupation:
Comments:

1.4. What is your partner's work or occupation?

Occupation:
Comments:

1.5. How did you choose this work? Did you wish you could have chosen differently?

Comments:
-----------

1.6. How long have you worked there? What did you do before?

Duration:	Previous work:
Comments:	

1.7. Are you satisfied with your job? Is it fulfilling?

Yes:	No:
Comments:	

1.8. Are the employee benefits good?

Yes:	No:
Comments:	

1.9. Is your household's income below or above the city's average?

Below average	On average	Above average
Comments:		

## 2. Well-being questions

2.1. How many people live in your household? How many rooms are there?

# of people:	# of rooms:
Comments:	

2.2. Is the tap water in your house drinkable?

Yes:	No:
Comments:	

2.3. Can you make temperature adjustments in every room?

Yes	No	In some areas
Comments:		

2.4. Do you feel safe walking home alone at night?

Yes	No	It depends
Comments:		

2.5. Do you believe you can rely on your neighbours in a time of need?

Yes	No	Not sure / some
Comments:		

2.6. Are you engaged in a community board? Any volunteer work? Any sports?

Community board	Yes	No
Comments:		
Volunteer work	Yes	No
Comments:		
Hobbies	Yes	No
Comments:		
Sports	Yes	No
Comments:		

2.7. What type of school did you attend? How old were you when you finished or graduated?

School type:	Graduation:
Comments:	

2.8. Would you say your health is good or very good?

Yes	No	Partially
Comments:		

2.9. How long is your working day (in hours)?

# of hours
Comments:

2.10. Do you own this house?

Yes	No	In the process
Comments:		

2.10.1. If not, then: Do you spend more than 20% of your income on rent or mortgage?

Yes:	No:
Comments:	

### 3. Time-use

3.1. Can you please describe your day during the week and the weekend?

	Hours	What were you doing?		Where were you?	Who was with you?						How much did you enjoy this time/location?
		Primary activity	Secondary activity	Location and mode of transport	Alone	Partner/spouse	Child 0-7	Coworkers	Friends	Other / Others	1 = not at all; 10 = very much
WEEKDAY	5:00 AM										
	6:00 AM										
	7:00 AM										
	8:00 AM										
	9:00 AM										
	10:00 AM										
	11:00 AM										
	12:00 PM										
	1:00 PM										
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	4:00 PM										
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	6:00 PM										
	7:00 AM										
8:00 AM											
9:00 AM											
10:00 AM											
11:00 AM											
WEEKEND	5:00 AM										
	6:00 AM										
	7:00 AM										
	8:00 AM										
	9:00 AM										
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	4:00 PM										
	5:00 PM										
	6:00 PM										
	7:00 AM										
8:00 AM											
9:00 AM											
10:00 AM											
11:00 AM											



#### 4. Place satisfaction

4.1. How satisfied are you with your house or apartment unit?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
How long have you lived here?
Why did you choose this place?
What do you wish was better?

4.2. How satisfied are you with your building?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
What do you wish was better?

4.3. How satisfied are you with your neighbourhood?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
What do you wish was better?
Is it well located?

4.4. How satisfied are you with your office or work space?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
What do you wish was better?

4.5. How satisfied are you with your or your local park or recreation area?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
What do you wish was better?

4.6. How satisfied are you with your or your children's school?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
What do you wish was better?

4.7. How satisfied are you with your or your local grocery or supermarket?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
What do you wish was better?

4.8. How satisfied are you with your or your local healthcare centre?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
What do you wish was better?

4.9. How satisfied are you with your or the public transport to and from your house?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
What do you wish was better?
Do you have a car? <input type="checkbox"/> Yes <input type="checkbox"/> No
Do other members of your family own a car?

4.10. How satisfied are you with the quality of your Internet connection?

Assess from 1 to 10 (1=not at all, 10=very much)
Why?
What do you wish was better?

## 5. Green technologies

5.1. Do you recycle or classify solid waste in your house?

Classify	Recycle
Which materials do you recycle?	
Are recycling bins easily accessible to you?	

5.2. Do you reuse water or collect rainwater in your house?

Reuse	Collection
Which type?	
Is the technology available in your house or building?	

5.3. Do you use energy-efficient lightbulbs?

Yes	No	
Are they affordable?	Yes	No

5.4. Do you use energy-efficient appliances?

Yes	No	
Are they accessible?	Yes	No

5.5. Do you use solar energy?

Yes	No
Comments:	

5.6. How well is your house insulated from 1 to 10? (1=poorly, 10=very good)

Heating ducts	
Flooring	
Window frames	
Window panes	
Roofing	
Comments:	

5.7. Do you grow any edible plants in your house or neighbourhood?

Yes	No
Comments:	

## Micronarratives as a method and practice in UNDP

Micronarratives is the method used whereby granular qualitative and quantitative data is collected, compiled and used to explain and interpret/understand the many complexities of the context and the environment in which we live. It is a method of distributed ethnography, a way to understand the behaviours and perceptions of people regarding complex problems. The micronarrative methodology encourages respondents to think about their experiences in a specific area or dimension of human development and come up with a short story. Afterwards, the respondent provides his/her view on several specific and atypical questions which prompt people to enhance their stories by providing their perspectives on various aspects of the problem focused on in their story.

UNDP has begun using micronarratives for several reasons. Statistical data alone is not enough when exploring or making sense of complex phenomena, like unemployment, skills mismatch, domestic violence, the future of education and skills and how the private sector understands their potential contribution to sustainable development goals, and so on. Micronarratives have proven to be a simple and rapid way of collecting complementary qualitative data that helps development practitioners to understand and unravel the complexities of these phenomena, enabling them to design pilot studies to tackle the problems that exist. UNDP recently launched the “How Is Life?” survey – a tool to collect perceptions regarding the quality of life in several key dimensions. The tool will help in the planning and design of development pilot programmes, monitor and evaluate progress under specific sustainable development goals, evaluate their impact or simply unravel the complexity. Collected micronarratives are usually analyzed using the SenseMaker open software that allows real-time analysis of the stories to be undertaken, and to plan/organize sessions with beneficiaries to interpret the stories. The Cognitive Edge (<https://cognitive-edge.com/about-us/>), a Singapore-based non-profit organization, is the core partner for UNDP in the design, testing and interpretation process.

## ENDNOTES

<sup>1</sup> The effect of cities on the environment can be measured by comparing a city's "Ecological Footprint" with its "biological capacity". The Ecological Footprint, measured in global hectares (gha), describes how much area of biologically productive land and water a city requires to produce all the resources it consumes and to absorb the waste it generates, using prevailing technology. Biological capacity, also measured in gha, is the area of productive land needed to produce the necessary resources or absorb carbon dioxide waste. While city-specific footprint measures are not yet available, national and global statistics are illuminating. The average bio-capacity per person in Kazakhstan (3.5 gha for 2014) is twice the world's average (1.7 global hectares), and Kazakhstan's environmental footprint per person (6.0 gha for 2014) is below the world's average 6.8 (NFA, 2018). This means Kazakhstan's bio-capacity balance is negative -2.5 gha for 2014. In terms of urbanization, the simple question is how much hinterland does a city need to sustain itself. Of course, a city is not capable of supporting its population within its administrative boundaries alone. Food production, waste disposal, energy generation, water provision, air pollution capture, and many other urban services demand resources provided by rural areas. In short, cities are not self-sufficient, but with the right set of policies and infrastructure choices, they can certainly strive to be more energy efficient, and even carbon neutral (or biologically balanced).

<sup>2</sup>

### Pros and cons of urbanization

Disadvantages	Benefits
<ul style="list-style-type: none"> <li>• Higher consumption levels of food, energy and goods, as incomes rise</li> <li>• Emissions are concentrated causing higher air pollution</li> <li>• Heat-island effect, which raises temperatures and traps pollutants</li> <li>• Higher precipitation levels, combined with more impervious surfaces, tend to cause more flooding</li> <li>• Increased congestion levels</li> <li>• Higher crime rates</li> <li>• Without proper planning, urban land consumption patterns can outpace urban population growth</li> </ul>	<ul style="list-style-type: none"> <li>• More access to energy-efficiency modes of consumption (due to institutional density and economies of scale)</li> <li>• Increased housing density (high-rise apartments versus single-family houses) reduces per capita ecological footprint associated with housing type and urban transportation by 40 per cent</li> <li>• Lower costs of urban service provision</li> <li>• Greater scope for recycling and reuse</li> <li>• Potential for economies of scale</li> <li>• Potential for energy co-generation</li> <li>• Potential for fuel consumption reduction from public transport, cycling and walking</li> <li>• Potential to reduce the per capita use of fossil fuel for space-heating</li> <li>• Potential to reduce losses from energy distribution</li> </ul>

Adapted from: (GFN, 2017), (Walker, 1995), (Mitlin and Satterwhite, 1994), and others.

<sup>3</sup> The administrative and territorial division of Kazakhstan is shown as at the beginning of 2018.

<sup>4</sup> To calculate the index, all indicators are put on a 0 to 1 scale. Four sub-indices, for health, knowledge, living standards, and the built environment are created. They are then added together and divided by 4 to yield the UA-HDI value.

<sup>5</sup> Two events are important to mention here. Between the 1940s and the 1980s, the Soviet Union conducted over 400 nuclear weapons tests in the vicinity of Semey, exposing about 200,000 Kazakhs to large doses of radiation. The health and environmental impact of these tests and the subsequent radiation exposure have become evident with increases in cancer rates and other related diseases. The second is the draining of the Aral Sea, during the 1960s, for irrigation projects. The destruction of the lake has left the lake bed and surrounding land polluted and the region economically depressed.

<sup>6</sup> The second education indicator used in the calculation of the HDI is school life expectancy, also referred to as “expected years of schooling”, or EYS. Due to Kazakhstan’s urban data limitations, it was not possible to calculate the EYS for the country’s urban areas. We therefore rely on MYS for the knowledge dimension of the UA-HDI.

<sup>7</sup> In Kazakhstan, primary education is from grades 1-4, lower secondary education from grades 5-9. When entering upper secondary education, students first pursue higher general secondary education from grades 10-11. After that, they can choose from three tracks (vocational schools, lycées or colleges). Graduates of all tracks are eligible to enter university. Higher education includes bachelor’s degrees (4 years), specialist degrees (5 years), master’s degrees (2 years), and doctoral degrees (5 years).

<sup>8</sup> The OECD (2015) identified significant differences in enrolment by geographical location, socio-economic background and gender. Kazakhstan also underinvests in education in comparison with other countries with similar income.

<sup>9</sup> This number refers to “net migration,” which accounts for both incoming and outgoing migration.

<sup>10</sup> The SERF methodology was created by the former director of the UNDP HDR Office and New School Professor Sakiko Fukuda-Parr et al. in Fulfilling Social and Economic Rights published by Oxford University Press in 2015.

<sup>11</sup> As data on GDP per capita is not available at the city level, night-time lights data is used as a proxy indicator for economic density. This data was provided by the World Bank, see: <http://documents.worldbank.org/curated/en/319131510892209158/pdf/AUS12288-REVISED-PUBLIC-ECABRIEFALLWEB.pdf>

<sup>12</sup> Cities are classified as large, medium and small. Small-sized cities: <200,000 people; medium-sized cities: 200,000-500,000 people, and large-scale cities: >500,000 people. This definition of city size was developed by the OECD. OECD (2017), Urban population by city size (indicator). doi: 10.1787/b4332f92-en (Accessed on 9 December 2017)



<sup>13</sup> The environmental Kuznets curve suggests that economic development initially leads to a deterioration in the environment but, after a certain level of economic growth, a society begins to improve its relationship with the environment and levels of environmental degradation decrease. From a very simplistic viewpoint, it can suggest that economic growth is good for the environment. However, critics argue there is no guarantee that economic growth will lead to an improved environment; in fact, the opposite is often the case. As a minimum, it requires very targeted policy and attitudes to make sure that economic growth is compatible with an improving environment.

<sup>14</sup> It is well recognized that urbanization has both positive and negative externalities. While the negative effects of urbanization might be more commonly recognized (increased pollution, crime rates, congestion), the positive externalities are equally potent. Hence, it is frequently stated that the battle for sustainable development will be won or lost in cities. Cities concentrate more than 50 per cent of the world’s population, generate more than 70 per cent of the world’s GDP, and are responsible for 70 per cent of the world’s emissions. The fact that cities simultaneously pose both disadvantages and benefits, signals a window of opportunity for urban planning and policy intervention to achieve sustainable development. Density holds the key to trigger what is known as the “urban sustainability multiplier”: “high density urban living significantly shrinks our per capita ecological footprints by reducing our energy and material needs. We may also find that through improved urban design, our cities can become more accessible and community-oriented places that are safer and healthier for their residents” (Rees and Wackernagel,1996).

<sup>15</sup> The authors thank William Thompson head of the OECD Eurasia Division for sharing the following summary table.

<b>Advantages and disadvantages of urban density</b>		
<i>Mobility</i>	<b>Potential advantages of high urban densities</b> <ul style="list-style-type: none"> <li>- Reduce fossil fuel emissions/carbon footprint by decreasing the total number of vehicle trips and the number of kilometres travelled per trip</li> <li>- Enhance accessibility, as people live closer to where they work, shop and play</li> <li>- Make transit more economically viable and efficient</li> <li>- Enable public health benefits from more walkable and bike-friendly environments</li> <li>- Create efficiencies in mixed-use developments through shared parking</li> </ul>	<b>Potential disadvantages of high urban densities</b> <ul style="list-style-type: none"> <li>- Exacerbate traffic congestion, parking problems; increased traffic accidents</li> <li>- Create pedestrian congestion and congestion in public transport</li> <li>- Compact, monocentric cities, may only have significant positive environmental effects when a greater share of commuters use mass transit</li> </ul>
<i>Land/ resource use</i>	<ul style="list-style-type: none"> <li>- Make better use of existing resources and infrastructure</li> <li>- Reduce development pressure on green spaces, agriculture and industrial land</li> <li>- Create a greater mix of land uses</li> </ul>	<ul style="list-style-type: none"> <li>- Limit recreational opportunities and reduce the availability of green/open space</li> <li>- Reduce an area’s capacity to absorb rainfall</li> <li>- Exacerbate pollution, possibly because of reduced area for trees/vegetation</li> </ul>

<i>Social equity</i>	<ul style="list-style-type: none"> <li>- Reduce segregation and social exclusion</li> <li>- Add diversity, safety, vitality, and opportunities for creative and social Interaction</li> <li>- Provide access to facilities (e.g., schools, employment, shops), without the need for a (costly) private vehicle</li> <li>- Reduce crime by increasing pedestrian activity and fostering a 24-hour community (more 'eyes on the street')</li> </ul>	<ul style="list-style-type: none"> <li>- Lead to loss of privacy and increased noise, nuisance, etc.</li> <li>- Reinforce social inequality and social segregation</li> <li>- Increase crime</li> <li>- Generate cramped living environments</li> </ul>
<i>Economic development</i>	<ul style="list-style-type: none"> <li>- Enable investments in community amenities as well as better quality and more attractive building materials</li> <li>- Promote a critical mass necessary to support local retail and service areas</li> </ul>	<ul style="list-style-type: none"> <li>- Additional cost to build and maintain high-density projects and city-centre infrastructure</li> <li>- Higher relative prices for land, housing, and many other goods and services</li> </ul>
<i>Environmental sustainability and energy</i>	<ul style="list-style-type: none"> <li>- Preserve green open spaces, clean air and water, fauna and flora systems (when higher-density development occurs elsewhere)</li> <li>- Facilitate innovative green design and district energy; reduce water and energy consumption</li> <li>- Facilitate the technological and economic viability of certain energy technologies and transport systems</li> </ul>	<ul style="list-style-type: none"> <li>- Higher energy consumption during the construction of high-density buildings</li> <li>- Limit some forms of ambient energy systems</li> <li>- Increased noise</li> </ul>

Source: Adapted from Boyko and Cooper (2011); Fundación Idea/Cámara de Senadores/SIMO Consulting (2014); Gagné et al. (2012).

<sup>16</sup> The human development categories have been adjusted in this report for Urban Adjusted HDI.

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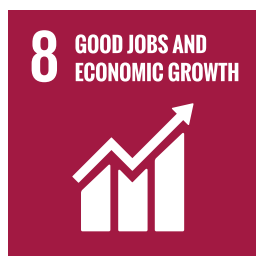
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# SUSTAINABLE DEVELOPMENT GOALS



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