General Assembly

Seventy-seventh session
Item 25 (b) of the preliminary list*
**Social development: social development, including questions
relating to the world social situation and to youth, ageing,
persons with disabilities and the family**

Follow-up to the International Year of Older Persons: Second World Assembly on Ageing

Report of the Secretary-General

Summary

      The present report is submitted pursuant to General Assembly resolution 76/138 on the follow-up to the Second World Assembly on Ageing. It provides an analysis of the impact of digital technologies on older persons and identifies the policy implications for older persons of the report of the Secretary-General entitled "Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation" (A/74/821). It also features selected work carried out by the United Nations system on ageing and older persons. The report concludes with key recommendations for consideration by the Assembly.

_____

* A/77/50.

Please recycle

I. Introduction[1]

1. The present report is submitted pursuant to General Assembly resolution 76/138 on the follow-up to the Second World Assembly on Ageing. It follows the previous report of the Secretary-General (A/76/156) on the same subject, which provided an analysis of the impact of the coronavirus disease (COVID-19) on older persons and served to explore pathways to ensure that older persons are better incorporated into efforts to recover from the COVID-19 pandemic in various policy areas.

2. In its resolution, the General Assembly called upon Member States and the international community to, inter alia, cooperate, support and participate in the global efforts towards an age-inclusive implementation of the 2030 Agenda for Sustainable Development. It also stressed the need to promote, among other things, information and communications technologies (ICT) and to ensure that these services are responsive to the rights and needs of older persons.

3. Section II of the present report sets the stage for the ensuing analysis, by providing an overview of the links between population ageing and digital technologies while addressing the digital divide experienced by many older persons. In order to illustrate the importance of ensuring that older persons are adequately integrated in technological advances, that section will highlight the potential of digital technologies for individual development, self-fulfilment and well-being in old age, while underlining existing challenges.

4. Section III will briefly present the road map for digital cooperation (A/74/821) and explore areas of relevance to older persons in that framework, with a focus on adequately integrating the preferences, needs and contributions of older persons into its implementation. The section provides insights on promoting inclusive digital economies and societies, improving digital capacity-building, protecting human rights and human agency in the context of digital technologies for older persons and safeguarding the interests of older persons in global digital cooperation.

5. Section IV features selected work carried out by the United Nations system on ageing. Section V sets out key recommendations for consideration by the General Assembly.

II. Digital technologies and global ageing

A. Recalling the connections

6. The Madrid International Plan of Action on Ageing, 2002[2] called for the recognition of new opportunities through advances in technology, including information technology, in the context of global interdependence and as key to the growth of the world economy and the development and improvement of living standards around the world.

7. Representatives of 158 Governments asserted in the Political Declaration adopted at the Second World Assembly on Ageing that unprecedented technological capacity has presented extraordinary opportunities to empower men and women to reach old age in better health and with more fully realized well-being; to seek the full

_____

[1] The content of Sections II and III is drawn from "Background Paper on Technologies and Older Persons", prepared by Ana Maria Carrillo Soubic, available at https://www.un.org/development/desa/ageing/wp-content/uploads/sites/24/2022/06/Technologies-and-older-persons-by-Ana-Maria-Carrillo-Soubic.pdf.

[2] Report of the Second World Assembly on Ageing, Madrid, 8–12 April 2002 (United Nations publication, Sales No. E.02.IV.4), chap. I, resolution 1, annex II.

inclusion and participation of older persons in societies; to enable older persons to contribute more effectively to their communities and to the development of their societies; and to steadily improve care and support for older persons as they need it.

8.   The Declaration states that when global ageing is embraced as an achievement, the reliance on human skills, experiences and resources of the higher age groups is naturally recognized as an asset. However, concerted action is required to transform such opportunities and improve the quality of life of men and women as they age. The Plan of Action provided policymakers with a set of technology-related recommendations, covering three main priority directions: older persons and development; advancing health and well-being into old age; and ensuring enabling and supportive environments (see figure I).

Figure I
Madrid International Plan of Action on Ageing recommendations related to technology, by priority direction

Priority direction I Older persons and development	**Priority direction II** Advancing health and well-being into old age	**Priority direction III** Ensuring enabling and supportive environments
Work and labour Employment opportunities • Promote access to technology **Rural development, migration and urbanization** Rural living conditions and infrastructure • Access to training for improved farming techniques and technologies **Knowledge, education and training** Equality of opportunity • Encourage and promote technological skills training and computer training for older persons with disabilities • Ensure benefits of new technology, including information and communication technologies, are available, taking into account the needs of older women • Develop and disseminate user-friendly information to assist in responding effectively to technological demands of everyday life • Encourage design of computer technology and print and audio materials to take into account changes in physical abilities and visual capacity of older persons Utilization of potential and expertise • Provide opportunities within educational programmes to exchange knowledge and experience between generations, including the use of new technologies	**Universal and equal access to health-care services** Elimination of inequalities and barriers • Utilize technologies such as telemedicine and distance learning to reduce geographical and logistical limitations in access to health care in rural areas **Older persons and disabilities** Maintenance of maximum functional capacity and promotion of full participation • Provision of assistive technologies • Promote accessibility and affordability, without discrimination, to medical technologies	**Housing and the living environment** Improvement in design to promote independent living • Promote employment of technology and rehabilitation services designed to support independent living

Source: Report of the Second World Assembly on Ageing, Madrid, 8–12 April 2002 (United Nations publication, Sales No. E.02.IV.4), chap. I, resolution 1, annex II.

9.   The COVID-19 pandemic has had a devastating impact on the implementation of the Sustainable Development Goals, with national and sub-national data showing that years, or even decades, of development progress have been halted or reversed.[3] The impact of global ageing on the socioeconomic development of societies, against the backdrop of interlinked global crises, engenders a need for urgent action to renew the social contract between Governments and their citizens and within societies, as called for in Our Common Agenda. Older persons must be full participants in that process and must also share in its benefits. That call, which aims to make a tangible difference in people's lives, was issued in a world where the digital transformation process is highly dynamic and complex, necessitating a public policy debate to ensure the implementation of institutional, policy and regulatory frameworks that are timely and capable of repurposing digitalization for advancing sustainable development[4] and addressing the barriers faced by older persons in accessing digital technologies, while ensuring that digital products, policies and practices comply with human rights standards and protections for older persons.

10.   Harnessing the potential of technology to focus on, inter alia, the individual, social and health implications of ageing is essential for reaping the benefits of the fourth industrial revolution, in particular in less developed countries. The digital technology megatrend, however, also interacts with existing global patterns of inequality. As the world becomes more digitally dependent, those who remain offline risk being excluded. Within countries, the digital divide determines which population groups will benefit from technological advances.[5] Available data point to age as a key factor influencing the digital divide (see figure II). According to the International Telecommunication Union (ITU), the official source for global ICT statistics, more than 90 per cent of young people in high-income countries with available data used the Internet, compared with less than half of people aged 75 years or over in most high-income countries with available data. The digital gap was significantly larger when comparing both age groups within available data in middle-income economies. When disaggregated by sex, the data shows a gender gap, with older men having higher rates of Internet use than older women across nearly all countries, regardless of the income level of the individual.
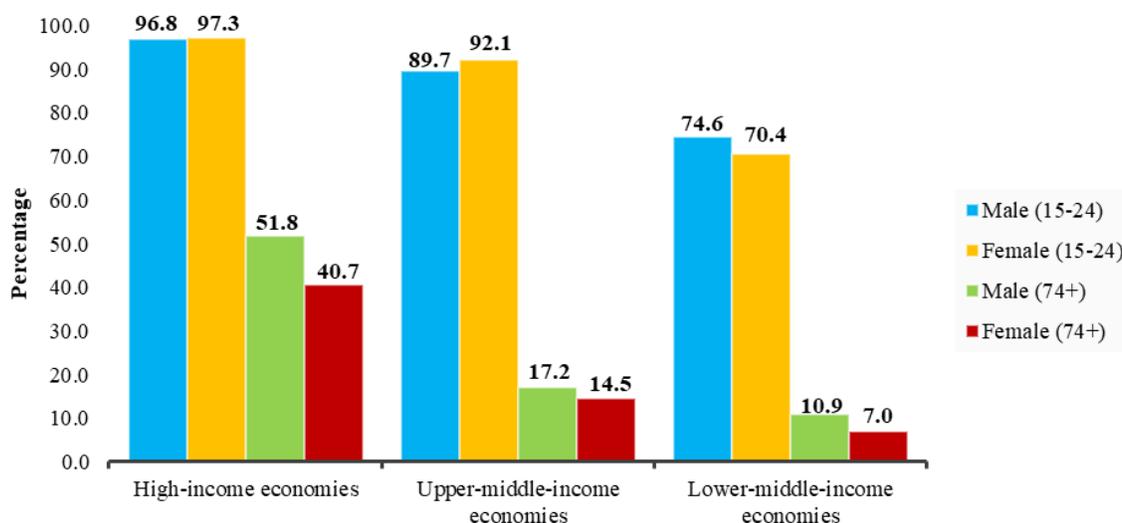
---

[3] Advance unedited version of the report of the Secretary-General on progress towards the Sustainable Development Goals, available at https://sustainabledevelopment.un.org/content/documents/29858SG_SDG_Progress_Report_2022.pdf.

[4] United Nations, Department of Economic and Social Affairs, "Sandboxing and experimenting digital technologies for sustainable development", policy brief No. 123 (December 2021).

[5] *Report of the UN Economist Network for the UN 75th Anniversary: Shaping the Trends of Our Time*, (United Nations publication, 2020).

Figure II
Youth and older persons using the Internet, by sex, in country classifications, by income group, 2021 (percentage)

Source: ITU database (2021). Available at https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.
Graph based on available data from 41 countries (13 lower-middle-income countries, 13 upper-middle-income countries and 15 high-income countries).

11.   Available figures on Internet use by older persons reflect extensive gaps in terms of data availability and comparability, with low-income countries continuing to lag. For instance, in 2021, data from the Pew Research Center show that 25 per cent of persons aged 65 years or over report never using the Internet, compared with a much smaller share (4 per cent) of adults aged 50 to 64 years.[6] The digital age gap is particularly significant for persons aged 75 years or over. Available data are limited to selected country or regional studies. According to findings from the 2019 Fundamental Rights Survey in the European Union, only one in five survey respondents aged 75 years or over at least occasionally engaged in Internet activities, compared with 98 per cent of those aged 16 to 29 years.[7] In Kazakhstan, in 2019, 95.8 per cent of persons aged 15 to 24 years used the Internet, in comparison with 10.8 per cent of persons aged 75 years or over. In 2018, in Ukraine, that difference was 84.7 per cent in Ukraine and in 2017, in Singapore, it was 84.6 per cent. New data from ITU show significant differences between countries and regions, as those percentages were significantly lower in Denmark, at 22.1 per cent in 2020, in the United Kingdom of Great Britain and Northern Ireland, at 27.3 per cent and in Oman, at 27.7 per cent.[8]

12.   It is important to note that ITU data also reveal strong global growth in Internet use, with the estimated number of people who have used the Internet surging to 4.9 billion in 2021 from an estimated 4.1 billion in 2019. The unusually sharp rise in the number of people online may be attributed to a COVID-19 connectivity boost driven by the sudden surge in digital demands. Many older persons have increased their Internet usage, although there are clear differences between regions and countries. According to Eurostat, the gap between age groups in terms of access to and use of modern ICT is trending in the right direction. Findings in the European Union show that the percentage of older persons aged between 65 and 74 years who

_____

[6] Pew Research Center, "Internet/Broadband Fact Sheet" (2021).
[7] ECE, "Ageing in the Digital Era", Policy Brief on Ageing No. 26 (July 2021).
[8] ITU, "Statistics". Available at: https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.

had never used a computer declined from 83 per cent in 2007 to 32 per cent in 2020. According to the Pew Research Center, Internet use among older persons aged 65 years or over in the United States of America has risen steadily over the last two decades, from 14 per cent in 2000 to 67 per cent in 2017[9] and 75 per cent in 2021.

13.   Nevertheless, in 2021, an estimated 37 per cent (2.9 billion) of the world's population reported not using the Internet. Several gaps emerge when considering divides in connectivity, including with respect to income, urban-rural location, gender, education level and age.[10] Age interacts with multiple factors including, inter alia, sex, location, income, disability and ethnicity as significant predictors of access to ICT and the Internet. That intersectionality can lead to multiple discrimination and exacerbate existing social inequalities. Lack of access to technology that promotes independence and other socioeconomic changes can marginalize older persons from the mainstream of development, taking away their purposeful economic and social roles and weakening their traditional sources of goods and services.

B.   Opportunities and challenges for older persons

14.   Rapid technological change is reshaping economies and societies. While a complete picture of the outcome of that technological revolution has yet to emerge, it is anticipated that the long-term changes will be far-reaching along all dimensions of development.[11] Digital technologies present economic and social opportunities as well as challenges for older persons. In order to ensure that older persons benefit from the window of opportunity offered by the new wave of technologies, the key features of such opportunities and challenges should be well understood.

15.   Digital technologies and artificial intelligence are transforming medicine, medical research and public health. Frontier technologies are exerting a transformative impact on health care, leading to better, cheaper and more innovative services and medicines and to improved health outcomes. For example, with the latest advancements in smart home technology, some older persons are achieving a comfortable, independent and safe life in their own homes. Technologies are improving access and delivery to medicines, whether through the development of medication applications or pill dispensers that ensure that older persons adhere to medication schedules or through advances in the manufacture of pills involving three-dimensional printing.[12] ICT has been fundamental in the effective management of non-communicable diseases. For instance, many Asia-Pacific countries use ICT tools, such as telemonitoring, mobile health and electronic health records, to promote self-management of non-communicable diseases by older persons or to facilitate management of such diseases at the primary care level.[13] Assistive and therapeutic rehabilitation robots have the potential to improve the quality of life and function of older persons. Leveraging robotic technology can help accelerate disease detection and prevention and bridge health-care gaps for older persons, especially those experiencing motor and cognitive impairment.[14] The potential of assistive technology

---

[9] Monica Anderson and Andrew Perrin, "Tech adoption climbs among older adults", Pew Research Center, 17 May 2017.

[10] ITU, *Global Connectivity Report* (2022).

[11] United Nations Conference on Trade and Development, *Technology and Innovation Report 2021: Catching technological waves, Innovation with equity* (Geneva, 2021).

[12] Department of Economic and Social Affairs, *World Economic and Social Survey 2018: Frontier technologies for sustainable development* (E/2018/50/Rev.1) (New York, 2018).

[13] ESCAP, "Enhancing the Role of Information and Communication Technologies in Health Care for Older Persons in Asia and the Pacific", Policy Brief No. 2021/03 (2021).

[14] World Summit on the Information Society Forum, Global Coalition on Ageing, session 256, "Tech Solutions for Age-Related Diseases" (4 May 2022).

extends to support for caregivers, from better matching of caregivers to patients to alerting caregivers when an older person falls. [15]

16.   Digital technologies can empower older persons to assume control of their own health and their care and support services and to better understand their evolving needs. In order to achieve that, it is crucial to ensure privacy and autonomy, the protection of human rights, the promotion of the interests of older persons and the fostering of transparency and accountability. [16] Diversity and inclusion considerations for older persons are also crucial when investing in infrastructure for digital technologies, to ensure that no one is left behind. The World Health Organization (WHO) issued a global strategy on digital health (2020–2025) to strengthen health systems through the application of digital health technologies for consumers, health professionals, health-care providers and industry towards the achievement of health for all. [17]

17.   Understanding the nexus between mobility, ICT and older persons is central for the provision of affordable, accessible and acceptable technologies to support well-being in older age. ICT is pervasive within public transportation environments, as it is used with the aim of delivering better management, greater safety and increased flexibility. [18] However, the transportation needs and preferences of older persons are not homogeneous; they can be affected by factors including, inter alia, age, sex, income, household size and composition and driver's license possession policies. [19] Technologies provide an array of on-demand platforms that offer more options to older persons, including real-time transportation information, bookings and payments. Initiatives, such as the people-centred smart cities flagship programme of the United Nations Human Settlements Programme (UN-Habitat), that aim at empowering local governments to take a multi-stakeholder approach to digital transformation that realizes sustainability, inclusivity, prosperity and human rights for the benefit of people, should anticipate the needs and preferences of older persons. That may include the use of digital technologies such as text-to-speech, computer vision, smart homes and smart wheelchairs, that adapt to the changing needs and capabilities of older persons.

18.   New digital technologies mean new products and services, including new digital financial systems. While older persons as a group represent nearly 80 per cent of the global informal economy, many have no access to formal financial services. According to the World Bank, 60 per cent of older persons in low- and middle-income economies have a bank account. Whereas mobile technologies have opened the door for a growing number of people in developing countries to access digital financial services, older persons have been slower to adopt mobile money, even in economies where mobile money penetration is high. For instance, mobile money usage by older persons is low in Bolivia, Chile, Haiti, Malaysia, Mexico, Thailand and Turkey. [20] Inadequate levels of knowledge and technical capacity, as well as the lack of financial products and services that are tailored to the range of needs and preferences of older persons, are some of the leading causes of the digital financial exclusion of that group. Against that backdrop, financial exploitation remains a key form of elder abuse. According to the American Association of Retired Persons, older persons in the United States of America continue to bear the heaviest costs of online crime, with men and women aged 50 years or over reporting more than $1.8 billion in losses from cybercrime in

---

[15] Catherine Shu, "We need to pay more attention to 'age-tech'", TechCrunch (30 December 2021).

[16] WHO, *Ethics and Governance of Artificial Intelligence for Health: WHO Guidance* (Geneva, 2021).

[17] WHO, *Global strategy on digital health 2020–2025* (Geneva, 2021).

[18] Kate Pangbourne, "Mobility and Ageing: A Review of Interactions Between Transport and Technology from the Perspective of Older People" in *Geographies of Transport and Ageing* (Palgrave Macmillan, 2018).

[19] Dong Lin and Jianqiang Cui, "Transport and Mobility Needs for an Ageing Society from a Policy Perspective: Review and Implications", in *Environmental Research and Public Health*, vol. 18, no. 22 (2021).

[20] World Bank and the Better Than Cash Alliance, "The Role of Digital Financial Inclusion in Preparing for Older Age and Retirement" (July 2019).

2020.[21] Appropriate measures are needed to ensure that effective legislation and policies are put in place for the identification, investigation and redress of digital financial exploitation.

19. Where adequately employed, digital technologies can enable older workers to extend their working lives by enabling them to better adapt to the labour market by increasing flexibility, facilitating remote work and creating new ways to achieve lifelong learning (see A/75/218). In 2021, for instance, the Government of India launched the Senior Able Citizens for Re-Employment in Dignity programme, an online portal that assists older persons seeking employment by posting their professional profiles and interests and by providing online training and virtual meetings.[22] In order to foster a culture that supports lifelong learning, Singapore launched the SkillsFuture programme,[23] which provides citizens of all ages with an integrated system of education and training that responds to constantly evolving needs. According to the report of the United Nations High Commissioner for Human Rights (A/HRC/49/70), however, significant gaps exist in areas such as the right to lifelong learning for older persons, the impact of technological developments and digital deficits and access by older persons to information technology. Those gaps have a particular impact on the effective coverage of the human rights of older persons.

20. Digital agriculture, by which farmers make use of digital technologies to access customized and actionable agricultural information, can improve the livelihoods of communities and the lives of farmers and agricultural workers.[24] Rural populations around the world are ageing. Available data suggests that rapid rural population ageing, characterized by an increase in the proportion of farmers over 55, is observed in southern Africa and Southeast Asia. In addition, in low- and middle-income countries, agriculture is the most important source of employment for older persons.[25] Ensuring that older persons can effectively access and use digital agriculture tools would therefore have a positive impact both on the farming and agriculture sector and on older persons themselves.

21. The application of digital technologies to meet the needs of older persons and ageing societies provides plentiful economic and business opportunities with an estimated market value of $17 trillion, according to the Global Coalition on Aging. The "silver economy", defined as the sum of all economic activity geared to serve the needs of older persons, has grown in recent years and is expected to continue that upward trend. For instance, according to research, the expenditure by Americans aged 50 and over on goods and services will grow from $7.6 trillion in 2018 to $27.5 trillion by 2050.[26]

22. While the digital age opens new frontiers of human welfare, knowledge and exploration, advances in new technologies must not be used to deepen inequalities, exacerbate existing discrimination or undermine human rights (see A/HRC/48/31). It is also important that older persons are provided with the choice of remaining offline.

---

[21] Katherine Skiba, "How Cybercriminals Stole $1.8 Billion from Unsuspecting Older Americans in 2020", American Association of Retired Persons, 12 April 2021.

[22] Information available at https://sacred.dosje.gov.in/.

[23] Information available at https://www.skillsfuture.gov.sg/AboutSkillsFuture.

[24] World Economic Forum, "Grow back better? Here's how digital agriculture could revolutionize rural communities affected by COVID-19", 9 July 2020.

[25] HelpAge International, "The ageing of rural populations: evidence on older farmers in low- and middle-income countries" (2014).

[26] ITU, *Ageing in a digital world: from vulnerable to valuable* (Geneva, 2021).

The participation of older persons in assessing their own needs and preferences with respect to public service delivery is crucial even in times of increasing digitalization. [27]

III. Policy implications of the road map for digital cooperation for older persons

23. In 2020, the report of the Secretary-General entitled "Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation" was issued. That document responded to and built upon the report of the 2018 High-level Panel on Digital Cooperation, [28] with the aim of advancing proposals to strengthen cooperation in the digital space among relevant stakeholders. The following year, the High-level Panel completed its deliberations and submitted its final report, entitled "The age of digital interdependence", which included five broad sets of recommendations on how the international community can work together to optimize the use of digital technologies and mitigate its potential risks. The present section seeks to situate older persons within recommendations A, B, C and E of the road map.

A. Inclusive digital economy and society

24. Increasingly, digital technologies are the medium through which individuals are able to carry out their day-to-day activities, access basic services and fully participate in public life and in their communities. Examples are found in all areas of life and such trends have been accelerated by the recent COVID-19 pandemic and COVID-19-related public health measures. For instance, the use of technological tools in the labour market is becoming ubiquitous and digital skills are often a requirement for employment. In areas as diverse as education, personal finance, public services and political participation, services are migrating online. In emergencies, where humanitarian actors increasingly rely on digital technologies in their responses, digital exclusion can hinder the ability of people to gain access to relevant information about their rights, entitlements and services, which amplifies their exclusion and can even put their lives at risk (see A/74/170).

25. Accordingly, ensuring digital inclusion for all has far-reaching consequences for the ability of people to live full lives and for the realization of the promise of leaving no one behind. The building blocks of an inclusive digital economy and society comprise digital infrastructure and connectivity, affordability and accessibility, which include digital literacy and appropriation, accessible ICT and the existence of adequate policies, regulations, standards, guidelines and good practices.

26. Infrastructure and connectivity are preconditions for achieving technological and digital inclusion. Populations in countries or regions without adequate infrastructure or that lack access to mobile broadband networks or the latest technologies are not able to fully benefit from the opportunities provided by the digital revolution. Inadequate connectivity curtails access to broadband applications for education, health, long-term care, independent living, finance and other critical sectors for older persons. Even where basic infrastructure and connectivity are in place, many individuals and households are considered "marginally connected",

---

[27] Heidrun Mollenkopf, "The Digital Divide". Available at https://www.un.org/development/desa/ageing/wp-content/uploads/sites/24/2021/02/Heidrun-Mollenkopf_paper.pdf. Paper presented at the expert group meeting of the Department of Economic and Social Affairs entitled "Building forward better for older persons post-COVID-19" (2–5 March 2021).

[28] Available at https://www.un.org/en/pdfs/DigitalCooperation-report-for%20web.pdf.

owing to limited levels of connectivity.[29] While people of all ages experience the drawbacks of a lack of infrastructure and inadequate connectivity, social groups can be affected in different ways and experience more challenges as a result, especially individuals, such as older persons, who suffer from intersectional discrimination.

27.   According to available data, 95 per cent of the global population now lives within range of a mobile broadband network. However, important blind spots remain. People living in rural areas, especially in less developed countries, are less connected, with the share of Internet users in urban areas twice as high as in rural areas. In rural areas of the least developed countries, the population is four times less likely to use the Internet than their urban counterparts. In Africa, approximately 30 per cent of the rural population still lacks mobile broadband coverage.[30] The urban-rural digital divide can especially affect older residents in countries where rural and remote areas experience more pronounced population ageing. For instance, in the Economic Commission for Europe (ECE) region, one in four people of all ages live in rural areas and one in three aged 65 and over.[31] Closing the urban-rural gap can therefore help bridge the digital age divide in countries with an increase in the proportion of older persons living in rural areas.

28.   Affordability of access and equipment is another important barrier for older persons, especially for those whose situation is, as a consequence of intersecting discriminations, more vulnerable than that of other segments of the population. Although globally, the share of income spent on telecommunication and Internet services has shown a steady decline in recent years, their costs increased in 2021 owing to the economic turmoil that followed the onset of the COVID-19 pandemic. At the same time, the pandemic has highlighted the fundamental role these digital technologies increasingly play in societies and thus the importance of making services affordable for all.

29.   The costs of digital technologies can vary substantially. In 2021, the gap in affordability impacted low- and middle-income economies the most, with consumers in such countries typically paying five to six times more for ICT services than do consumers from high-income countries.[32] For many older persons, particularly older women and older persons with disabilities who are more likely than younger people and older men to be poor, the high cost of technologies, Internet services and equipment, compounded by other barriers, can result in digital exclusion.

30.   Ensuring accessibility to digital technologies, whereby devices, digital products and services are designed to meet the needs and abilities of as many people as possible, is also crucial to achieve the digital inclusion of older persons. Physical and cognitive impairments in old age, such as impaired vision or hearing or dementia, can restrict older persons from harnessing the potential of technologies and hinder their ability to access basic services. On the one hand, designers of digital technologies need to meet the criteria for universal accessibility and inclusivity, and on the other hand they should intentionally tailor their products to the specific circumstances of older persons, without failing to consider the inherent heterogeneity of this age group. To encourage universal accessibility, policymakers should establish systematic mechanisms that ensure the development and availability of accessible ICT, including the adoption of policies, regulations and standards.

31.   Age-friendly digital technologies require that stakeholders go beyond guaranteeing adequate accessibility and inclusivity criteria and make technologies

_____

[29] Broadband Commission for Sustainable Development, *The State of Broadband: People-Centred Approaches for Universal Broadband* (Geneva, 2021).
[30] ITU, "Measuring digital development: Facts and figures 2021" (Geneva, 2021).
[31] ECE, "Older Persons in rural and remote areas", Policy Brief on Ageing No. 18 (March 2017).
[32] ITU, "The affordability of ICT services 2021", Policy Brief (2022).

truly relevant for older persons. Even technologies targeted to older persons can often be influenced by ageist stereotypes about old age and/or disabilities and therefore fail to address the needs and true interests of older users. In fact, ageist stereotypes may explain the disproportionate number of products for older persons that focus on health and care needs, as opposed to education, work or leisure. [33] Making digital technologies relevant for this group demands that stakeholders adequately involve older persons in the design, testing and validation of their products, using strategies such as co-design, co-creation, participatory design and other approaches. This effort will not solely benefit older persons: an age-inclusive digital society will benefit society at large by enabling older persons to better contribute to their communities and by providing countless business opportunities for the technology sector, especially as the share of the population aged 65 years or over continues to increase.

B. Digital capacity-building

32.   The road map for digital cooperation notes that global needs in digital capacity-building are substantial. It identifies some of the main challenges to unlocking the full potential of technologies, including insufficient investment, the need to make digital capacity-building exercises needs-based as opposed to supply-driven and the importance of tailoring literacy skills programmes to national and individual circumstances. For current generations of older persons who experienced the digital revolution at an older age, a lack of confidence and digital skills is among the main barriers they face in the adoption and use of digital technologies.

33.   Data from the European Union show that in 2019, 55 per cent of people aged 45 to 54 had basic or above basic overall digital skills, with the percentage falling to 40 per cent in the 55 to 64 age group and to 24 per cent among those aged 65 to 74. Variables co-existing with old age, such as gender, disability and low economic status, increase the likelihood of lower digital skills. In the same region, data on the use of e-government services show a large gap with respect to the engagement of older persons, depending on their levels of formal education: only 16 per cent of older individuals with low levels of formal education used the Internet to obtain information from public authorities as compared with 62 per cent of older persons with levels of formal education. [34]

34.   Research in the United States confirms these findings, showing that where age intersects with other characteristics, including income level, ethnicity or race and gender, gaps in digital skills are larger. Data in the context of digital skills among older workers show that not only do older workers have lower levels of digital skills than their younger counterparts, but that variation by subgroup is substantial. Among workers aged 50 or over, white Americans are the group that is most likely to be digitally literate (18 per cent) and black Americans the least (3 per cent). Furthermore, the earnings of older workers with higher digital skills are significantly higher, illustrating the impact of socioeconomic status. [35]

35.   The ability to use technologies for one's own purposes, employing new and creative ways to accomplish one's needs, termed "appropriation of digital technologies", demands digital skills and literacy. Digital literacy for older persons should include basic technology and computer literacy skills, as well as the development of creative abilities applicable to the digital sphere. Capacity-building programmes should target the specific needs of older persons, while taking into

---

[33] WHO, "Ageism in artificial intelligence for health", WHO Policy Brief (2022).
[34] ECE, "Ageing in the Digital Era".
[35] Ian Hecker and others, "Digital Skills and Older Workers: Supporting Success in Training and Employment in a Digital World", Urban Institute (September 2021).

consideration the inherent heterogeneity of this group, the diversity of their physical and cognitive abilities and of social factors that can impact the success of such programmes, such as income, race, ethnicity, disability and gender. A nuanced understanding of the individual's level of digital literacy is required, as some older persons are narrow users, feeling comfortable using digital tools such as video calls to engage with their families but lacking enough confidence or digital skills to manage their finances online or access other services, for example.[36]

36. Lessons learned from available evidence on better practices should be adequately incorporated into the development of capacity-building programmes on digital skills. For instance, studies have suggested that older persons with strong social and family support in the use of technologies show higher motivation to learn and to significantly increase Internet use. Participation in activities with families, peer learning programmes and confidence-building initiatives have also proven effective. Measures to raise awareness among older persons of available support for capacity-building in their communities is also needed in order to ensure that opportunities actually reach them. Remote support in digital skills programmes can also provide an opportunity for older persons, including those with mobility issues, to improve their digital capacities.[37]

C. Human rights and human agency

37. Rapid technological advances can outpace the ability of the international human rights framework to address possible protection gaps. Digital technologies can enable individuals to better exercise their human rights but they can also inadvertently deepen existing discrimination and inequalities among people in vulnerable situations or be used to violate or erode a person's human rights.[38] In that context, the road map for international cooperation highlights the need to ensure that technology products, policies, practices and terms of service comply with human rights principles and standards. The impact of digital technologies on the human rights of older persons can be substantial, especially in the use of technologies to access basic services.

38. To the extent that public and private services such as education, health, employment, finances or e-governance are increasingly online, the realization of human rights might partly rest upon the capacity of individuals to have adequate access to digital platforms. For instance, older persons with no or inadequate digital literacy might not be able to access the lifelong learning opportunities that are key to pursuing and maintaining their careers, which could potentially result in challenges to their right to education and their right to work, as well as those rights that relate to economic security. That reality was laid bare during the COVID-19 pandemic, where the lack of access to digital technologies, be it for reasons related to infrastructure, affordability, digital skills, design or other reasons, resulted in inadequate access to life-saving information and services. The lack of access also severely affected the physical and mental well-being of many older persons.

39. Migration to the digital space can also negatively impact the realization of the human rights of older persons who cannot or do not wish to engage with the digital world. High-quality non-digital options and offline access to goods and services should be guaranteed on an equal basis, especially in the case of basic services such as health, education and participation in political life. A human rights approach should

---

[36] Age UK, "Digital inclusion and older people: how have things changed in a Covid-19 world?", Briefing Paper (March 2021).

[37] Centre for Ageing Better, "Covid-19 and the digital divide: supporting digital inclusion and skills during the pandemic and beyond" (July 2021).

[38] See A/74/821.

therefore enable older persons to choose, in an autonomous way, whether or not to use digital technologies. Furthermore, the use of digital technologies should never replace quality human interaction or exacerbate social isolation and loneliness among this group, which is potentially the case in the use of artificial intelligence and robotics in long-term care for older persons.

40. The COVID-19 pandemic has exposed the collective vulnerability to cyberattacks and abuses in the digital space, with studies showing that older persons are more likely than other social groups to become victims of digital fraud. The acceleration of the transition to the digital sphere that accompanied COVID-19 may have further exacerbated this challenge, with many older persons using these technologies for the very first time. Capacity-building efforts must include components on Internet security and data protection.

41. Security concerns relate to data protection and privacy, both for the individual and for the collected data. In a recent survey in the United States of America, persons aged 50 and over rated privacy concerns as the primary barrier to their adoption of new technologies.[39] Trust that personal data is protected and that digital environments are safe are critical for the successful adoption of technology by older persons. In the context of the use of assistive technology and robotics for social and health care, the Independent Expert on the enjoyment of all human rights by older persons has noted (A/HRC/36/48) that technologies have the potential to both enhance and to challenge the right to privacy of older persons. For assistive technologies and robotics to function adequately for older persons, they need to generate, centralize and share the health data of individuals and other sensitive information, potentially creating challenges to the privacy of older persons themselves, as well as that of their caregivers, family and friends. Upholding high standards of privacy that follow a human rights approach is paramount, as is ensuring that older persons and their caregivers fully understand and provide informed and meaningful consent that takes into account their circumstances and cognitive abilities

42. Age-based discrimination against older persons is another barrier to the use and adoption of digital technologies by this group. Age-based discrimination can be found in the design of technological products and services as well as in preconceptions and prejudices regarding the ability of older persons to effectively use technology. It has been found, for example, that older persons are rarely included in focus groups for the design of new digital technologies even though their involvement could help to identify and counter ageist stereotypes and increase a sense of ownership. Ageist stereotypes can result in products and services, even those targeted to older persons, that do not adequately reflect their needs, preferences and capacities. Often, older persons internalize ageist discrimination, which affects their self-confidence and willingness to take advantage of digital technologies.[40] Disempowering social environments can exacerbate psychological barriers to digital use among older persons, including low self-efficacy and self-esteem and lack of time, motivation or interest.

43. The Independent Expert also raised concerns about the potential threat posed by automation and the use of robots to the dignity, autonomy, informational self-determination and equality of older persons. For instance, the use of digital technologies in long-term care settings should empower older persons and respond to their preferences and needs, rather than creating and maintaining dependency on such tools. These concerns highlight the importance of carrying out comprehensive human

---

[39] Brittne Kakulla, "Personal Tech and the Pandemic: Older Adults are Upgrading for a Better Online Experience", American Association of Retired Persons, September 2021.
[40] WHO, *Global Report on Ageism* (Geneva, 2021).

rights assessments on the implication of new technologies for older users, and, where needed, revise and update existing normative and policy frameworks.

44. Artificial intelligence holds the promise of a multitude of new applications in fields such as ageing in place, health, mobility, social engagement, financial well-being and caregiver burden. However, it can also compromise the safety and agency of its users when it does not follow ethical standards, account for biases or consider privacy and consent issues.[41] Artificial intelligence can mirror discrimination existing in societies and, as such, can either help address disparities or reproduce and amplify them. For instance, research has shown that many hiring systems that rely on algorithms create new forms of discrimination, including by reducing employment opportunities for older candidates.[42] It is important to note that most technologies are currently developed by companies in developed countries and predominantly by men, who can potentially let their conscious or unconscious stereotypes shape those technologies.

45. Artificial intelligence can perpetuate ageist stereotypes, thus reducing the opportunities and benefits provided by digital products and services targeted to older persons. Older persons are at risk of being left behind and the discrimination they experience in their communities may be exacerbated when algorithms are biased and do not adequately reflect the heterogeneous characteristics and needs of that group. In the area of health, ageism in the design, deployment and use of artificial technologies can undermine their quality, reduce intergenerational engagement and curtail the potential benefits of such technologies for that group.[43] Research has shown than even studies seeking to understand the acceptability and effectiveness of artificial intelligence tools for older persons receiving long-term care have a high risk of bias, which calls into question the results of the research and further complicates the ability to make such technologies work fully for older persons.[44]

D. Global Digital Cooperation

46. The existing digital cooperation architecture, as identified in the road map for digital cooperation, has become highly complex and not always effective, with global discussions and processes not inclusive enough of developing countries, small private sector stakeholders and marginalized groups that are unable to make their voices heard. Older persons as a group are often overlooked in global debates on development and, in the context of digital cooperation, a deliberate effort must be made to ensure that older persons and their representatives are adequately included in relevant discussion and processes. Furthermore, global commitments need to be translated into action in order to have an impact. Innovations that have proven effective to achieve changes, such as knowledge transfer between countries, should be replicated.[45]

47. An example of successful collaboration at the international level between United Nations agencies, the private sector and civil society is the "ICTs and Older Persons" special track of the World Summit on the Information Society Forum, which,

---

[41] World Economic Forum, "Designing Artificial Intelligence Technologies for Older Adults" (August 2021).
[42] Alex Engler, "Auditing employment algorithms for discrimination", Brookings Institution, 12 March 2021.
[43] WHO, "Ageism in artificial intelligence for health".
[44] Kate Loveys and others, "Artificial intelligence for older people receiving long-term care: a systematic review of acceptability and effectiveness studies", *The Lancet Healthy Longevity*, vol. 3, No. 4 (April 2022).
[45] American Association of Retired Persons, *Driving Innovation in Healthcare and Wellness, Aging Readiness and Competitiveness Report*, third edition (October 2021).

since its establishment in 2020, has provided an opportunity to discuss digital issues of concern to older persons. The 2022 Forum special track gathered over 550 participants at a series of workshops on topics including remote care and artificial intelligence, age-friendly environments, digital skills for older persons, digital financing and protection of older persons online. The track highlighted the role of ICT in enabling healthy ageing and active participation of older persons in the digital economy. In 2021 and 2022, the Healthy Ageing Innovation Special Prize of the World Summit was organized as a tool to recognize excellence in supporting innovation that brings sustainable solutions for older persons.[46]

IV. Updates and initiatives of the United Nations system to advance ageing issues

48.   In the previous year, many United Nations entities have delved into the topic of digital technologies and older persons, with both the International Day of Older Persons in 2021 and the World Telecommunication and Information Society Day in 2022 devoted to that issue.

49.   Several publications addressing the nexus between digital technologies and older persons were produced. In 2021, the Economic and Social Commission for Asia and the Pacific (ESCAP) issued the publication entitled *Leveraging Technology for the Madrid International Plan of Action on Ageing: Experiences of China, Japan and the Republic of Korea*, which underscored the role of ICT in accelerating the implementation of the Madrid Plan of Action. The analytical document by the Economic Commission for Latin America and the Caribbean entitled *Digital Technologies for a New Future* explored the deployment and use of ICT at national and regional levels in support of development while promoting more inclusive and sustainable digitalization. The ECE policy brief entitled "Ageing in the digital era" (2021) emphasized how digital technologies can assist in the adoption of new skills, facilitate social interactions, foster independent and autonomous living and improve the management and delivery of health and social care services for ageing populations.

50.   Given the importance of mainstreaming ICT/digital accessibility in order to achieve digital inclusion of older persons and ensure development of digitally accessible and age-friendly environments and societies, ITU has addressed ageing in the digital world through awareness raising, provision of tools and capacity-building activities. Tools and resources produced include toolkits, guidelines, relevant thematic reports, online self-paced trainings and video tutorials, which are made available free of charge, in multiple languages and in digitally accessible formats.[47]

51.   In the Republic of Moldova, the United Nations Population Fund (UNFPA) established an innovative partnership with a telecommunications company with the support of grassroots organizations to mobilize young people to help older persons in accessing social services during the pandemic and in developing their digital skills.

52.   Many entities have conducted initiatives and activities geared towards facilitating the process for the fourth review and appraisal of the implementation of the Madrid Plan of Action and in preparation for the global review of the Madrid Plan of Action in 2023. ESCAP launched that regional process with support from United Nations entities active at the regional and national levels, including the resident

---

[46] World Summit on the Information Society, "WSIS Forum 2022: Briefing". Available at: https://www.un.org/development/desa/ageing/wp-content/uploads/sites/24/2022/05/WSIS-Forum-2022_general_updated-28-Feb.pdf.

[47] More information available at https://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/resources-on-ICT-accessibility/default.aspx.

coordinator offices. ESCAP also launched a project on evidence-based policy making for active and inclusive ageing, funded by the Government of China. A dedicated website[48] was created that contains country-level data and information on existing policies on ageing and older persons in Asia and the Pacific. The information was shared with member States to support their national reviews.

53. The Economic and Social Commission for Western Asia (ESCWA) conducted the fourth regional review and appraisal of the implementation of the Madrid Plan of Action in partnership with UNFPA. It supported member States to develop their national review reports by organizing dialogues with stakeholders and parliamentarians and convened a high-level multistakeholder conference. The regional review resulted in a report and an outcome document that synthesized trends, emerging issues and priorities for ageing and older persons in the region. ESCWA also launched the report entitled *Building Forward Better for Older Persons in the Arab Region* (2022) which focuses on the care ecosystem for older persons, including social protection and long-term care. ESCWA also developed an online interactive policy toolkit on mainstreaming ageing, which was presented at capacity-building workshops in countries in the region to develop their ageing strategies and action plans.

54. Other collaborative initiatives were aimed at advancing ageing issues through strengthening research, knowledge and data and providing training. The advocacy brief entitled "Social isolation and loneliness among older people" (2021), issued by WHO in collaboration with the Department of Economic and Social Affairs, ITU and the United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women), presents a synopsis of the scale, impact and harm of social isolation and loneliness among older persons and outlines what can be done to reduce them. The advocacy brief entitled "Older women: inequality at the intersection of age and gender" (2022), produced by the Department of Economic and Social Affairs, UN-Women and the Independent Expert on the enjoyment of all human rights by older persons, with support from the American Association of Retired Persons, seeks to spark a conversation on how to better integrate old age and gender perspectives into policymaking.

55. The Independent Expert on the enjoyment of all human rights by older persons issued two thematic reports, the first on the human rights of older women (A/76/157), submitted to the General Assembly, and the second on ageism and age discrimination (A/HRC/48/53), which was submitted to the Human Rights Council. In November 2021, the Independent Expert undertook a country visit to Finland and in August 2022 will visit Nigeria to assess the human rights situation of older persons at the country level.

56. UN-Women produced representative data on specific subgroups of women, including older women, to inform a gender-sensitive response to the COVID-19 pandemic. By teaming up with national statistical offices, Government entities and international partners, UN-Women rolled out rapid gender assessment surveys[49] on the socioeconomic impacts of COVID-19 and on violence against women in more than 78 countries that capture, for the first time, the experiences of women over 49 years of age. Through the Women Count programme efforts were intensified to systematically collect and analyse data to ensure that all women, regardless of age, are counted and remain visible.

57. The United Nations Institute for Training and Research, through the International Training Centres for Authorities and Leaders Global Network, joined efforts with

---

[48] https://www.unescap.org/events/asia-pacific-workshop-developing-tools-measure-inclusive-and-active-population-ageing.
[49] Available at https://data.unwomen.org/rga.

various members of the Inter-Agency Group on Ageing, including the Department of Economic and Social Affairs, the Office of the United Nations High Commissioner for Human Rights, UNFPA, the International Organization for Migration, UN-Women, the Office of the United Nations High Commissioner for Refugees, WHO, ITU and civil society, to organize a virtual round table entitled "Mainstreaming Knowledge on Ageing" as a contribution to the twentieth milestone of the Madrid Plan of Action and to enhance inclusive learning and foster meaningful participation of older persons in their communities.

V. Conclusions and recommendations

58. While digital technologies hold the promise of limitless innovation and opportunities to build better societies, they also pose significant challenges, many of which are likely not yet fully grasped. Digital technologies can, for example, enable social support through platforms and digital communications tools that were unthinkable just decades ago, while also risking an increase in isolation and loneliness when they are not adequately implemented and replace real human interaction. While the digital revolution is increasingly addressed in global debates, it is still a relatively novel phenomenon, and this highlights the need for relevant stakeholders, both in the public and the private sectors, to be mindful about the short- and long-term consequences of measures and policies in the digital space, especially to the extent that they affect social groups that already face discrimination and exclusion, as is the case for many older persons around the world.

59. Both population ageing and the digital revolution were brought into the spotlight during the COVID-19 pandemic. Public attention was brought to the vulnerabilities faced by many older persons around the world and the expansion of digital technologies to all areas of life was accelerated. The negative consequences of the digital divide were laid bare, ranging from inadequate access to information to the inability to access employment or education when those services went remote. The disproportionate digital gaps experienced by older persons during the pandemic require urgent prioritization of the elimination of existing barriers and the achievement of the full participation of all older persons in the digital sphere.

60. Member States may wish to:

(a) **Continue to emphasize the importance of addressing digital inclusion of older persons in work on digital technology, including, but not limited to, work in areas elaborated in the road map for digital cooperation, and to consider this in the forthcoming Global Digital Compact proposal for the Summit of the Future;**

(b) **Remove barriers and harness the potential of digital technologies to improve the well-being of older persons, their caregivers, families and communities, in health care and long-term care, independent living, employment, life-long learning and financial wellness, among other areas;**

(c) **Intensify efforts towards achieving universal, affordable and accessible access to and use of information and communication technologies, in cooperation with all stakeholders, in all regions and of all people irrespective of their age, gender, ability, socioeconomic status or location;**

(d) **Call upon relevant stakeholders to foster ICT/digital accessibility for all through the establishment of systematic mechanisms to apply accessibility, usability and universal design standards to close the digital divide for older persons and other groups in vulnerable situations, including through the adoption of policies and regulations and the implementation of relevant standards;**

(e)   **Promote the development of continuing and well-financed digital literacy programmes for older persons that target their specific needs and interests, taking into account the impact of intersecting discriminations experienced by many older persons owing to socioeconomic status, education level, race and/or ethnicity, gender and disability;**

(f)   **Adopt a human rights-based approach and a life-cycle perspective to ageing and technology and counter existing age-based discrimination in the digital space;**

(g)   **Call upon public and private stakeholders to guarantee the meaningful inclusion of older persons and their representatives in relevant digital cooperation mechanisms;**

(h)   **Strengthen and promote the collection, processing, analysis, dissemination and use of relevant data, information and metrics on digital technologies, disaggregated by age, sex, disability and location.**

———————