







2019 International Meeting on Technology for Ageing in East and North-East Asia

13-14 November 2019, Beijing, China

Meeting Report

I. Organization

- 1. The Meeting was jointly organized by China National Committee on Ageing (CNCA), the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), Renmin University of China (RUC) and United Nations Population Fund (UNFPA) on 13 14 November 2019 in Beijing, China. The programme of the Meeting is attached as annex I. The list of participants is attached as annex II.
- 2. The objective of the Meeting was to
 - a. Facilitate experiences and practices sharing on the use of technology for ageing, and to discuss and make relevant recommendations; and
 - b. Identify specific areas for further research and regional collaboration

II. Discussion Highlights

- 3. Participants noted that population is ageing rapidly in East and North-East Asia (ENEA). According to latest estimates of the United Nations, ENEA is home to around one third of all older persons aged 65 and above in the world, with the number of older persons in the subregion expected to more than double from 200 million in 2015 to almost 500 million in 2050. Three countries in the subregion were highlighted: China has the largest population of older persons in the world, Japan has the highest percentage of older persons in the world, and the Republic of Korea (ROK) has the fastest rate of population ageing in the world.
- 4. Participants agreed that population ageing has profound impacts on sustainable development and presents significant economic and social challenges, such as decline in labour force, rise in the old-age dependency ratio, higher demand for health care and long-term care, etc. Given the unprecedented speed and scale of population ageing in the subregion, participants stressed the urgency of effective policy responses, especially on leveraging technology to better support older persons.
- 5. The Meeting consisted of two interactive sessions. Session I focused on the policy framework on technology for ageing. Speakers from China, Japan, Mongolia and the Republic of Korea presented their national initiatives, including both policy measures led by the Governments and innovations conducted by the private sector. The issue of how to incorporate the perspective of technology into the national ageing policy framework was highlighted. One of the examples being discussed was

the policy framework launched by the Government of Japan to build a "Digital Silver City" with digital transformation in local governments. Participants agreed that sharing knowledge and best practices are mutually beneficial to address the common challenges of population ageing for ENEA countries and beyond, and stressed the need to strengthen regional and international cooperation.

- 6. Session II explored various applications of technology for ageing and how they could be customized according to the local contexts. Experiences on using Information and Communication Technology (ICT) to support older persons in managing chronic diseases in Cambodia and Viet Nam were shared. The Smart Senior Care service system with distinctive models in different districts in Beijing was introduced. The practical applications of current ageing technologies in Japan, including communication robots, nursing robots, smart home system, etc. were discussed. Participants pointed out that there are several areas that require further attention, including the development of simple and low-cost products that could address the needs of older persons, improvement in data management with better data security and data utilization, and the involvement of older persons in the design, development and deployment of new products and services.
- 7. On the way forward, participants agreed that a cooperation mechanism on the issue of population ageing and technology should be established. Participants suggested that such a collaborative mechanism may start with the regular conduct of the meeting on technology for ageing in East and North-East Asia, focusing on strengthening policy dialogue and academic exchanges on technology for ageing. Participants further proposed to develop collaboration beyond the subregion of East and North-East Asia (i.e., ENEA +) and explore a greater role of private sector in the collaborative mechanism.

III. Proceedings of the Meeting

Opening Addresses

- 8. Mr. Caiwei Xiao, Vice President of CNCA, on behalf of the organizers, thanked the participants for attending the Meeting.
- 9. Mr. Yushao Wu, Vice President of CNCA, delivered opening remarks on behalf of the CNCA. Firstly, Mr. Wu said that population ageing and urbanization had become important national issues. Ensuring the well-being of older persons has become a key driving force of the development of science and technology. Secondly, Mr. Wu explained that China has entered a period of rapid population ageing, with implications for nearly all sectors of society. Thirdly, Mr. Wu stressed that technology for ageing was an important means of improving the quality of and of reducing the cost of services to older persons. Technology for ageing would also promote industrial upgrading and boost new drivers of economic development. As East and North-East Asian countries are closely connected, he suggested that a cooperation mechanism on ageing issues should be established. It was also necessary to strengthen policy dialogue and exchanges, share innovations and experiences of countries, and promote the topic of ageing and national development within the subregion. Additionally, he highlighted the need to promote practical cooperation in the science and technology industries related to ageing.
- 10. Mr. Peng Du, Vice President of RUC, highlighted three characteristics of population ageing in East and North-East Asia. Firstly, China has the largest population of older persons in the world, Japan has the highest percentage of older persons in the world,

and the Republic of Korea (ROK) has the fastest rate of population ageing in the world. Secondly, East and North-East Asia is leading the development of ageing products in the world. In fact, both the public and private sectors are very enthusiastic about investing in science and technology. Thirdly, ageing technology depends on the development of community services and long-term care. It has a wide range of implications, and thus important for the government, enterprises and researchers to discuss together. Finally, Mr. Du introduced the scientific research on ageing of RUC.

11. Ms. Sae-ryo Kim, Regional Partnerships Advisor of UNFPA, noted that while population ageing is a global phenomenon, China, Japan and the Republic of Korea all have their specific characteristics, particularly because of the large number and proportion of the population of older adults as well as the speed of ageing. Ms. Kim explained that the United Nations Population Fund has been working with various Government agencies since 1985 to address the challenges of population ageing in China. The education level of older persons in China has greatly increased and will be even higher in the future, which will bring a long-term dividend to society. Longer lifespan, improved education and health, and the rapid development of technology, hence the changes in the nature of work, make it necessary to develop flexible arrangements of education/work/leisure throughout life course.

Keynote Presentations

- 12. Mr. Sangmin Nam, Deputy Head, ESCAP ENEA, gave a keynote presentation on "Overview of Population Ageing in East and North-East Asia, its Challenges and Countermeasures". Mr. Nam first discussed the demographic challenge faced by countries in East and North-East Asia, such as fertility rates below replacement level and a significant decrease of the ratio of working-age population to older persons. He then explained the implications of population ageing on sustainable development, especially its close linkage with Sustainable Development Goals (SDGs) 1 (no poverty), 3 (good health and well-being), 5 (gender equality), 8 (decent work and economic growth), 10 (reduced inequalities) and 11 (sustainable cities and communities). Mr. Nam reviewed the priority directions and key issues of the Madrid International Plan of Action on Ageing (MIPAA) and stressed that the implementation of the MIPAA complemented and contributed to achieving the 2030 Agenda for Sustainable Development. Finally, Mr. Nam echoed Mr. Wu's suggestions, and on that basis, he highlighted the importance to leverage technology to support older persons and the need to strengthen regional and international cooperation.
- 13. Mr. Yong Zhu, President of Hualing Smart Elderly Care Industry Development Center, gave a keynote presentation on "Application of Smart Healthy Ageing". Mr. Zhu posited that the application of science and technology for ageing in China was embodied in the wisdom of old-age care. He gave an overview of the development process, current situation and development trends of China's smart ageing industry. Firstly, smart elderly care includes three basic elements: modern information technology, artificial intelligence products, and professional methods and technologies for older persons. Secondly, the development process of China's smart ageing industry had generally gone through the three stages of advocacy, pilot and promotion. Thirdly, the development of China's smart care industry included six aspects, namely, the growing demand for smart care services for older persons, the increasing support from the government, the supporting system for industrial development, the preemptive moves of market players, the promotion of innovation

in service models and business models, and the accelerating pace of innovation in key technologies and intelligent products. Finally, Mr. Zhu gave a comprehensive review on the basic trend of the development of China's smart ageing industry, covering the following points: changing social norms in the new era of ageing population, the basic characteristics of the development of the smart ageing industry (i.e. innovation, integration, application and sharing), and the innovation of operating mechanism as the driving force of the market. Specifically, the operation mechanism mainly includes a resource integration mechanism, a consultation participation mechanism, a service operation mechanism and an operation supervision mechanism.

- 14. Mr. Gong Chen, Director, Research Institute of Gerontology at Peking University, gave a keynote presentation on "The Robot for Ageing Service: Differences between Ideal and Reality". Mr. Chen compared an ideal situation with the current status quo to illustrate the insufficiency of today's elder care robots in meeting the needs of senior citizens. To begin with, he gave several examples of assistive devices and elder care robots from Japan, China Aid (the International Exhibition of Senior Care, Rehabilitation Medicine and Healthcare) and the China International Import Expo. Then, he discussed two major applications of science and technology in senior care: one targeting older persons themselves and the other targeting service providers and living environments. He argued that future senior care robots will either be humanlike or will replace some functions of people. He further introduced a study carried out during the Beijing-Hongkong-Macao-Shenzhen Summer Camp for Ageing Studies held at Peking University, which looked at the application of senior care robots. It shows that today's robots are still far from being ideal for seniors, and that the extent to which older persons can accept robots has a lot to do with their cohorts, cultural backgrounds, and whether they have used robots before. Finally, he talked about the regional differences of ageing as well as the development gap across different regions in China, pointing out that, in the future, elder care robots should be more user-friendly with more practical functions, so that they meet the needs of seniors in their daily life.
- 15. Mr. Rintaro Mori, Regional Adviser, UNFPA Asia and the Pacific Regional Office, gave a presentation on "The Role of Technology in Older Persons' Social and Economic Engagement". Firstly, Mr. Mori discussed the relationship between the SDGs and population ageing from the perspectives of natural resources, population development and operationalization. He further analyzed people's living conditions in different life stages. He argued that more attention should be paid to the gap between life expectancy and healthy life expectancy, in addition to focusing on how to deal with the problem of "disease and health". Secondly, Mr. Mori discussed the specific effects of technology on ageing. He explained that technology has a positive impact on population ageing, such as helping with functionalities, slowing the ageing process, and reducing costs for ordinary services. Yet there are three questions to consider while promoting technology for ageing: (i) who should share the cost; (ii) autonomy and legal protection; and (iii) ethics. Finally, he discussed the advantages and disadvantages of technology and how a Health Technology Assessment (HTA) should be conducted.

Policy Framework on Technology for Ageing

16. Mr. Fuqing Hao, Deputy Director-General, Chinese National Development and Reform Commission, gave a presentation on "Strategies and Key Points of Responding to Population Ageing in the New Era". After highlighting the major characteristics of population ageing in China (i.e., the enormous number of older persons, the rapid rate of population ageing and the persistence of the demographic shift), Mr. Hao discussed strategies of the Government of China on addressing the challenges of population ageing. He said that China should make systematic planning and implement strategy comprehensively, as well as mainstream ageing policies in social policies, keeping a foothold of wealth, talents, service, technology and environment. Mr. Hao stressed the importance of guarantying basic needs, favoring the whole society, and opening up the market in order to speed up in satisfying people's multi-layer and diversified needs.

- 17. Ms. Naoko Iwasaki, Executive Member, Policy Review Council, Ministry of Internal Affairs and Communications, Japan, gave a presentation on "Policy Framework on Technology for Ageing in Japan". At the outset, Ms. Iwasaki mentioned challenges that Japan is facing as the world's most aged society. She mentioned that the number of administrative staff in local governments in Japan would be halved by 2040 because of population ageing. Then she elaborated on the policy framework launched by the Government of Japan to build the "Digital Silver City" with digital technologies, including the "Digital First" Law and Digital Transformation in Local Governments. Specifically, local governments would install AI/RPA applications to deal with labor shortages. She discussed the progress that had been made: among the 1,700 prefecture-level governments, 36 per cent had installed AI applications and 32 per cent planned to do so; 30 per cent had installed RPA applications and 40 per cent planned to do so. She also listed some typical AI/RPA applications, such as voice recognition, chatbot, and smart matching system that could be used for transportation, healthcare services, etc. Finally, she emphasized five caveats in implementing the "Digital Silver City" Program with emerging technologies, namely policy, systems standardization, capital, human resources and regulation.
- 18. Ms. Chogdon Erdenechimeg, Senior Officer, Population Development Department, Ministry of Labour and Social Protection of Mongolia, gave a presentation on "Ageing and Technology in Mongolia". Ms. Erdenechimeg discussed the policy framework and technologies on population ageing in Mongolia, covering the challenges of population ageing and the National Strategy on Ageing in Mongolia. She explained that the National Strategy on Ageing in Mongolia mainly addresses older person's health and social protection needs by providing healthy ageing and age-friendly services. She further introduced the latest programme approved on 30 October 2019, that is, National Program on Development and Protection of Elderly People. She noted that it offered a comprehensive framework for the coordination of all partner inputs in the area of support and development for older persons in Mongolia. Finally, she suggested incorporating the perspective of technology for ageing into the national ageing policy framework.
- 19. Ms. Jiyoung Suh, Research Fellow, Science and Technology Policy Institute, National Research Council for Economics, Humanities, and Social Sciences, Republic of Korea, gave a presentation on "Current Issues in Korean S&T Policy for Ageing Society". She discussed policy efforts by the Government of Korea to address socio-economic issues related to population ageing. She pointed out that many researchers in the Republic of Korea suggested the Government to invest more in finding technological solutions to support the active life of seniors. She shared that daily life health care, personalized disease diagnosis, customized care service environment, social inclusion of seniors, improvement of meaningful leisure activities, accessibility of infrastructure, etc., had emerged as important research areas. She highlighted that these fields of research did not currently pay enough attention to the daily needs of

older persons and suggested some directions to focus on in the future (e.g., careresidency integrated service, medical care integrated service, etc.). She concluded by calling for international cooperation in scientific research on technology and ageing.

During the subsequent panel discussion, participants discussed human resources 20. allocation, care services, the relationship between ageing and economic growth, decent work and other issues. On the issue of human resources for care for older persons, Ms. Iwasaki argued that families may not be able to provide quality care services for older persons because there were not enough family members who could provide care, and they often lacked the necessary skills to provide quality care. Thus, most families relied on nursing homes or external caregivers. On the issue of government coordination among different stakeholders, Mr. Nam said that a highlevel department was needed to coordinate different government departments, experts and related industries. At the same time, older persons should be encouraged to participate in this discussion. Regarding online and offline integration of services for older persons, Ms. Suh pointed out that families, hospitals and care institutions were integrated in the community in the Republic of Korea. On the socio-economic impact of ageing, Mr. Obi mentioned that Japan's population ageing also had positive effects on society. For instance, the industry targeting older persons was expanding and employment of older persons was also increasing. He argued that population ageing was not a burden to society, but an asset for social development.

Applications of Technology for Ageing

- Ms. Vanessa Steinmayer, Population Affairs Officer, Social Development Division, 21. ESCAP, gave a presentation on "Using ICTs to Support Older Persons". Ms. Steinmayer began by highlighting how ICTs could support older persons: ICTs could contribute to the inclusion, health and well-being of older persons and facilitate active ageing. She mentioned that the use of ICTs had grown globally, even among older persons, which could support the use of ICTs for ageing. Moreover, a lifecourse approach could be adopted to ageing, which included training on ICTs throughout the life-cycle. Secondly, Ms. Steinmayer discussed the gig economy and the change in lifestyle of older persons brought about by ICTs, highlighting the possible digital divide in the use of technology. Finally, Ms. Steinmayer shared specific cases of ageing technology in Thailand and experiences on using ICTs to support older persons in managing chronic diseases in Cambodia and Viet Nam. Resulting from research in the project, she recommended the following on the use of ICTs in the context of ageing, namely (i) developing simple, low-cost technology that addresses the needs of older persons; (ii) developing products that can reach a wider audience and the furthest behind; (iii) increasing the digital literacy of older persons; and (iv) supplementing, but not replacing, personal services with the use of ICTs.
- 22. Mr. Meiyun Zuo, Director, Research Institute of Smart Senior Care, RUC, gave a presentation on "The Practice of Smart Senior Care: Evidence from Beijing". Mr. Zuo first introduced the definition of Smart Senior Care (SSC), which is "providing support for seniors' daily life with information technologies so that they can live a happier, more dignified and valuable life". He explained the three dimensions of SSC (i.e. smart filial piety for seniors, smart utilization of seniors, and smart help for seniors) and its advantages at the supply side and the demand side. He then talked about some practices of SSC in Beijing. He explained that the city had been building the "1+16+X" SSC service system with distinctive models in different districts. For example, the "All-in-one" model in Yanqing District which helped older persons to

access services provided by different platforms. In Dongcheng District, service providers were being incentivized to help older residents by the "Service Station Ranking" model. Another example would be the "Vying for Orders by Two-way Confirmation" model in Haidian District which consolidates resources and better matches service providers with needs. He also mentioned the "Volunteer to Help" model in Yanqing District which encourages Communist Party members and volunteers to help older persons. At the end of his presentation, Mr. Zuo highlighted the three prominent problems facing SSC. First, senior care service systems were not effectively inter-connected yet. Second, SSC service providers in all districts lacked IT talent and the exchanges of information and experience needed to be improved. Third, there were difficulties with data management, for example, insufficient awareness of data security and inadequate utilization of data.

- Mr. Toshio Obi, Professor, Waseda University, gave a presentation on "Silver 23. Innovation Technology for Ageing in Japan". Mr Obi first discussed the impact of population ageing on Japan's economy. He explained that the simultaneous development of ageing societies and artificial intelligence had brought great opportunities and challenges to society. Smart devices and systems, blockchain technology, advances in computing systems, the application of social networking technology, global cooperation in 5G technology, and multimedia technology have become the driving factors of ageing technology. Mr. Obi then presented practical applications of current ageing technologies, including communication robots, nursing robots, wearable devices for monitoring purposes, etc. He also discussed the impact of ageing technology on urban management and the well-being of older persons in the context of urbanization. Mr. Obi pointed out that many older persons had mobility limitations. When natural disasters occurred, they may not be able to escape and thus had a greater risk of death or injury. In this regard, the application of ageing technology can be helpful. He further argued that modern science and technology should not target only professionals, but also broader user groups such as older persons. Lessons should thus be drawn from the "digital silver community". Finally, Mr. Obi suggested that international cooperation should be strengthened under the framework of sustainable development, and more attention should be paid to issues of public concern. He also suggested China, Japan, Mongolia, the Republic of Korea and other countries to strengthen cooperation and jointly promote the development of technology for ageing.
- During the panel discussion, Ms. Steinmayer, Mr. Zuo and Mr. Obi discussed with 24. the audience about how to customize the use of technology for ageing. In response to the question on gig economy, Ms. Steinmayer explained that the gig economy could provide opportunities for older persons in terms of providing access to services to older persons and an opportunity for older persons to offer their services and thus generate income. A question was raised on who bears the liability in the case of the use of smart devices, for example if the robot fails to report deteriorating health of an older person. In response, Mr. Obi explained that liability differed by country context and needed to be worked out in more detail. He explained that the user may be responsible in the United States of America, while there was more Government liability in China. He added that governments, companies and individuals should share the responsibility for the related legal risks and costs. Mr. Zuo pointed out that the cost of smart devices was very important for older persons and attention should be paid to personalized services for older persons. Regarding the policy mechanism, operation experience and system connection of Smart Senior Care, Mr. Zuo said that there were both unified planning and local pilot programs.

Recommendations and Way Forward

- 25. The Meeting agreed that efforts should be made to establish a collaborative mechanism on the issue of population ageing and technology. While population ageing is a continuing trend, countries face the dual pressures of expediting the restructuring and upgrading of their economies while effectively managing population ageing. Efforts should be made to reach consensus and enact stipulations regarding aspects such as the framework, form, topics, supportive measures and output of collaboration on the issue of technology for population ageing with an aim to normalize, systemize and institutionalize collaborative exchanges.
- The participants suggested that efforts to establish such a collaborative mechanism 26. related to the issue of population ageing and technology may follow a phased approach. Such a collaborative mechanism may start with the regular conduct of the meeting on technology for ageing in East and North-East Asia, focusing on strengthening policy dialogue and academic exchanges on technology for ageing so as to bring the issue of technology for ageing into the discussion on population ageing and continue to improve national capacities. At the same time, efforts should be made: (i) to develop collaboration beyond the subregion of East and North-East Asia (i.e., ENEA +) on the issue of technology for ageing; (ii) to explore the possibilities of having the meeting to be organized on a rotating basis in countries of East and North-East Asia. Appropriate partnerships, particularly with the relevant Government bodies responsible for technologies for ageing in countries of East and North-East Asia, are crucial to the success of future meetings; and (iii) to explore a greater role of private sector in the collaborative mechanism to be established, including in particular through combining the meeting with the conduct of an expo/exhibition of technological products on ageing.

Closing

- 27. In the closing remarks, Mr. Sangmin Nam stressed that older persons are assets to society and efforts have to made to ensure their well-being and social integration. He added that East and North-East Asian countries should establish regional coordination mechanisms to further strengthen cooperation and coordinate the interests of all relevant parties. Finally, he thanked the organizers for co-hosting the Meeting.
- 28. Mr. Xiao concluded by highlighting the fact that population ageing is one of the most important achievements and social developments of the 21st century. He suggested

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