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Area of Expertise: Making Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable for Individuals with Disabilities

Worldwide, more people live in urban than in rural areas, with 54% of the world's population residing in urban areas in 2014. By 2050, 66% of the world's population is projected to be urban. As of 2014, the most urbanized regions include Northern America (82%), Latin America and the Caribbean (80%), and Europe (73%). In contrast, Africa and Asia remain mostly rural, with 40% and 48 % of their respective populations living in urban areas. Although all regions are expected to urbanize further over the next decades, Africa and Asia are doing it faster than the other regions and are projected to become 56% and 64% urban, respectively, by 2050. Currently, among 3.9 billion urban dwellers, 550 million are persons with disabilities. By 2050, the proportion of the population living in urban areas is projected to be 57% in low-middle income countries and 48% in low income countries. Out of the 6.3 billion urban dweller population, 895 million (1 in 7 individuals) will be persons with disabilities.[1]

Making cities and human settlements accessible and inclusive for all people, in particular for persons with disabilities, is critical for sustainable urban development, as well as for the promotion of independent living and full and equal participation in society[2]. This accessibility and inclusiveness encloses the use of assistive technology or assistive products that can facilitate their participation. In the past decades, the world has experienced extraordinary urban growth, but considerable challenges, including growing numbers of slum dwellers, insufficient basic services and infrastructure, unplanned urban sprawl, and increased air pollution accompanied this rapid urbanization. All of these can make cities more vulnerable to disasters. Common urban challenges such as congestion, lack of funds to provide basic services, shortage of adequate housing and declining infrastructure can preclude continuous prosperity, making strategic urban planning and management essential to allow more inclusive, safe, resilient and sustainable urban spaces.

Urban planners are charged with ensuring urban development takes into account the needs of all population groups. Because urban development is generally unregulated, numerous barriers are faced and poor urban planning usually prevails and negatively impacts populations in need of improved accessibility. In addition, local and municipal governments in many areas of the world still lack the common sense of making accessibility of the built environment a priority. Accessibility is affected by technical and environmental barriers including, for example, the presence of steps at the entrances of buildings, the absence of lifts in multi-floor buildings, the quality and affordability of transportation options, transportation system connectivity, land use patterns, availability and use of assistive technology, and inaccessible timetable information and

[1] United Nations, Department of Economic and Social Affairs, Population Division (2014). *World Urbanization Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352).*

[2] Disability Inclusive and Accessible Urban Development Network, DIAUD. The Inclusion Imperative: Towards Disability-inclusive and Accessible Urban Development. 2016.

payment systems[3]. These are some of the major barriers faced by persons with disabilities.[4] These barriers can be significantly reduced when inclusive environments incorporate improved access to effective and timely assistive technology solutions to meet the needs of persons with disabilities.

Housing is a key component of inclusive urban development. Universal design principles should be incorporated from the outset in plans for new built environments and as much as possible in renovations to existing buildings and facilities to ensure accessibility for all. From the assistive technology perspective, two relevant examples of universal design include the use of braille on elevators' control panels and a hearing induction loop system for emergencies that allows people to speak with security through a microphone. Standards, laws and effective enforcement mechanisms are necessary to ensure accessibility, availability, affordability and quality of housing and public services for persons with disabilities. Transportation and public services not only provide accessibility for all, but drive sustainable and inclusive growth and change. Continuity of accessibility throughout all segments of a journey from the starting point to the final destination is important and should be supported by urban policies and plans that identify and fix accessibility gaps in public spaces or from one built environment to another. This includes affordability of accessible transportation and basic public services. Many national telecommunication authorities have universal service goals that recognize affordability and the right to access networks. Information and communication technologies (ICTs) play a key role in building inclusive and resilient smart cities. Accessible ICTs, including mobile applications, government websites, public kiosks and automated teller machines, should be part of accessible urban development plans. The rapid advances and innovations in ICT products and services often means that assistive products and technologies are not always compatible and the high cost of many such technologies limits access for persons with disabilities, particularly in low-income and middle-income countries (e.g. smart phones with apps allowing for accessibility e.g. vibrating alarm). Considerable emphasis continues to be placed on the role of assistive technology in enabling many people to properly access their cities including public transportation systems[5]. According to the World Health Organization (WHO) estimates are that more than one billion people would benefit from one or more assistive technology products. With populations aging and the prevalence of noncommunicable chronic diseases rising across the world, this number will rise above two million by 2050. Those who most need assistive technology include people with disability, older people, and other vulnerable populations such as people with noncommunicable chronic diseases, mental health conditions (e.g., dementia, autism), and steady functional decline.

Urban development agendas should, therefore, further the advancement of accessibility for all with respect to the right to adequate housing, the built environment, public spaces,

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[3] Roberts P, Babinard J. Transport strategy to improve accessibility in developing countries. New York: The World Bank, 2004.

[4] United Nations. Global Status Report on Disability and Development. *Prototype 2015.* New York, NY. 2015.

[5] Tebbutt E, Brodmann R, Borg J, MacLachan M, Khasnabis C, Hovarth R. Assistive products and the sustainable development goals (SDGs). Globalization and Health 2016; 12:79. DOI 10.1186/s12992-016-0220-6.

transportation, facilities and services, and information and communications technologies (ICTs). An effective urban development agenda cannot be achieved unless it responds to the needs and rights of everyone, including the estimated one billion people with disabilities, many of whom would not have access to assistive technology. Cities of opportunities for all represent the future we are all looking for.

International Legislations, SDG Goals/Targets and CRPD Articles

Numerous countries have in place legislation that addresses the rights of persons with disabilities. After the Convention on the Rights of Persons with Disabilities (2006), amendments and the development of new legislation, policies, and national disability plans were carried out by many countries. Various instruments regarding persons with disabilities support the current international policy framework aiming a disability-inclusive agenda for urban development. The World Program of Action concerning Disabled Persons (WPA) considers accessibility a key target area to advance full participation and equality for this population group[6]. The Standard Rules on the Equalization of Opportunity for Persons with Disabilities also identifies accessibility (Rule 5) of the physical environment and of information and communication as target areas to foster equal opportunities[7].

The Convention on the Rights of Persons with Disabilities (CRPD) and its Optional Protocol (A/RES/61/106) further strengthened the international normative framework for the advancement of the rights and socio-economic development of persons with disabilities. In its Article 9, the CRPD calls for State Parties to *"ensure to persons with disabilities access, on an equal basis with others, to the physical environment (…) and to other facilities and services open or provided to the public, both in urban and in rural areas.*" Recognizing accessibility as the enabler for persons with disabilities to live independently and participate fully in their communities, the CRPD emphasizes mainstreaming disability as an integral component of sustainable development strategies in many other key CRPD articles: Article 3 delineates accessibility a general principle and Article 4 makes it a general obligation of States Parties to actively promote accessibility in design and development as well as in new technologies, including ICTs; Article 9 also provides guidance for accessibility and reasonable accommodation; Article 19 addresses independent living and inclusion in the community; Article 20 refers to personal mobility; and, Article 21 emphasizes freedom of expression and access to information.[8] Numerous other CRPD Articles, however, include persons with disabilities and can be related to the Sustainable Developmental Goals (SDGs).

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[6] World Programme of Action concerning Disabled People (WPA), available at https://www.un.org/development/desa/disabilities/resources/world-programme-of-action-concerning-disabled-persons.html, accessed July 6, 2017.

[7] Standard Rules on the Equalization of Opportunity for Persons with Disabilities available at https://www.un.org/development/desa/disabilities/standard-rules-on-the-equalization-of-opportunities-for-persons-with-disabilities.html, accessed July 5, 2017.

[8] Convention on the Rights of Persons with Disabilities (CRPD), available at https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html, accessed July 1, 2017.

In 2011, the International Organization for Standardization (ISO) set international standards for the built environment, reflecting aspects of accessibility management in buildings in order to enable all persons regardless of disability to reach, enter, use and safely evacuate a building independently. Various countries produced legislation requiring accessibility to the physical environment.[9] Standards for information technology including requirements and recommendations for interoperability with assistive technology (ISO/IEC TR 13066-1:2011) were part of this set of international standards. In 2016, standards on the interoperability with assistive technology focused on services provided in the Microsoft Windows platform to enable assistive technologies to interact with other softwares. The intent is to allow software applications to enable accessible technologies on that platform (ISO/IEC TR 13066-2:2016). Standards on the classification and terminology of assistive products especially produced or generally available for persons with disabilities were updated and released in 2016 (ISO 9999:2016).

In 2013, the United Nations (UN) High-level Meeting on Disability and Development reasserted its commitment to advancing a disability-inclusive development agenda[10]. Its action-oriented Outcome Document called for additional actions to ensure accessibility by removing barriers to the physical environment, transportation, employment, education, health, services, information and assistive products, including in remote or rural areas. Ultimately, the goal is to achieve the fullest potential throughout the whole life cycle of persons with disabilities.[11]

Following, the 2030 Agenda for Sustainable Development reinforced the pledges of the international community to advance accessibility and the mainstreaming of disability. Its sustainable development goal (SDG) 11 "Make cities and human settlements inclusive, safe, resilient and sustainable," places disability and accessibility at the forefront of inclusive habitat and human settlements.[12] Targets 11.2 and 11.7 call, respectively, for accessible transport as well as green and public spaces, with attention to persons with diasabilities[1]. While the SDGs are not legally binding, governments are expected to take ownership and establish national frameworks for the achievement of these goals. Countries have the primary responsibility for following-up and reviewing progress made in implementing such agenda. Regional follow-up and review will be based on national-level analyses and contribute to follow-up and review at the global level. The aim of SDG 11 is to renew and plan cities and other human settlements in a way that fosters community cohesion and personal security while stimulating innovation and employment. The first progress report on the SDGs emphasizes the following findings related to

[9] ISO 21542:2011 standards.
[10] General Assembly Resolution A/RES/68/3, the United Nations.
[11] Ibid., A/RES/68/3. Also refer to
http://www.who.int/phi/implementation/assistive_technology/phi_gate/en/

[12] Transforming Our World: The 2030 Agenda for Sustainable Development. Available at https://sustainabledevelopment.un.org/content/documents/7891Transforming%20Our%20World.pdf , accessed July 3, 2017.

SDG 11. Quality, accessible and timely data collection continues to be of essence to monitor progress:[13]

- In 2014, 880 million people lived in urban slums, or 30% of the global urban population, compared to 39% in 2000.
- In many burgeoning cities around the world, populations are moving outwards, far beyond administrative boundaries.
- In 2014, about half the urban population globally was exposed to air pollution levels at least 2.5 times above the standard of safety set by the WHO.
- As of 2015, 142 countries were developing national-level urban policies; of these, 82 countries were already in progress of implementation and 23 had reached the monitoring and evaluation stage.

Both SDGs and CRPD Articles can be linked to facilitate partnerships, implementation of programs/policies and potential outcomes. In particular, the SDG 11 – "make cities and human settlements inclusive, safe, resilient and sustainable" – has numerous links to CRPD Articles related to disability and accessibility. The most important one is Article 9 on Accessibility: the environment and public transport must be accessible on an equal basis with others in both urban and rural areas. Others Articles more directly related to SDG 11 include: Article 32 – partnerships, inclusive international programs; Article 31 – collection of high quality, timely, reliable data; Article 28 - the right of persons to an adequate standard of living for themselves and their family, including adequate housing must be realized; Article 21 – access to information, use of ICTs; Article 20 - persons with disabilities must be afforded personal mobility in the manner and at the time of their choice and at affordable cost; Article 19 - living independently and being included in the community; Article 16 - safe cities and settlements; Article 11 – Risk and humanitarian emergencies; Article 4 - participatory planning and management must be respected; Articles 5 (Equality and non-discrimination), 7 (children with disabilities), 8 (awareness raising), 10 (right to life), and 12 (equal recognition before the law) may also apply.[14]

Urban Accessibility: Status and Trends

Estimates of urban populations and disability indicate that over half of all persons with disabilities worldwide currently live in towns and cities. By 2030, this number is expected to grow to between 750,000 and one billion. Disability prevalence, however, varies between urban and rural settings, with some countries showing higher or lower prevalence in urban areas. Data are limited on the barriers affecting persons with disabilities living in urban settings. Because of the lack of a standardized approach to collect data regarding this population group, data collected

[13] The Sustainable Development Goals Report 2016. Available at https://unstats.un.org/sdgs/report/2016/The%20Sustainable%20Development%20Goals%20Report%202016.pdf, accessed July 17, 2017.

[14] Global Disability Rights. Available at http://www.globaldisabilityrightsnow.org/infographics/link-between-sustainable-dvelopment-goals-and-crpd#text_link, accessed July 6, 2017.

by countries are not comparable. Nevertheless, a consistent gap across countries has been observed on school attendance by youth with and without disabilities. In addition, in certain less-resourced countries, such as in South African, persons with disabilities are more likely to suffer from the lack of access to assistive technology, including assistive products they need or use on a regular basis than to suffer from negative cultural/social attitudes towards them.[4]
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Assistive technology enables persons with impairments to access their cities and communities, including public transportation, and allows for better integration/participation in community activities. Only 1 in 10 individuals actually have access to assistive technology due to lack of financing, availability, awareness, trained personnel, and high costs[15]. For example:

- While 70 million people need a wheelchair, only 5 to 15% have access to one; proper access to wheelchairs increase opportunities to education and employment, and their use can reduce health care costs owing to a decrease in the risk for pressure sores and contractures.
- Hearing aid production meets only 10% of global need and 3% of the need in low-income countries; proper use of hearing can improve language skills and open opportunities for education and employment.
- Two hundred million persons with low vision do not have access to glasses or other low-vision devices.

The impact of assistive technology, however, goes far beyond the benefits of health and well-being to individual users and their families. It also has socioeconomic benefits, because it can reduce direct health and welfare costs (e.g., hospital admissions) and enable a more productive workforce and consequently result in economic growth.[4,5] As an example, the risk of falls and serious injury-related falls (which generally require hospitalization), can be significantly lowered by managing declines in intrinsic capacity such as reduced vision, hearing and mobility. A selected review of national and regional experience in the promotion and provision of accessible and usable products, services and environments indicates that a considerable and continuously expanding body of knowledge and extensive range of skills is available in some, especially high-income, countries. The challenge remains to promote widely the view that the provision of accessible and usable products, services and environments is an investment that benefits all and is reflected in value chains rather than to be viewed as social consumption for targeted populations.[16]

Another remaining issue surrounding accessibility is that it is often interpreted within the context of medical approaches (or the medical model). For example, women of all ages with disabilities often have difficulty physically accessing health services due to limitations with facility design and space, as well as a lack of adjustable medical equipment, or even accessible communication (e.g. person with a profound hearing impairment who cannot afford hearing aids). Accessibility in this sense is important for persons with disabilities. However, applying the medical approach to accessibility for persons with disabilities does not always ensure their full and equitable access to housing, transportation, social/recreational activities, health services, education, employment,

[15] World Health Organization. Improving access to assistive technology. Executive Board, 139th session. EB139/4. May 13, 2016.

[16] United Nations Report, 2013 accessibility_and_development_june2013.pdf.

and other forms of social participation. The medical model, however, continues to evolve toward a center-based approach, which allows integration of complimentary and alternative approaches to care. The medical care model is also absorbing important aspects of the social model of disability, which is directly linked to community living, care coordination, and integration of services and supports for persons with disabilities. Similarly, components of the capability approach in disability, which is the most comprehensive approach toward an inclusive life in society, tackle the issue of accessible environments such as transportation and affordable and accessible housing.[17] Therefore, the combination of relevant components of each of these disability models is important for the development of accessible environments and utilization of assistive technology to improve health and promote meaningful lives and enjoyment of the full economic growth and social benefits of communities worldwide.

National Policies/Programs to Implement SDGs and Related CRPD

As of May 2017, 149 countries were developing national-level urban policies. In 2015, 82 countries were already in the process of implementation and 23 had reached the monitoring and evaluation stage. The vast majority of these urban policies can further be aligned with SDGs and CRPD Articles, and can be disaggregated by key themes of the sustainability agenda. They are a way to connect national policy to local action.[18,19]

Innovations in municipal policy have promoted independence, individual choice, and improved integration and participation of persons with disabilities in society, but disability-inclusion policies still vary considerably across countries including between cities in the same country. These policy innovations take place, sometimes, in States undergoing administrative decentralization, under which greater responsibility is given to local governments to implement policies, test new ideas and formulate related policies in close partnership with local groups. As a result, accessibility of physical environments has improved or greater access to jobs for persons with disabilities living in urban areas has been observed.[4] For example, a successful partnership between Yerevan (Armenia) city architect with disability rights groups resulted in the identification, prioritization, and monitoring of the construction of hundreds of sloped curb cuts in the historic city center. Replications to address bus-stops and the provision of other municipal services were major outcome. [20]

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[17] Correa-de-Araujo, R. Women with disabilities and cities. Chapter 7 (pp.110-143), in Meleis AI, Birch EL, Watcher SM, eds. Women's Health and the World's Cities. 1st. ed. University of Pennsylvania Press. Philadelphia, Pennsylvania. 2010.

[18] United Nations Stats, available at https://unstats.un.org/sdgs/report/2016/goal-11/, accessed July 7, 2017.

[19] United Nations 2017 report Stats, available at https://unstats.un.org/sdgs/files/report/2017/secretary-general-sdg-report-2017--EN.pdf., accessed July 7, 2017.

[20] Pineda, 2010 Pineda, Victor Santiago. "Enabling Justice: Spatializing Disability in the Built Environment." *Critical Planning Journal* 15, no. Summer 2008: 111–23. and Pineda, Victor Santiago. "The Capability Model of Disability: Assessing the Success of the UAE Federal Law No. 29 of 2006." University of California Los Angeles, 2010.

Attachment 1 provides additional examples of successful projects/programs addressing accessible urban development and related best practices.

Despite implementation of policies and programs on inclusive urban development in some countries with successful outcomes by improving accessibility and fostering participation of persons with disabilities, at the global level, however, there is a lack of data to properly assess the barriers that urban residents with disabilities experience and how inclusive the cities where they live in are.

Results from a 2012/2013 survey carried out among 28 country-members of the Academic Network of European Disability revealed a variable picture of European accessibility. Despite general obligations of national law (e.g., non-discrimination law or disability law) and the commitment of the European Disability Strategy 2010-2020 to ensure accessibility to good, services and assistive technology for people with disabilities, much greater specificity of accessibility requirements is seen for some goods and services, with variations across countries. More readily available evidence of accessibility requirements with detailed technical specification relates to the built environment and public transportation than for ICTs, for example. Specific requirements are more likely to exist for services than for goods, for public sector than for private sector provision, and for those areas subject to existing European Union (EU) regulation or standardization. Technical standards are more likely to be voluntary than compulsory, or may refer loosely to international guidelines. This varied landscape is complicated by the existence of different accessibility specifications for similar products or services in different countries, which may affect purchases, sales or distribution across national EU borders. This fact has a tremendous impact on the provision of assistive technology. For example, concerns with the accessibility specifications of ATMs and self-service systems in e-government, transport ticket and information, and tourism revealed a greater impact on access to terminals (e.g., wheelchairs), information/communication features (e.g., speech, screen size) and compatibility with assistive devices. Machine designers, manufacturers, suppliers and purchasers are all affected due to different assistive technology requirements/legislations or policies across countries. [21]

In the United States, the Secondary Cities Initiative by the U.S. Department of State conducted in in public-private partnerships, is fostering innovative solutions to implement the SDGs. The State of Global Partnerships Report provides a snapshot of the type of public-private partnerships sustained and showcases how each partnership addresses at least one of the 17 SDGs. SDG 11 is linked to the Secondary Cities Initiative, in which small or mid-sized cities that serve as regional hubs for commerce, logistics, services, and governance participate. These cities experience unplanned and informal growth patterns and exhibit environmental security and sustainability issues because they are often data-poor, under-resourced and lag in infrastructure and essential services. The initiative builds international partnerships to enhance geospatial capacity and create data about Secondary Cities to enable local science-based decision-making,

[21] Academic Network of European Disability Experts (ANED). National accessibility and standards for products and services in the European single market: Overview and examples. January, 2013.

including building resilience against natural disasters/climate changes, and aiding urban planning and management of growth. Local partners build relationships in the field working with U.S. Embassies and local government officials, universities, and non-governmental organizations. Over 37 community engagement activities were held in the first six Secondary Cities projects to expand the role of geographic data in addressing local challenges (e.g. emergency preparedness, waste management, and water management) to improve access for all.[22]

Few countries have a policy or program on national assistive technology, a major target for both SDGs and CRPD Articles. In many countries, access to assistive products in the public sector is poor or non-existent, leading to high out-of-pocket payments that are a burden for users and their families. People from the poorer sectors of society are forced to rely on donations or charitable services – these often comprise delivery of large quantities of low-quality or used products, are often not appropriate for the user or the context, and lack mechanisms for repairs or follow-up. In many high-income countries, people can access assistive technology through health or welfare systems, although services are often stand-alone and fragmentary. A similar scenario is also common in emergency response programs, where the need for assistive products is high but often ignored. The assistive technology industry is currently limited and specialized, primarily serving high-income markets. There is a lack of state funding, user-centered research and development, systems of procurement, quality and safety standards, and context-appropriate product design. Trained health personnel are essential for the proper prescription, fitting, user training and follow-up of assistive products. Without these key steps, assistive products may be of no benefit or could even cause harm. Furthermore, technologies invented or adapted in developing countries are likely to be more suitable for use in other developing countries. [23]

The "Global Cooperation on Assistive Technology (GATE)" is a WHO initiative providing support to Member States in developing national assistive technology programs through initiation of dialogues on national policy and development of an assistive technology policy framework with best practice examples to support this process. The framework includes financing mechanisms (e.g. health and welfare insurance programs) to ensure the sustainability of service provision and universal access as well as guidance on the implementation of the priority assistive products list (APL), minimum standards, and appropriate training and service provision. A compilation of a priority assistive products list has already been completed, aiming to provide Member States with a model from which to develop a national priority assistive products list according to national need and available resources, modelled along the lines of the WHO Model List of Essential Medicines.[24]

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[22] U.S. Department of State. The Secondary Cities Initiative. Available at Website/URL: https://secondarycities.state.gov/, accessed July 7, 2017.

[23] Perspective of Scientists on Technology and the SDGs, available at https://sustainabledevelopment.un.org/content/documents/10789Chapter3_GSDR2016.pdf, accessed July 5, 2017.

[24] Global Cooperation on assistive technology (GATE), available at http://www.who.int/disabilities/technology/gate/en/, accessed July 7, 2017.

Many countries have guidelines and standards for creating accessible transport systems, covering the different parts of the system (e.g. built and outdoor environments, different public transportation systems and vehicles used, service and information). A review of 14 World Bank financed projects in the East Asia and Pacific region shows that accessibility is not yet a systematic concern in the planning or implementation of an urban transport infrastructure. Most of the projects included improvements in sidewalks and pedestrian crossings, with the potential to significantly transform the accessibility landscape of the city. Improvements included removal of obstacles from the sidewalks, creation of dropped cuts, ramps and tactile surface markings. The evaluation of these projects demonstrates that both clients and donors' knowledge requires further enhancement. Frequently, making urban transport accessible is seen as costly and not as important as many other development priorities. Literature, however, shows that no significant difference in cost exists between fully and not accessible streetscapes[3]. China demonstrated that a significant positive impact can be achieved by just incorporating accessible design principles into standards and guidelines, emphasizing the participation of people with disabilities in such a process. Moreover, good practices in bank projects in the region indicated that consultation with disability communities at the center of the infrastructure planning and implementation is highly beneficial[25].

UN Activities to Promote Achievement of These Goals

The UN remains committed to promoting accessibility, inclusion and advancement of persons with disabilities in society as part of its pursuit of fostering economic and social progress and human rights for all. In 2014, the first Secretariat-wide policy bulletin was issued on "Employment and accessibility for staff members with disabilities in the United Nations Secretariat" [26]. Progress has been made within the UN system organizations in establishing internal policies promoting accessibility and inclusive for all environments, facilities, and services[27].

Accessibility and disability inclusion in contexts of sustainable and inclusive development for all have been promoted by the UN Department of Economic and Social Affairs (DESA) and UN-Habitat. Experts group meetings have been organized to further discuss and provide recommendations on accessibility in built environments (Washington D.C., 2010) and on accessible ICTs, including in the situation of disasters and crises preparedness and responses (Tokyo, 2012). Forums to address accessible and disability-inclusive urban development (New York, June 14 and Nairobi, 28-30 October 2015) have been organized by member states, UN entities and other major stakeholders, DESA and UN-Habitat. As a result, analytical research and

[25] Babinard J, Wang W, Bennett CR, Mehndiratta S. Accessibility of urban transport for people with disabilities and limited mobility: Lessons from East Asia and the Pacific. Transport Notes, TRN-44, April 2012.
[26] Secretary-General's Special Envoy on Disability and Accessibility, 8th session of the Opening Working Group of the General Assembly on the Sustainable Development Goals, February, 2014.
[27] Secretary-General's Bulletin on Employment and accessibility for staff members with disabilities in the United Nations Secretariat (ST/SGB/2014/3).

guidance on accessibility and development have been published, considerably facilitating and supporting intergovernmental processes and bodies to advance accessibility.

The UN Third Conference on Housing and Sustainable Urban Development – Habitat III (Quito, Ecuador, 2016) was the first UN global summit on urbanization since the adoption of the 2030 Agenda for Sustainable Development. Habitat III offered a unique opportunity to discuss the important challenges of how cities, towns, and village can be planned and managed, in order to fulfill their role as drivers of sustainable development, and how they can shape the implementation of the SDGs. World leaders adopted the New Urban Agenda which sets global standards of achievement in sustainable urban development, rethinking the way people build, manage and live in cities through drawing together cooperation with committed partners, relevant stakeholders, and urban actors at all levels of government as well as the civil society and private sector. Numerous findings and policy approaches can help furthering the advancement of accessibility and disability inclusion in the contexts of the New Urban Agenda. It is important to highlight that achievement of a truly inclusive New Urban Agenda, where no one is left behind, requires a holistic and people-centered approach that informs, engages, and involves persons with disabilities and their organizations in all aspects of urban development, in particular in their access to adequate housing. The New Urban Agenda should further the advancement of accessibility for all with respect to the right to adequate housing, the built environment, public spaces, transportation, facilities and services, ICTs, and, in particular, the incorporation of assistive technology. A New Urban Agenda cannot be achieved unless it responds to the needs and rights of everyone, including the estimated one billion people with disabilities. The upcoming Habitat III and its New Urban Agenda have the potential to set the stage for future rapid urbanization to create an accessible, inclusive and enabling environment for all, including the world's over one billion persons with disabilities.[4]

Conclusion

While considerable progress has been made toward implementation of the SDGs and CRPD Articles related to accessibility and disability inclusion, work must continue toward strengthening the implementation strategies, invigorating global partnerships, and identifying and sharing lessons learned, as well as establishing best practices for sustainable development. This can be achieved by enhancing, for example, the use of ICTs (Article 21); establishing standards for, collecting and sharing high quality, timely and reliable data disaggregated by disability (Article 31); creating partnerships with disability advocacy organizations, and facilitating access to technology transfer (Articles 9 and 32). [28] Specific focus should be given to gathering data and monitoring the situation of persons with disabilities in urban settings and the barriers they experience including negative social attitudes; enhancing accessibility of services including access to assistive technology; continuing to pursue legal reforms to make urban settings more disability inclusive; mobilizing civil society to tackle complex factors and

[28] Global Disability Rights. Available at http://www.globaldisabilityrightsnow.org/infographics/link-between-sustainable-development-goals-and-crpd#text_link, accessed July 7, 2017.

persistent challenges. Like other urban issues, confronting accessibility will require assessing and responding to deficiencies in infrastructure management, municipal codes, land use, transportation planning, housing and community development, mobility and social services. Particular attention should be given to incorporation of effective assistive technology in national policies and programs to ensure persons with disabilities have increased access to assistive products and are able to live independently by carrying out their daily tasks and participating in society.

***Attachment* 1 - Supporting Evidence on Accessible Urban Development[29]**

Project	Purpose/Strategy	Key Outcomes	Selected Challenges and Lessons Learned	Potential Role of Assistive Technology
Accessibility Master Plan to Create a User-Friendly Built Environment Organization: Building and Construction Authority (BCA) Duration: 10 years Country: Singapore	Raise accessibility standards and driving adoption of Universal Design (UD) in built environment. Master plan is a holistic framework addressing accessibility and UD in built environment with multi-lever and multi-pronged approach to deal with accessibility concerns of the past, present, and future development through 4 strategic thrusts: • Removing existent barriers • Tackling future challenges upstream • Maintaining existent accessible features • Raising awareness and capabilities of the industry and stakeholders	Progressive, observable improvements in accessibility and wider application of UD principles in new and existing buildings undergoing alterations and additions. As of 2012, approximately 100% of government buildings were barrier-free (an increase from 50% in 2007) Over 90% of building along Orchard Road have at least basic accessibility (an increase from 41% in 2006)	Challenges: Lack of business case, land scarcity and high cost, need for higher platform levels to mitigate flash flood. Lessons learned: Creation of an inclusive environment requires collaboration/continuous engagement between public, and private sectors, as well as people with disabilities.	In this project/program, assistive devices could be nested within the built environment. For example, an environment built in with a level access shower entry and a built in propping ledge can eliminate the need for a shower stool and grabrails in a shower cubicle with a step present.

[29] United Nations. Good Practices of Accessible Urban Development. Making urban environments inclusive and fully accessible to ALL. UN department of Economic and Social Affairs. ST/ESA/364.

Inclusive Public Transportation Organization: Department of Transportation, Public Transportation Branch Duration: differs between operating municipalities Country: South Africa	Project aims included: effective in satisfying user needs; affordable; operating efficiently; reliable; of an acceptable standard; readily accessible; operated in conjunction with effective infrastructure provided at reasonable cost; safe; integrated between modes giving due consideration to users' need; effective in promoting integrated transport planning. Project was part of the 2007 Public Transport Strategy	Cape Town implemented MyCiTi, a high-quality bus-based transit system operating since 2009. 379 universally accessible buses; carrying 78,825 passengers per day (Feb 2015 data). As of March 2016, 37 interconnected routes, serving 42 stations and 366 stops. Agreement with the Rail Agency to integrate bus-rail services. Steady Expansion: Dec 2015, 1.4 million passenger journeys; Feb 2016, 1.7 million.	Challenges: Lack of understanding of complexity of universal access at outset of project, particularly related to vehicles and infrastructure. Lack of experience with implementation of universal access. Lack of understanding of teamwork/common goal. Lessons learned: Municipalities need access to training in running a new model for operating public transport. Private sector involved in project recognizes benefits of universally accessible transport system.	In this project/Program, integrating an accessible system of wayfinding across properties served by MyCiTi was extremely usefl.. Accessible maps and signs throughout the MyCiTi system could ensure consistency and facilitate travel plans for users. The use of automated ticketing and access system is another example of assistive technology highly desirable.

Madison Square Plaza Project Organization: New York City (NYC) Department of Transportation (DOT) Duration: one year Country: United States	Work with special interest groups such as PASS-Pedestrians for Accessible and Safe Streets (advocacy group for low vision and blind pedestrians), and other stakeholders to understand complications with the built plazas and identify actionable solutions (post restructuring street use and building plaza)	Intersections of all furniture were cleared. Detectible warning signs were added to crosswalks to enhance navigation. Granite blocks were strategically placed to help detect edges of the plaza. Planters and other street furniture were placed closer together to create consistent and clear boundaries within the plaza and prohibit permeability into active traffic.	Challenges: Identification of sustainable detectible materials that can be used to easily identify plaza's boundaries. Lack of national standards and guidelines for accessibility in outdoor spaces. Lessons learned: DOT learned the importance of actively seeking engagement of disability community. Quarterly meetings with PASS and other stakeholders are in place for continuous learning and input. DOT continues to work in close collaboration with the Mayor's Office for People with Disabilities.	This project/program is a good example of assistive technology use.
Accessibility, Civic Consciousness, Employment and Social Support for People with Disabilities Organization: UNDP with Ministry of Labor and Social Security	Widen social inclusion of people with disabilities by increasing public awareness and breaking stigma, improving mechanisms of implementation of national legislation on disability issues, promoting accessibility, and creating a system of	Legislation and policies – on measures of imposing fines to organizations for violation of the legislation on social protection of persons with disabilities, adopted	Challenges: Lack of national standards on accessibility and of information on accessibility in general for persons with different types of impairments. Lessons learned: The raising of awareness on disability	In this project/program, access to assistive technology and accessible environments are essential components of any strategy, intended to promote accessibility.

Duration: 3 years Country: Uzbekistan	social support in the employment of people with disabilities. Develop bylaws for the enforcement of existing legislation, enhance capacity of responsible agencies and establish effective monitoring of accessibility systems, as well as to raise awareness of accessibility norms among specialists and the general population.	January 5, 2011. Capacity building: 143 specialists from the State committee on Architecture and Construction and its regional branches improved their knowledge and skills on the provision of accessibility. Accessibility: Accessibility City Guides were developed and published in 2011, targeting persons with physical impairments. Twenty eight of 30 pilot public buildings are now fully accessible for wheelchair users. Over 70% of newly constructed buildings in cities Smarkand and Shakhrisabz	issues of specialists working in government agencies led to a sharp increase in the number of newly constructed accessible buildings. Presentations made by persons with disabilities on the impact of physical barriers on their lives helped change people's understanding of the issue.	Assistive technology and devices should be emphasized for their capacity to maximize performance in life's activities and consequent impact on health, wellbeing, and exercise of human rights.

		are also accessible.		
League of Accessible and Historical Cities Organization: European Foundation Center (Belgium) Duration: 5 years Countries: Italy, Denmark, France, Spain, Bulgaria	The League of Accessible and Historical Cities (LHAC) project implemented in six cities with the aims of: • Improving the accessibility of historical towns in Europe for all. • Being a replicable model, promoting the developme nt of responsible tourism and the protection of historical heritage ate a larger scale.	LHAC serves as an example for other cities willing to improve accessibility. A best practice guide has been published as a tool for actors and stakeholders in other historical cities – including foundations, public authorities, chambers of commerce, tourist managers, heritage associations, disability organizations and others interested in exploring and examining the possibility of establishing similar accessible routes.	Challenges: Lack of common European regulatory framework that defines accessibility standards. Lessons learned: This collaboration sparked another project founded by the European Commission to develop the Smart Tourist Routes for Inclusive Groups (STRING) Project	In this project/program, persons with disability would be able to fully enjoy leisure and cultural activities. Assistive technology could help them plan for their travel by identifying safe, accessible streets and touristic attractions, as well as accessible public transportation and facilities. For example, a handheld talking GPS-enable device can be used to announce names of streets, intersections, and landmarks and provide step-by-step travel instruction. In Germany and other places, an individual on a wheelchair can access Wheelmap.org (an iPhone app

				and website) to view a map of wheelchair accessible places (e.g., cafes, libraries).