

# HUMAN SETTLEMENTS

A FRAMING NOTE FOR THE HIGH LEVEL PANEL ON WATER

Prepared by the World Water Council



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This framing paper was prepared as an input to the High Level Panel on Water. The views and opinions expressed in this paper do not necessarily reflect the views of the High Level Panel or any of its members.

The World Water Council would like to thank all those who contributed to the preparation of this paper.

Published in December 2016 by the World Water Council

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## The challenge and its link to the SDGs

Over the past two decades, the world's cities have evolved to show that they can be spaces of economic might and a source of prosperity for their residents. They have also shown that they can have hugely detrimental impacts on the environment and become spaces of social inequity and poverty if not managed correctly.

During the Millennium Development Goal period, the urban population grew by 73% compared to 11% in rural areas. Two major trends have resulted from the rapid growth of cities, unplanned sprawl and increased spatial expansion, and both have negative consequences for urban water cycles. The overwhelming majority of new urban arrivals will not reside in megacities but in middle-sized or small urban centres (below 10 million inhabitants), with Africa set to experience the biggest swell in urban populations. This figure may further increase if the number of displaced people continues to rise as newly arrived migrants are more often than not drawn to cities.

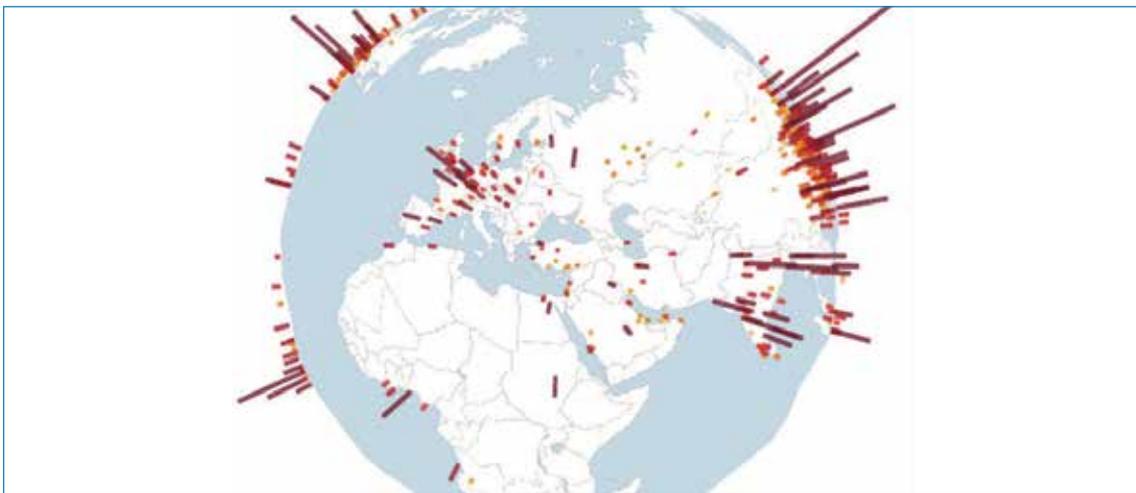


Figure 1: Predicted growth in cities 2015-2030 (McKinsey & Company)

If current trends continue, one billion new urban dwellers will push the total population of our global cities to 10 billion by 2050. This current shift in populations has resulted in new and amplified challenges not only in the cities where growth has been most prevalent, but also in surrounding rural and peri-urban areas and for the entire planet. In addition to growth, other trends such as rural to urban, fewer residents per house, climate change and shifting demographics are shaping our human settlements. Current shifts put further strain on the planet's limited resources, especially potable water, and service providers find themselves on the forefront of these changes.

As the 2016 World Cities Report highlights, '[w]hen urban services are lacking or are severely strained – as in large areas in many poor cities with large informal settlements – the basic productivity of all citizens will be compromised<sup>1</sup>. Where urban services are ensured, they can act as a catalyst for positive change, economic development, gender equity, health and help

1 Pg. 14, World Cities Report

create a culture of tolerance and peace. Well managed urbanization can help alleviate poverty and foster prosperity as seen in China over the past three decades, where 680 million people have been pulled out of extreme poverty and extreme poverty has been reduced from 84 (1980) to 10 per cent (2013)<sup>2</sup>. These gains have however been marred by negative effects on the environment, increased inequity in some cases, exclusion of vulnerable groups, and a wide range of other issues. The challenge now is to allow new and existing city residents to fulfil their full potential in a sustainable way for the planet and her resources in order to guide the global community towards a more sustainable path over the coming decades.

Cities worldwide have been facing the social and ecological shortcomings of an outdated urban water management model based on abundant resources, segmented system components, and disconnected from both urban planning and watersheds. With change comes opportunity and, in today's cities, the possibility to reap benefits from economies of scale and population density are stronger than ever. For basic services such as water and wastewater, the shifting landscape of our cities calls for a paradigm shift in how we plan and manage. Existing models of urban planning and management have, in some regions, increased inequalities between the rich and the poor, those in formal and informal settlements, with and without access and been harmful for the environment. The mismanagement of urbanization has resulted in 55 million new slum dwellers since 2000.<sup>3</sup> The ability to buck this trend and make urbanization an enabling reality must be achieved if we are to achieve a sustainable future.

Sustainability is based on three pillars, all of which must be addressed, and won, in our growing urban hubs in all parts of the world.

- **Environmental:** Cities have a greater impact on our environment than rural areas, producing more carbon dioxide and consuming more of the world's natural resources than rural areas. While cities can also sustain biodiversity, it is in reducing their negative impact on the surrounding areas where most progress can be made.
- **Social:** Through economies of scale and proximity, cities offer citizens increased possibilities to access basic services and lift themselves out of poverty. When managed well, social equity can be increased in our urban spaces.
- **Economic:** Urban spaces have become the main drivers of our economies and a source of wealth for residents and for connecting hinterlands and rural areas.

If managed well, prosperous cities in the global North and South will act as catalysts to all other areas of development as defined in the Sustainable Development Goals: from poverty eradication to health and well-being, education to energy, inequalities to climate action. Water is a cross-cutting and multi-dimensional aspect of all three pillars of sustainability and influences almost all goals identified in the SDGs. Water in cities is a precious asset and a multi-functional resource often connected to public space, wildlife habitats, transport routes, cultures, leisure and sources of energy, nutrients and diverse services.

Goal 11 of the SDGs aims to, 'make cities and human settlements inclusive, safe, resilient and sustainable'. Under this goal, target 11.5 makes specific reference to the need to reduce the number of people affected and losses from, among others, 'water-related disasters'. Recent studies, such as GWP's Urban Water Management paper, claim that the effects of climate change

<sup>2</sup> World Cities Report pg. 35

<sup>3</sup> UN-Habitat: <http://unhabitat.org/urban-themes/housing-slum-upgrading/>

will only intensify of the coming decades, 'Extreme weather events, from prolonged droughts to violent tropical storms, are poised to overwhelm urban water infrastructure and cause extreme suffering and environmental degradation.'<sup>4</sup> Furthermore, the biggest cities are to be found in coastal or low-lying areas that are more vulnerable to disasters such as flooding and tsunamis. Cities must therefore plan water systems that are resilient to the increasing shocks they experience and ensure that groups that are traditionally most exposed to such events, are protected.

The much called for goal on water was heard and in the approved SDG framework, goal 6 sets out to, 'Ensure availability and sustainable management of water and sanitation for all.'<sup>5</sup> This complex Goal is composed of 6 components, all of which call upon water stakeholders and actors to shift their way of understanding, planning, operationalizing, managing and delivering water services.

### 6.1 'achieve universal and equitable access to safe and affordable drinking water for all

Under the Millennium Development Goal Framework, more and more urban dwellers gained access to water and sanitation services. However progress was only keeping pace with urban growth and the modes for attaining increased access were often unsustainable. While gains in access to improved drinking water should be capitalized on, efforts should be furthered towards the full implementation of the Human Right to Water and Sanitation and sustainable drinking water. This is particularly pertinent in informal settlements and slums where access levels are low and service quality and sustainability are compromised and vulnerable groups that have been traditionally excluded. Utilities in all corners of the world are on the frontlines of these challenges and often do not have the capacity or resources to address challenges or plan for the future adequately. Furthermore, water operators, the majority of which are public, lack the political space to collectively voice their concerns and articulate their challenges. The lack of political voice filters down to inadequate resource allocation, a lack of capacity and policy gaps at operational level.

Although infrastructure is a persistent obstacle to service provision, it is becoming increasingly evident that ensuring service providers have the necessary capacity to deliver services and manage investment is equally as important. Well-trained operators are better equipped to react to unforeseen challenges and manage sustainable service systems in the long term. In this respect, capacity building through peer-to-peer support, technical exchanges and partnerships can build the resident capacity of utilities. Initiative such multi-stakeholder platforms can also ensure that operators have the support and visibility necessary to collectively voice their concerns and challenges and dialogue with other key actors in the water sector and beyond, including donors, governments and civil society.

4 GWP Urban Water Management

5. Sustainable Development Goals: <https://sustainabledevelopment.un.org/sdg6>

## 6.2 ‘achieve access to adequate and equitable sanitation and hygiene for all’

In the majority of the world, wastewater is released back in to the environment without treatment. Figures from the MDGs on access therefore mask a much bigger issues that has far graver consequences on the plant than when simply understood as a lack of latrines. Approaches to achieving adequate sanitation must therefore be understood in a cyclical manner in which waste is treated and, where possible, converted to resources. A break in the earlier stages of this chain reduce the possibility for treatment or reuse.

Universal and equitable access to improved and safely managed sanitation services is a common challenge for all stakeholders in the water sector: from operators to donors, city planners to customers. Following mitigated results from the MDGs, efforts in this sector must be increased otherwise it may jeopardize gains in all other areas of the SDGs, most notably drinking water, health and the environment. ‘Public health cannot be guaranteed without strong local leadership and adequate investments in sanitation infrastructure, services that have been long neglected. Innovative, context-specific and culturally-sensitive solutions exist and must be considered in the planning of a city-wide universal sanitation access strategy.’<sup>6</sup> In this sense, local governments must be empowered to tackle the sanitation gap and given the capacity to analysis their systems holistically and find innovative solutions that not only solve the ‘problem’ but also reap benefits for their communities.

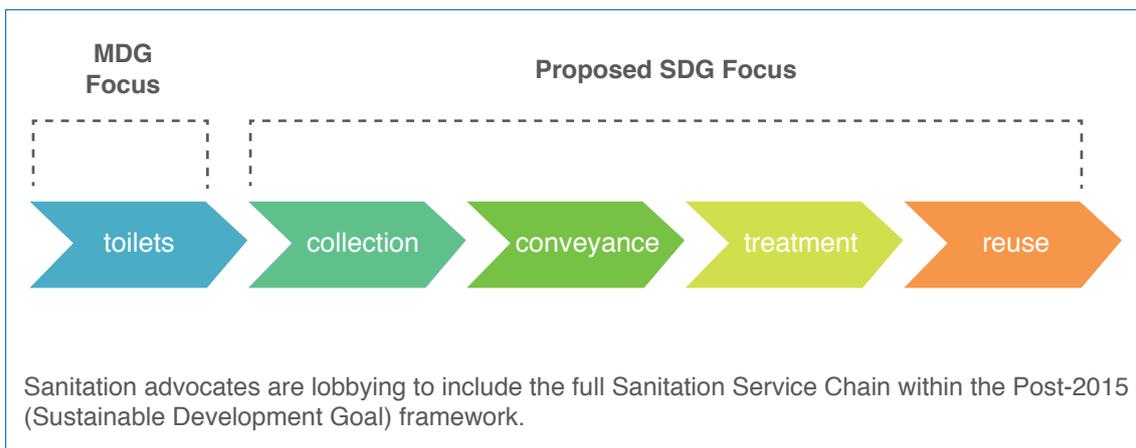


Figure 2: Shifting perspectives on sanitation from MDGs to SDGs (GWOPA/UN-Habitat)

6 Recommendations on Waters in the New Urban Agenda: <http://gwopa.org/en/gwopa-news/egm-urban-agenda>

### **6.3 ‘improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials’**

In the post-2015 era, waste must be seen as a resource to be exploited and not a challenge to be ignored. As highlighted by Integrated Urban Water Management approaches, water cycles must look to, ‘Reuse and use diverse sources of water with treatment that matches the use applying the “fit for purpose” water quality approach.’<sup>7</sup> Upcycling and energy recovery from waste must be explored and adaptation to local contexts can ensure that systems are sustainable long-term. In some regions, this means adapting existing systems to follow more integrated approaches, in other regions where no current system is in place, there is enormous potential to plan integrated systems taking into account the full sanitation loop and creating virtuous cycles. Overcoming the challenges to integrated approaches to water cycle management must be identified and overcome, these include: inflexible local or national legislations, lack of skills and tools to assess option, institutional structures, political will, among others.

The water-food-energy nexus should be central in our considerations and policies. Only by better understanding the interlinkages and promoting incentives that address all three, can water security be increased. Cross-cutting synergies will therefore be key to improving water quality and safeguarding resources.

### **6.4 ‘increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater’**

‘Water scarcity affects more than 40 percent of people around the world, an alarming figure that is projected to increase with the rise of global temperatures as a consequence of climate change’<sup>8</sup> Efficiently using the planet’s water resources will be essential if we are to avoid human catastrophe and resource depletion. In urban areas where populations are growing, consumer patterns must change towards a use that takes into account the renewal of water sources. Local actors should be given the mandate and appropriate resources to undertake this work for the long-term benefit of all.

To maximize resource efficiency, the full water cycle and all its uses must be taken into account, including: all aspects of domestic, industrial and agricultural use. A fairer distribution of resources must be addressed at all levels and involve all users and stakeholders, with particular focus on ensuring marginalized groups are not excluded. Heavy consuming industry and agriculture must be encouraged to find innovate and more efficient ways to use and reuse water.

7 IWA Principles for Water Wise Cities

8 UNDP: <http://www.undp.org/content/undp/en/home/sdgoverview/post-2015-development-agenda/goal-6.html>

## **6.5 ‘implement integrated water resources management at all levels, including through transboundary cooperation as appropriate’**

In a context characterized by, ‘Growing competition, conflicts, shortages, waste and degradation of water resources,’ it is essential to, ‘rethink conventional concepts – to shift from an approach that attempts to manage different aspects of urban water cycle in isolation to an integrated approach supported by all stakeholders.’<sup>9</sup> By promoting such an approach at all government levels and across all sectors, resources can be maximized and conflict can be evaded.

## **6.6 ‘protect and restore water-related ecosystems’**

Restoring water systems means not only reducing use but also ensuring that what is given back to nature will not damage or deteriorate natural environments and habitats. Industrial uses of water in cities must be regulated to avoid negative impacts down-stream that put ecosystems at risk. Promoting initiative that foster good practices in terms of habitat and natural space conservation and water protection will ensure that human settlements are also green spaces.

## **6.a-6.b ‘expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities’ and ‘Support and strengthen the participation of local communities in improving water and sanitation management’**

Recognizing the importance of capacity in the water sector and the knock-on effect for improved living conditions in human settlements is essential. Without the right capacity to provide quality and sustainable services, water utilities leave their communities in precarious situations. Well-performing water utilities can face challenges arising from climate change and urbanization with confidence and plan for the future, while ensuring quality basic services for their customers. Addressing the capacity gap involves a diverse range of approaches, among which, peer-to-peer exchanges hold great potential. Connecting service providers in the spirit of cooperation results in long-term support networks, trusting environments and tailored training for water providers and their staff. Cooperation between local governments that are responsible for water supply can furthermore allow good practice to be shared, adapted and scaled-up.

# The key interlinkages with other challenges that provide the greatest opportunities for impact

## Environment services

Cities are places of nature that stand to be protected. Adopting a holistic approach to the water cycle from source extraction to release can minimize the impact of cities on the surrounding environments.

## Water Quality, Sanitation and Health

Effective wastewater management in cities is a question of public health. Ensuring that duly treated water from human settlements and human activity is returned to the cycle safely is a key ingredient to ensuring water quality and health. Within cities, particularly in dense cities, sanitation can be localized to reduce the costs associated with treatment and recover the natural resources, while reducing the cost of transporting and benefitting from economies of scale.

## Resilient Economies

Water provision for human settlements generates employment in three areas: resource management; infrastructure-related work; and employment by water utilities or operators. Increasing populations in cities require more services and generate more employment in the sector.

Cities have become the economic drivers of our world and water is an essential element to industry in all its forms and sizes. Without water and wastewater services, urban employment and growth are not possible. The lack of capacity and the challenges facing the water sector calls for action to be taken to develop training material and innovative learning approaches to enhance the competencies of staff as well as to strengthen institutional capacity.

## Water infrastructure and investment

The provision of water and wastewater services incurs costs and requires investment for the maintenance and development the system. Costs must be reflected and, where possible, recovered through tariffs to maximize cost-recovery, plan for the future and create awareness of the value of this resource.

Local governments and other stakeholders committed in the Daegu-Gyeongbuk Water Action for Sustainable Cities and Regions, 'To use the tariff system to regulate water demand and encourage water conservation while ensuring the affordability of water and sanitation services for all'<sup>10</sup> Such an approach can incentivize domestic and industrial users to adopt water-wise consumer patterns and raise the necessary funds to maintain water systems.

10 Daegu-Gyeongbuk Water Action for Sustainable Cities and Regions

In most contexts, tariffs alone cannot compensate for years of infrastructure negligence or fund large-scale investment projects. The OECD estimates that around US\$ 6.7 trillion<sup>11</sup> is required for basic investment in water and waste infrastructure before 2050. Globally, operators and local governments struggle to incorporate such projects into local budgets and face low buy-in from communities. The cost of not investing will however be much greater as aging or absent infrastructure leads to immeasurable losses and potential health hazards for customers.

Multi-purpose infrastructure is necessary to assure the water supply and sanitation of human settlements, as well as the many other requirements of a thriving population as food security, energy security, industry needs. Sustainable investment must be attractive and from diverse and innovative sources.

11 <http://www.oecd.org/environment/financing-infrastructure-for-a-water-secure-world.htm>

## Brief overview of the current landscape in relation to the challenge – including the key actors and activities currently underway around the world

The New Urban Agenda will be adopted during the Habitat III Conference in Quito in October 2016, and will provide impetus to the agenda of human settlements and the provision of basic services in urban centres. The agenda must be forward-looking and action-oriented if it is to help realize the vision of *inclusive, safe, resilient and sustainable* cities aspired to in Sustainable Development Goal 11. The zero draft already includes a number of calls to action and recommendations that promote a 'holistic water cycle approach' and reiterate the role of capacity development and service providers in achieving sustainable water systems, while also giving specific attention to decision makers such as local governments.

In most parts of the world, local governments are responsible for ensuring basic services to their citizens. They will be on the forefront of many challenge related to the SDGs and in particular goals 6 and 11. As demand for basic services in cities increases, coupled with the adverse effects of climate change and resource scarcity, local authorities will require increased autonomy to manage and plan their spaces. Gathered in 2015 during the World Water Forum in Korea, representatives from local governments and their representative associations highlighted that, 'Managing water sustainably and achieving national and global policy goals while providing equal access to water and sanitation services to all and safeguarding water for ecosystems, all levels of a country's government – national, regional and local - need to closely coordinate their actions.'<sup>12</sup> The call for a collective effort from all levels of government must now be backed with policies and resources to make it a reality. Without the appropriate transfer of resources, the legal framework and mechanisms for capacity development, this cannot happen.

Whereas cities were previously seen as places where poverty was enhanced, donors are increasingly seeing the potential of cities to help the poor move out of poverty. If managed correctly, populations can flourish in cities by benefitting from growing economies and population density that makes basic services more affordable. Financial institutions and donors must therefore align their programmes to achieve the most substantial impact through the most efficient use of resources.

Citizens must also play an active role in constructing and realizing a forward-thinking water future in their cities. As users, stakeholders and, in many cases, owners of public services, they can push for progressive approaches to management and risk prevention. Calling on leaders to explore opportunities for more green, sustainable and equitable water management.

12 Daegu-Gyeongbuk Water Action for Sustainable Cities and Regions

# Most useful actions that need to be taken globally in the short, medium and long-term, and stakeholders which would need to be engaged in the process

## Establishing a new agenda

The New Urban Agenda should respond to the challenges and opportunities of urbanization, and address the unfinished business of the Millennium Development Goals. The NUA must be fully integrated with the SDG goals and also bring all levels of governance together towards common approaches. With a specific focus on urban realities, it should call on all actors in cities to work together to eliminate slums, including ensuring basic services for all residents as defined in the Human Right to Water and Sanitation.

The upcoming World Water Forum in Brazil will also be a key stage in global efforts towards sustainable development. The governance targets designed for the 6<sup>th</sup> World Water Forum will set the scene for the more urban focus of the 7<sup>th</sup> Forum and innovative practices in the domain of water cycle management stand to be shared. The outcome of this Forum should be concrete action by all actors in the urban water agenda based on well-defined guidelines and commitment.

## Working towards change

Empowering urban water sector actors with the skills to transition to more sustainable management models is critical. Fortunately, some cities around the world are not only putting this new urban water paradigm into practice but are inspiring and actively supporting other cities with their own shifts. In this regard, Water Operators Partnerships (WOPs), city twinning, technical exchanges and a wide range of other initiative must be scaled-up and mainstreamed in investment and/or development projects in the sector.

## SDGs and Resilient Cities

Given that they will accommodate the majority of the world's population, cities must play a greater role in achieving sustainable development. Greater involvement in global discussions and exchange on establishing realistic timeframes and actions. Local governments are best placed to articulate the needs of their citizens and their actions have the greatest impact on the ground. In this sense, empowered local governments and actors, including service providers, should be at the heart of the SDG process. In addition to providing housing, water and sanitation, education and a whole variety of basic services, local authorities must also ensure that their cities are resilient and prepared for the changing environment.

## Definition of success – how the world would be different if the issues were properly addressed

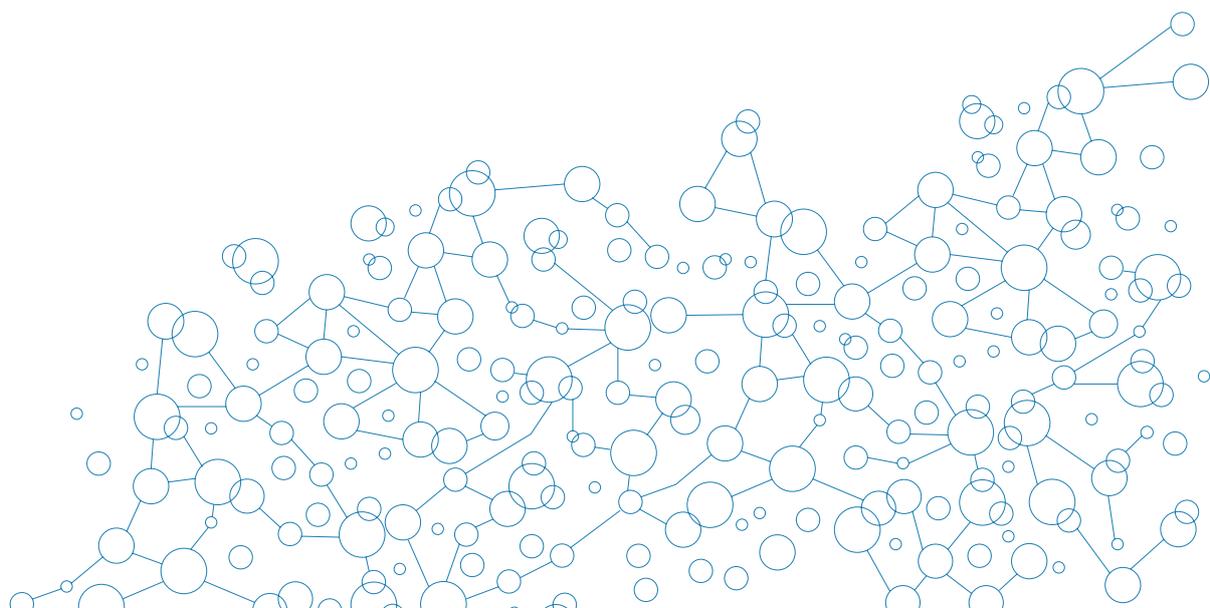
In cities of the future, water extraction will be limited and demand driven by the needs of water-wise inhabitants and green-conscious industry. The movement of water will be reduced and systems of reuse and recycle will be adopted and adapted where possible. Water will be fit-for-purpose and quality will be adapted to use. Waste is treated and put back into the cycle responsibly, taking into account the impact on green spaces, ecosystems and downstream habitats. Policies governing water management will be cross-cutting, ensuring the water-food-energy nexus is considered, hereby increasing security of resources. Cities will be prosperous places for their citizens and for the peri-urban areas or hinterlands that surround them, without compromising the environment. All inhabitants will have access to quality water and sanitation services at a price that is adapted to their use and means. Informal settlements and slums will have no place in the city of the future.

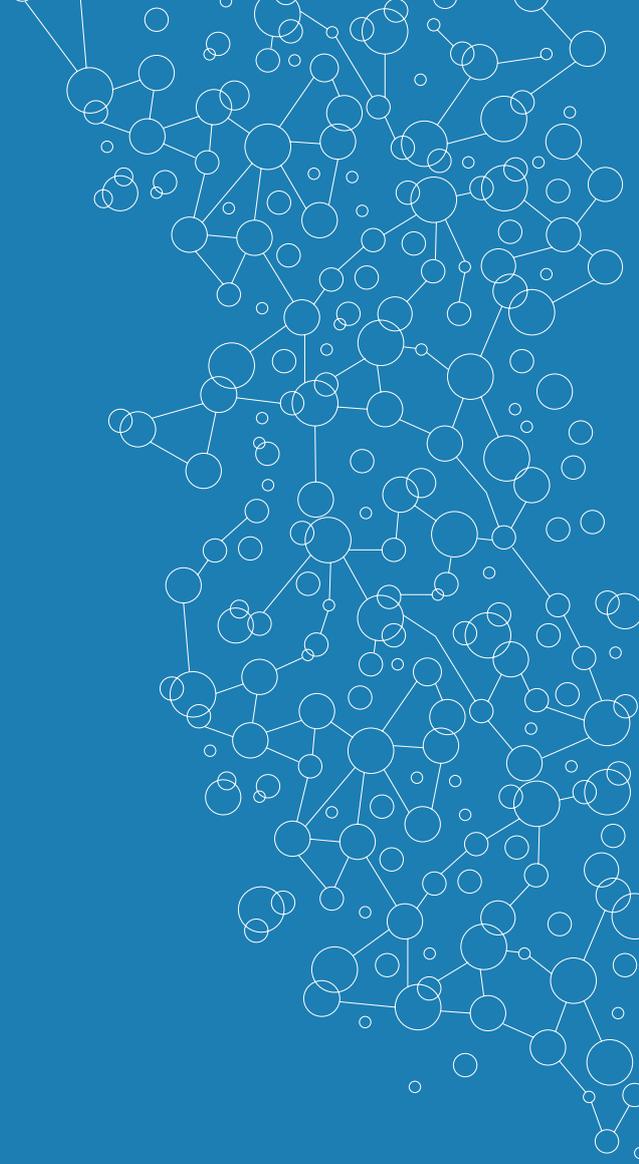
Through planning and preparedness, cities will be able to recover quickly from shocks and natural disasters, minimizing the impact on populations. City planning will promote dense urban hubs where economies of scale can be maximized and a holistic approaches to the organization of basic urban services will be adopted.

Water utilities will be empowered to provide quality solutions and plan for the future. Investment in infrastructure will be informed and accompanied by the necessary investment in soft skills and knowledge. Technological solutions will also be wise and demand driven, in tune with the local contexts and realities faced by operators. Local governments will have the legal, administrative and economic powers to ensure sustainable and inclusive water and sanitation services to their populations. Partnership and collaboration will be key pillars of development efforts in the water sector.

Truly shifting urban water paradigms will require not only advocating for new approaches but inspiring them by showing them what is desirable and possible. Cities and their public service providers around the world can learn from, and support, one another as they move towards a better urban future. In the cities of the future, basic services will be guaranteed to all and will create the enabling environment to lift populations out of poverty.

**Annex 1.** Recommendations on the New Urban Agenda (PDF)





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