

# Senior-friendly concepts in the theory and practice of spatial planning – policy frameworks

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**Abstract.** With the current converging trends of urbanisation and population aging, but also shifting of the age limit for active aging and virtualization of daily activities, it is important to focus attention on the most vulnerable groups of citizens living in urban areas, who, in a rapidly changing world, face the threat of loneliness and isolation due to the degradation of physical or psychological health, social or cultural isolation, barriers in space, technological and communication barriers and the like. Senior-friendly approaches in spatial planning concern mainly seniors (or persons at the end of an active life), but there are natural overlaps also towards the needs of other groups with specific needs, as well as other persons of every social inclusion. The article summarizes the key opinion making institutions efforts (mostly United Nations and WHO) to help cities on their way to build an environment more friendly to older people, to facilitate the exchange of experiences and provide them with a supportive framework, and focuses on zooming in on the content of the WHO manual *Measuring the Age-Friendliness of Cities. A Guide to Using Core Indicators*, which represents a helpful tool for setting policy frameworks for cities by indicating a set of core and additional indicators for monitoring and evaluating progress in the friendliness of the urban environment to age. The manual was created in 2015 as the result of a structured preparation process with inputs generated from more than 40 communities across 15 countries, and a final pilot study involving 15 communities across 12 countries.

## 1 Introduction

The global trend of population aging does not bypass Europe either, where a 5% decrease in the size of the population between 2019 and 2070 is expected (from 447 million in 2019 to 424 million in 2070), and a significant increase in the so-called *old-age dependency ratio*, which is the ratio of the number of persons in post-productive age to persons in productive age, from the level of 29% in 2010 to the level of 59% in 2070. In practice, this means, that while in 2010 there were almost four persons in the productive age of 20-64 for one person aged 65 and over, in 2070 there will be less than two persons [1].

In parallel with the aging of the population, we are also noticing the trend of shifting the retirement age limit, which in most EU countries has moved to the limit of 65 years and over. [2] This is a necessary adaptation of economies to the population crisis, which is related to

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the capacity of savings created during the active life of the inhabitants. As research by the International Monetary Fund shows [3], both private and public savings in advanced economies are expected to decline over the next 30 years due to higher pension spending. Therefore, if younger people are to receive pension benefits similar to those of today's retirees, with the projected increase in life expectancy, it will require them to save significantly more and to postpone their retirement by several years.

The phenomenon of population aging is indisputable, and in the past decades it has also become an important motive for the development of the so-called *senior-friendly*, or *age-friendly*, *elder-friendly* concepts in various areas of life. This is primarily documented by the UN initiative *Decade of Healthy Aging 2021-2030* [4], implemented as a follow-up to the *Agenda 2030 for Sustainable Development* from 2015 and its central outcome in the form of *17 sustainable development goals*. [5]

From the point of view of the theory and practice of spatial planning, which is the subject of our article, we are interested in creation of the frameworks for possible incorporation of the senior-friendly activities into the development policies of cities, through which they could contribute their part to the fulfillment of the global goals of sustainable development aimed at the joint management of current demographic trends.

In this field they seem to be undoubtedly primarily the initiatives of United Nations and World Health Organisation, which have played a key role in developing the policy frameworks of the senior-friendly concepts that could contribute to the cities development reacting on demographic trends. The article follows the process of their emergence and development and focuses in particular on zooming in on the content of the WHO manual *Measuring the Age-Friendliness of Cities. A Guide to Using Core Indicators*, which represents a helpful tool for setting policy frameworks for cities by indicating a set of core and additional indicators for monitoring and evaluating progress in the friendliness of the urban environment to age.

## **2 Emergence and development of senior-friendly concepts in spatial planning – policy frameworks**

The goal of supporting the highest quality of life and well-being of all people experiencing aging on an individual and societal level appeared on an international scale already in the 1950s, primarily on the ground and at the initiative of the *International Association of Gerontological Societies*. Its agenda was mainly about supporting gerontological research in the field of biological, medical, behavioral and social policy and practice, training quality personnel in the field of aging, and defending the interests of gerontological organizations in international affairs. These initiatives appear to be a significant impulse that led to a broad scope and establishment of so called *senior-friendly* concepts in terminology across disciplines and countries on a global scale. The organization was founded and registered in Liege, Belgium in July 1950 and later transformed into the *International Association of Gerontology (IAG)* [6]. Its members are national multidisciplinary organizations engaged in research and training in gerontology in five regions: Africa, Asia/Oceania, Europe, North America and Latin America/Caribbean. According to information from the official website, the association currently unites 70 companies in sixty-three countries, with the number of members exceeding 40 thousand. The mission of the International Association of Gerontology nowadays is to promote the highest level of achievement in gerontological research and training worldwide and to cooperate with other international, intergovernmental and non-governmental organizations in advancing gerontological interests worldwide.

The *World Congress of Gerontology and Geriatrics*, organized by the IAG association in Rio de Janeiro, Brazil, in 2005, was undoubtedly an event of particular importance for the establishment of the issue of population aging and settlement of the terms *senior-friendly*,

*age-friendly, elder-friendly* also into the sphere of public policies having an impact on spatial planning [7]. On its soil, the initiative of the WHO called *Global Age Friendly Cities* was born, which resulted in the publication, a guide for age-friendly cities titled *Global Age Friendly Cities. A Guide*, issued in 2007 [8]. With this initiative, the WHO followed up on its previous active aging agenda from 1982 (*First United Nations World Assembly* in Vienna, Austria, and the adopted *International Plan of Action* [9]), and from 2002, in particular the WHO contribution *Active Ageing: A Policy Framework* [10] to the program of the *Second United Nations World Assembly on Aging*, which took place in 2002 in Madrid, Spain [11] and adopted a global action plan (a revised Plan of Action), with the aim "to ensure that persons everywhere are able to age with security and dignity and to continue to participate in their societies as citizens with full rights." [12]

The plan is commonly known as the *Madrid International Plan of Action on Aging* (MIPAA), and it represents a comprehensive set of commitments dedicated to UN member states worldwide, focusing "on three priority directions: older persons and development; advancing health and well-being into old age; and ensuring enabling and supportive environments." [12]

MIPAA is still serving as one of the main framework management and guiding tools for the work of the United Nations Economic Commission for Europe (UNECE) in the field of aging.

The above-mentioned WHO policy framework was built on the even earlier foundations, especially on the UN resolution of 1991 [13], by which UN member states adopted the *United Nations Principles for Older People*, based in pursuance of the already mentioned *International Plan of Action on Ageing* adopted by the First World Assembly on Ageing in 1982 [9]. These were five principles of Independence, Participation, Care, Self-fulfilment and Dignity, which were defined together with the encouragement for member state governments to incorporate them into their national programs wherever possible. As the WHO states on the pages of its agenda for the global framework of age-friendly cities (*The WHO Age-friendly Cities Framework* [14]), it were precisely these UN principles from 1991 that laid the foundations for *senior-friendly, or age-friendly, elderly-friendly* city concepts.

The development of *senior-friendly, or age-friendly, elderly-friendly* city concepts was also encouraged by other WHO initiatives. In 2010, it was the establishment of the *Global Network of Age-friendly Cities and Communities* (GNAFCC) [15] with the subsequent organization of the first and second conference of age-friendly cities, which took place in Dublin, Ireland in 2011 (*1st Conference on Age-friendly Cities, Dublin, Ireland, 2011*; see the *Dublin Declaration* [16]) and in Canadian Quebec City in 2013 (*2nd Conference on Age-friendly Cities, Quebec City, Canada, 2013* [17]). According to the official website of GNAFCC [15] this network currently unites 1300 members from 51 countries of the world.

In connection with the development of *senior-friendly* approaches in the context of public policies with impacts on the area of spatial planning, it is also necessary to mention the related concept of "active aging" and the introduction of the so-called *Active Aging Index (AAI)* [18], which was created by the European Center Vienna team and managed as a joint mission of the European Commission's Directorate General for Employment, Social Affairs and Inclusion (DG EMPL) and the Population Unit of the United Nations Economic Commission for Europe (UNECE) as part of the *European Year for Active Aging and Solidarity between Generations* initiative, announced by the European Union for 2012 [19,20].

The *Active Aging Index* is a tool for measuring the extent to which older people are able to live independent lives, to participate in paid employment and to engage in social activities, as well as their ability to age actively. The index is compiled from 22 individual indicators, which are grouped into four domains reflecting different aspects of active aging:

- Employment (contributions through paid activities)
- Participation in society (contributions through unpaid productive activities)

- Independent, healthy and secure living
- Capacity and enabling environment for active aging.

The methodology of compiling the index is similar to the UN *Human Development Index* [21], where all indicators are presented as positive coefficients with a value from 0 to 100 points, while a higher value reflects a higher level of potential self-realization of older people (For example, the more older people participate in volunteer activities, the higher their active aging scores are.).

Since the introduction of the index, a comparison of the countries of the European Union, for which this tool was primarily prepared, has been carried out and published on a two-year basis. Based on it, however (according to UNECE [22] ), some other studies have already been created for the calculation of the Active Aging Index for other countries as well (e.g. Canada, Iceland, Norway, Serbia, Switzerland, Turkey). In addition, several countries and regions have engaged in their own index calculations at the subnational level (Germany, Italy, Poland, Spanish province of Biscay) or at the national level (Republic of Moldova, Russian Federation, Ukraine). In these situations, the biggest challenge can be considered the lack of harmonized statistical sources both at the international level and at the country level, with the application of alternative variables (indicators) for the index's measurable indicators, which can undermine the credibility of their comparability with the EU results at the national level. These comparisons can, however, also acquire a certain informative value when applying the "best comparability principle", where the importance of individual indicators as well as the index as a whole must be kept in mind. [22].

Sub-national researches may be focused both on the cross-comparison of regions and on the identification of areas where regions achieve higher/lower results, while the experiences of regions with higher index values can serve as an object of investigation in the creation of their own *senior-friendly* policies.

For measuring the rate of active aging it is also important the introduction of comparative international datasets covering all EU countries, such as : EU-SILC (Survey of Income and Living Conditions), EU-LFS (Labour Force Survey) and EQLS (European Quality of Life Survey) - or also ESS (European Social Survey), SHARE (Survey of Health, Aging and Retirement in Europe), or EHIS (European Health Interview Survey), which are, however, not covering the full list of the EU countries.

The year 2015, when the WHO published the *World Report on Aging and Health* [23] providing a new framework for understanding and support of healthy ageing, can be considered as another milestone on the way to the creation of *senior-friendly* policies having an impact on spatial planning. The report outlines, in Chapter 6, how this new approach complements the work of recent decades to develop age-friendly cities and communities. In the same year, the above already mentioned UN document *Sustainable Development Goals* [5] was also adopted, which became an integrated, indivisible set of global priorities for sustainable development.

In the same 2015, the World Health Organization (WHO) also produced a comprehensive document *Measuring the Age-Friendliness of Cities: A Guide to Using Core Indicators*. [24]. It is a recommended set of indicators to support the process of monitoring and evaluating the extent to which cities can be considered senior-friendly. In the next chapter we are zooming in on the content of the document, as we consider it to be a useful (and hitherto missing) tool of assistance and guidance for the development of age-friendly city policies and the implementation of age-responsive spatial planning initiatives. It is adaptable to different country contexts around the world. To what extent and with what success cities proceed in planning their development according to these recommendations is not in focus of this article, but it is certainly worth examining within broader scientific research in the field of spatial planning

### **3 WHO manual „measuring the age-friendliness of cities. A guide to using core indicators“ - summary**

The document sets out a framework and a set of core and additional indicators for monitoring and evaluating progress in the age-friendliness of urban environments.

#### **3.1 Starting points and goals**

In the introduction, the handbook draws attention to the importance of the topic in connection with the converging trends of rapid aging and urbanization, as a result of which the number of older people living in urban environments is increasing dramatically.

In response to the phenomenon of population ageing and the rise of non-communicable diseases, health services are increasingly reorienting towards health promotion, prevention of diseases, disability and vulnerability, management of co-morbidities and provision of long-term care, while reducing unnecessary institutionalisation. Beyond health care, there are other aspects of the natural and built environment, social services or programs, social capital, cultural attitudes, equity and inclusion that affect the extent to which older people can function or participate in society. Older residents need a variety of supportive living conditions to respond to the physical, mental, and social changes they experience as a result of biological aging. These may be missing especially in urban environments, which are generally not designed as residential centers for a population of predominantly elderly people. Although the guide mainly focuses on urban environments, it also emphasizes the importance of rural environments that are friendly to older people.

An "age-friendly city" is defined in the guide as „an inclusive and accessible community environment that optimizes opportunities for health, participation and security for all people in order that quality of life and dignity are ensured as people age“. It means that in an age-friendly city, all its supporting policies, services, settings and structures enable people to age well by:

- recognizing the wide range of abilities and resources among older people;
- anticipating and responding flexibly to their aging-related needs and preferences;
- respecting the decisions and lifestyle of older people;
- providing protection to those who are most vulnerable; and
- promoting the inclusion and contribution of older people in all areas of community life.

For a full understanding of the concept of age-friendly cities, the guide strongly recommends readers to read the *Global Age-friendly City Guide*, developed by the World Health Organization (WHO) in 2007. It provides an overview of the basic features of an age-friendly city, which is characterized by the support for the development of health and social policies, services and interventions aiming to create an environment favorable to older people. It was developed based on insights and inputs from older people, carers and service providers, collected in 33 cities in all WHO world regions and focuses on eight key areas of urban life that include determinants of health and well-being:

- outdoor spaces and buildings,
- transportation,
- housing,
- respect and social inclusion,
- civic engagement and employment,
- social participation,
- community and health services and
- communication and information.

The manual *Measuring the level of age-friendliness of cities* aims, through setting frameworks and indicators, to provide assistance to cities in finding a common understanding between all the relevant interested parties (stakeholders) in deciding on key age-friendly dimensions in their particular city, in setting related goals and in monitoring their achievement over time after the implementation of the respective interventions. The indicators are to be an integral part of the entire result-oriented system of calculating the age-friendly initiatives of cities, but they can also be used to calculate political and social commitment, which can subsequently lead to new measures aimed at the development of sustainable age-friendly city policies.

### 3.2 Framework for selecting age-friendly city indicators

The general framework (see the set of indicators cited below) shows how certain resources and structures (*inputs*) enable interventions in the form of selected policies, services and programs (*outputs*), that help to increase the level of age-friendliness of the physical and social environment (*outcomes*), which also contribute to improving the health and well-being of older residents and the population as a whole (*impacts*). The cross-sectional principle of *equity* emphasizes the importance of ensuring equality in the distribution of all the monitored factors - inputs, outputs, results and impacts. The framework is based on scientific literature and it also reflects inputs obtained from expert consultations. Although the model does not assume specific causal associations, it considers logical interrelationships between key domains of urban life, the human aging process, and the physical and social environment as determinants of health and well-being. It also suggests that these are systemic and not isolated problems that require a multi-sector response or collaboration of government, private as well as civic organizations from all areas, as well as individual community members, to address issues that affect the entire community. This model provides a general framework for identifying different types of indicators that should be taken into account when developing a strategy for overall assessment and monitoring of a city's age-friendliness rate. The framework for selecting an age-friendly city indicators set was established in the following structure [23, pg.13]:

„INPUTS	OUTPUTS	OUTCOMES	IMPACT
Resources and structures which act as key enabling factors:	Interventions to create an age friendly environment:	Short/medium term changes achieved in creating age friendly environment:	Long term changes achieved as a result of improvements in an age friendly environment.
<ul style="list-style-type: none"> <li>▪ High-level political commitment</li> <li>▪ Collaboration of multiple stake holder groups</li> <li>▪ Shared ownership by older people</li> <li>▪ Financial and human resources</li> </ul>	<ul style="list-style-type: none"> <li>Physical environment:                             <ul style="list-style-type: none"> <li>▪ Planning and land use</li> <li>▪ Design of public spaces and buildings</li> </ul> </li> <li>Housing design and cost options                             <ul style="list-style-type: none"> <li>▪ Transporation design</li> </ul> </li> <li>Social environment:                             <ul style="list-style-type: none"> <li>▪ Culture and recreation programmes</li> <li>▪ Communication and advocacy</li> <li>▪ Health and social care services</li> <li>▪ Employment and business opportunities</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Physical environment:                             <ul style="list-style-type: none"> <li>▪ Walkability</li> <li>▪ Accessibility of public spaces, buildings and transport</li> </ul> </li> <li>Affordability of housing                             <ul style="list-style-type: none"> <li>▪ Safety</li> </ul> </li> <li>Social environment:                             <ul style="list-style-type: none"> <li>▪ Volunteer activity</li> <li>▪ Participation in decision making</li> <li>▪ Economic security</li> <li>▪ Positive social attitude towards ageing and older adults</li> </ul> </li> <li>▪ Accessible information and services</li> </ul>	<ul style="list-style-type: none"> <li>Health</li> <li>Wellbeing</li> </ul>
EQUITY →	EQUITY →	EQUITY →	

The manual emphasizes the possibilities of several strategic approaches when choosing a set of indicators. If the goal is to understand in detail the complex dynamics of aging in the urban environment as a complex phenomenon, it is possible to potentially measure all aspects using a large overview of indicators. However, if the goal is to focus only on certain dimensions of the mentioned framework (e.g. the use of a specific resource, the result of a specific intervention, etc.), it is possible to select only a few indicators focused on this specific aspect, while those that are relevant to other dimensions are excluded. Another approach would be to select several indicators that cross the entire framework vertically, horizontally, or both, to obtain a comprehensive yet more concise set of measures. Other variants of these approaches are also possible. Indicators can be defined as abbreviated indicators that describe a complex phenomenon, usually created by processing and simplifying a large amount of raw data obtained.

In general, a well-set parsimonious set of indicators is often preferred in practice because it has the advantage of efficiency and focus. This is particularly the case when the purpose of the indicators is to gain an overview of the situation and set strategic direction by key decision-makers or multistakeholders, or multisectoral groups.

While the categories of indicators are presented in the diagram in order from left to right, according to the logical flow of the diagram it is often useful to select the indicators in the opposite order - i.e. to start by identifying the indicators that correspond to the key expected impacts and outcomes of the initiative, and then retrospectively identify the output and input indicators that are most relevant.

In addition to the indicators that could be included in the basic set, the manual helps to compile other, additional sets of indicators that enable monitoring of activities at a lower level of decision-making or implementation. The manual describes each dimension of the framework in detail, provides specific examples of relevant indicators (both core and supplementary), potential data sources, and also important considerations on the reasons for including individual indicators in the set of local indicators.

In the final section, the guide presents five case studies taken from a pilot study that took place in 2014-2015. These are 1) Korogocho and Viwandani slums in Nairobi, Kenya; 2) Bilbao, Spain; 3) Banyule, Australia; 4) Jing'an District in Shanghai, China; and 5) Washington, DC, USA. In each example presented, the selection of indicators, definitions and methods of data collection was to a varying extent adapted to the unique local context.

The table of contents also concludes with a small selection of research publications from the past five years that provide technical information on some methodological approaches to measuring various dimensions of ageing, health and the human-friendly environment, from sample selection and study design to data collection tools and statistical analysis techniques.

## 4 Conclusion

As indicated by the facts presented in the article, the issue of society's reaction to the demographic trends of aging and shifting the retirement age has been receiving attention worldwide for a long time, with a reflection in the preparation of framework policies at the level of the UN and WHO. In the 50s of the last century, the scientific community in the field of gerontology was the first to open the agenda of senior-friendly approaches, pointing out the importance of supporting gerontological research in the field of biological, medical, behavioral and social policy and practice, training quality personnel in the field of aging, and defending the interests of gerontological organizations in international affairs. These impulses, initiated primarily by the *International Association of Gerontology* (IAG), stimulated the creation of other initiatives, including the creation of framework policies supporting the direction of cities towards spatial planning and development concepts that could be described as senior-friendly / age-friendly and are the subject of the article. The

article mainly maps key initiatives in the creation of framework policies aimed at helping cities and encouraging them to develop their own policies enabling the building of age-friendly environments and communities, as well as mutual exchange of experience or sharing of good practice examples in the international environment. It is mainly a WHO initiative called *Global Age Friendly Cities* and a related series of framework policies and action plans for active aging, especially the *Madrid International Plan of Action on Aging (MIPAA)*, which is still serving as one of the main framework management and guiding tools for the work of the United Nations Economic Commission for Europe (UNECE) in the field of aging. Equally important are the initiatives of establishing the world- wide organization named *Global Network of Age-friendly Cities and Communities (GNAFCC)*, or initiatives aimed at developing tools for measuring the level of active aging, such as *Active Aging Index*, and for measuring and evaluating the level of age-friendliness of cities - especially the WHO document *Measuring the Age-Friendliness of Cities manual. A Guide to Using Core Indicators* from 2015, which the article summarizes in its focus. The document is a valuable and in all aspects inspiring material, a handbook for all planners, urban development designers, city policy makers and other interested entities or stake holders dealing with the issue of finding an adequate and effective urban response to the burning issue of aging and urbanization.

The final premise for the next scientific discussion is based on the expectation that senior-friendly approaches in spatial planning not only primarily concern seniors, but they also naturally contribute to solutions that make life easier for other groups with specific needs, as well as for all other persons of social inclusion. This predisposes senior-friendly aspects to the potential to get to the core of the interest of spatial planning, since the application of senior-friendly approaches can ultimately benefit all social groups and communities, and thus society as a whole. For this reason - especially in the context of the inevitably converging trends of population aging and urbanization - it appears to be a useful recommendation of the authors to direct the attention of further research in the field of spatial planning to questions of the application of senior-friendly urban development concepts as a key aspect from which every further reasoning of spatial planners should develop.

## References

1. European Commission, Directorate-General for Economic and Financial Affairs. *The 2021 ageing report: economic & budgetary projections for the EU Member States (2019-2070)*. Publications Office (2021). Available from: <https://data.europa.eu/doi/10.2765/84455> [cited 10 Feb. 2023]
2. Finnish Centre for Pensions. *Retirement ages*. Available from : <https://www.etk.fi/en/work-and-pensions-abroad/international-comparisons/retirement-ages/> [cited 10 Feb. 2023]
3. D. Amaglobeli, H. Chai, E. Dabla-Norris, K. Dybczak, M. Soto, A. F. Tieman. *The Future of Saving: The Role of Pension System Design in an Aging World*. International Monetary Fund (2019). ISBN/ISSN 9781484388990/2617-6750. Available from : <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2019/01/09/The-Future-of-Saving-The-Role-of-Pension-System-Design-in-an-Aging-World-45138> [cited 25 Mar. 2023].
4. United Nations. *Decade of Healthy Ageing*. Available from: <https://www.decadeofhealthyageing.org/> [cited 10 Feb. 2023]
5. United Nations. *Sustainable development Goals*. Available from: <https://www.un.org/sustainabledevelopment/development-agenda/>; <https://sdgs.un.org/goals> [cited 10 Feb. 2023]

6. International Association of Gerontology. *IAG official websites*. Available from: <https://www.sfu.ca/iag/about/index.htm> [cited 18 Feb. 2023].
7. N. Sayeg. *Online invitation*. XVIII IAGG World Congress of Gerontology and Geriatrics in Rio de Janeiro official website (2005). Available from: <https://www.j-alz.com/links/worldcongress2005.htm> [cited 18 Feb. 2023].
8. World Health Organization. *Global Age-friendly Cities: A Guide* (2007). ISBN 978 92 41547307 Available from: [https://apps.who.int/iris/bitstream/handle/10665/43755/9789241547307\\_eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/43755/9789241547307_eng.pdf?sequence=1&isAllowed=y) [cited 18 Feb. 2023].
9. United Nations. *Report of the World Assembly on Aging* (1982). Available from: <https://www.un.org/esa/socdev/ageing/documents/Resources/VIPEE-English.pdf> [cited 18 Feb. 2023].
10. World Health Organization. *Active Ageing: A Policy Framework, No. WHO/NMH/NPH/02.8; 2002*. (2002). Available from: <https://apps.who.int/iris/handle/10665/67215> [cited 18 Feb. 2023].
11. United Nations. *Report of the Second World Assembly on Ageing* (2002). ISBN 92-1-130221-8. Available from: <https://unece.org/DAM/pau/MIPAA.pdf> [cited 18 Feb. 2023].
12. UNECE. MIPAA: The Madrid International Plan of Action on Ageing; MIPAA/RIS : The Regional Implementation Strategy for MIPAA for the UNECE Region (2002). Online. Available from: <https://unece.org/population/ageing/mipaaris> [cited 25 Mar. 2023].
13. United Nations. *Resolution A/RES/46/91 - The United Nations Principles for Older Persons* (1991). Available from : <http://www.un-documents.net/pop.htm> [cited 26 Apr. 2023].
14. World Health Organization. *The WHO Age-Friendly Cities Framework*. Online. Available from: <https://extranet.who.int/agefriendlyworld/age-friendly-cities-framework/> [cited 18 Feb. 2023].
15. The Geneva Cities Hub. *The WHO Global Network of Age-friendly Cities and Communities (GNAFCC)*. Online. Available from: <https://www.genevacitieshub.org/en/who-global-network-for-age-friendly-cities- and-communities/> [cited 18 Feb. 2023].
16. 1<sup>st</sup> Conference on Age-friendly Cities, Dublin, Ireland. *The Dublin Declaration of Age-Friendly Cities and Communities* (2011). Available from : [https://extranet.who.int/agefriendlyworld/wp-content/uploads/2022/10/Dublin\\_Declaration-2011.pdf](https://extranet.who.int/agefriendlyworld/wp-content/uploads/2022/10/Dublin_Declaration-2011.pdf) [cited 18 Feb. 2023].
17. 2<sup>nd</sup> Conference on Age-friendly Cities, Quebec City, Canada. Online (2013). Available from: [https://www.afc2013.ca/177/conference\\_program.html](https://www.afc2013.ca/177/conference_program.html) [cited 18 Feb. 2023].
18. Z. Asghar, K. Gasior, M. Hofmarcher-Holzhaecker, O. Lelkes, B. Marin, R. Rodrigues, A. Schmidt, P. Vanhuysse, E. Zolyomi. *Active Ageing Index 2012 Concept, Methodology and Final Results*. European Centre Vienna (2013). Available from: [https://www.researchgate.net/publication/256008735\\_Project\\_'Active\\_Ageing\\_Index\\_AI'\\_Active\\_Ageing\\_In dex\\_2012\\_Concept\\_Methodology\\_and\\_Final\\_Results](https://www.researchgate.net/publication/256008735_Project_'Active_Ageing_Index_AI'_Active_Ageing_In dex_2012_Concept_Methodology_and_Final_Results) [cited 25 Mar. 2023].
19. DECISION No 940/2011/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 September 2011 on the European Year for Active Ageing and Solidarity between Generations (2012). Available from : [9](https://eur-</a></li></ol></div><div data-bbox=)

- lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:246:0005:0010:EN:PDF, [cited 25 Mar. 2023].
20. J. Tymowski. *European Year for Active Ageing and Solidarity between Generations (2012) – In depth analysis*. European Parliamentary Research Service (2015). ISBN 978-92-823- 6668-4. Available from : [https://www.europarl.europa.eu/RegData/etudes/IDAN/2015/536344/EPRS\\_IDA\(2015\)536344\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2015/536344/EPRS_IDA(2015)536344_EN.pdf), [cited 25 Mar. 2023].
  21. Human Development Reports. *Human Development Index*. United Nations Development Programme (2023). Available from: <https://hdr.undp.org/data-center/human-development-index#/indicies/HDI> [cited 25 Mar. 2023].
  22. United Nations Economic Commission for Europe (UNECE) and the European Commission’s Directorate General for Employment, Social Affairs and Inclusion (DG EMPL). *Active Ageing Index (AAI) in non-EU Countries and at Subnational Level. Guidelines* (2018). Available from: [https://unece.org/DAM/pau/age/Active\\_Ageing\\_Index/AAI\\_Guidelines\\_final.pdf](https://unece.org/DAM/pau/age/Active_Ageing_Index/AAI_Guidelines_final.pdf) [cited 25 Mar. 2023].
  23. World Health Organization. *World report on ageing and health* (2015). Available from: <https://apps.who.int/iris/handle/10665/186463> [cited 18 Feb. 2023].
  24. World Health Organisation. *Measuring the age-friendliness of cities: a guide to using core indicators*. (2015). ISBN 978924 1509695. Available from: [https://apps.who.int/iris/bitstream/handle/10665/203830/9789241509695\\_eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/203830/9789241509695_eng.pdf) [cited 25 Mar. 2023]