Decade of healthy ageing

CONNECTION SERIES: 3

The UN Decade of Healthy Ageing 2021-2030 in a Climate-changing World

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In periodic, themed advocacy papers, this Decade Connection Series is intended to strengthen understanding of the links between the *United Nations [UN] Decade of Healthy Ageing* 2021-2030 and cross-cutting global issues.

On 16 December 2020, the member States of the United Nations [UN] systems proclaimed 2021-2030 as the UN Decade of Healthy Ageing [General Assembly Resolution 75/131], following endorsement of a proposal by the Seventy-third World Health Assembly on 3 August 2020. The UN Decade of Healthy Ageing is aligned with the 2030 Agenda for Sustainable Development and its call to leave no one behind. It builds on and complements the Madrid International Plan of Action on Ageing [MIPAA] of 2002.

A plan for the UN Decade of Healthy Ageing *[hereafter called the Decade]* includes **a collaborative voluntary work programme** for use by governments and other stakeholders, as appropriate, and is intended to be a living document.

The **vision** of the Decade is a world in which all people live longer, healthier lives. It is intended to be a global collaboration, bringing together diverse sectors and stakeholders in governments, civil society, international organizations, professionals, academic, media and the private sector.

The Decade's **four Action Areas** are:

- changing how we think, feel and act towards age and ageing;
- developing communities in ways that foster the abilities of older people;
- delivering person-centred integrated care and primary health services responsive to older people; and
- providing older people access to long-term care if they need it.

The target readership for the advocacy briefs in the Decade Connection Series includes leaders and influencers in Member States, the UN system [particularly UN country teams], international organizations and civil society networks.

In our fast-changing, complex world, the Decade must remain relevant, agile, country-focused and person-centred. We hope that the briefs in the Series will help stakeholders to reflect on current and emerging global cross-cutting issues and their implications for ageing. Readers are encouraged to find out more by exploring the Decade platform and WHO's Decade baseline report [2020].

WHO defines "**healthy ageing**" as "**the process of developing and maintaining the functional ability that enables well-being in older age**".

"Functional ability" consists of the capabilities that enable all people to be and do what they have reason to value. This includes a person's ability to: meet their basic needs; learn, grow and make decisions; be mobile; build and maintain relationships; and contribute to society. Functional ability is made up of the intrinsic capacity of the individual, relevant environmental characteristics, and the interactions between the individual and these characteristics.

Please send any feedback on this advocacy brief to:
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For more information on the Decade, please visit:
https://www.decadeofhealthyageing.org and
https://www.who.int/initiatives/decade-of-healthy-ageing

The UN Decade of Healthy Ageing in a Climate-changing World

This brief presents the case for taking new opportunities to **make connections among climate change, healthy ageing and older people in the context of the Decade**. The first section provides the context and key messages, while the second looks at each of the four action areas and their enablers in more detail.

Humanity is now up against, and crossing, planetary boundaries. Human activities and influence have unequivocally warmed the atmosphere, the oceans and the land *[1]*, increased the frequency, duration and magnitude of many weather and climate extremes, such as heatwaves, precipitation, droughts and tropical cyclones. Global warming of 2° C caused by emissions of CO_2 and other greenhouse gases will be exceeded during the 21st century *[2]*. There are increasing, concerted calls for emergency action *[3,4]* to limit global temperature rises, halt the destruction of Nature and restore biodiversity *[5]*. Air pollution, extreme weather events and food insecurity are already harming health. Without rapid, large reductions in emissions, climate change will become the leading global risk factor for excess mortality and a threat to human physical and mental health and well-being *[6–8]*, including for older people. **Healthy ageing and healthy longevity *[9]* for most people – now and in the future – will not be possible without a healthy planet.**

Key messages:

1. **Climate change and rapid population ageing are occurring together**. Their combined effects on the health and well-being of older people – those now and in the future – will have to be much better understood and addressed urgently by policy-makers and planners everywhere.
2. **Older people have been neglected** in studies of climate change *[10]*, and the neglect should be redressed in the context of the megatrend of rapid population ageing everywhere.
3. **Older people are agents of change in actions for the climate** and for the social transformations necessary to adapt to, mitigate and build resilience to different climate change scenarios.
4. **Although older people are a widely diverse group, many are disproportionately affected by climate change** because of their greater physiological susceptibility, pre-existing health conditions, disability and social vulnerability, particularly when they live alone or in poor urban areas and are less capable of responding *[11]*.
5. **Older people must be protected from climate-related threats.** This must be built into multisectoral policy and programme actions in cities and communities and across systems, with greener environments, less air pollution, adapted housing and health services, more sustainable food systems for healthier diets and health promotion for well-being *[12]*.
6. **The United Nations Framework Convention on Climate Change (UNFCCC)** and the **Conferences of the Parties to the Convention (COPs) *[13]* are opportunities to consider healthy ageing** throughout the life-course in the communities most affected by climate change. The **health programme of the COPs** and other UNFCCC mechanisms can increase the visibility of older people and provide opportunities to advocate for the Decade's priorities.
7. **The Decade offers new opportunities for collaborative, multistakeholder actions** at community, national and global levels by making healthy ageing a pillar of plans for climate resilience.
8. **The next 10 years will be critical** for the agendas of both climate change and healthy ageing. Stakeholders in both agendas must understand the interconnections and find ways to amplify and reinforce them mutually for the benefit of people in the second half of their lives now, for future generations and for planet Earth, our home.

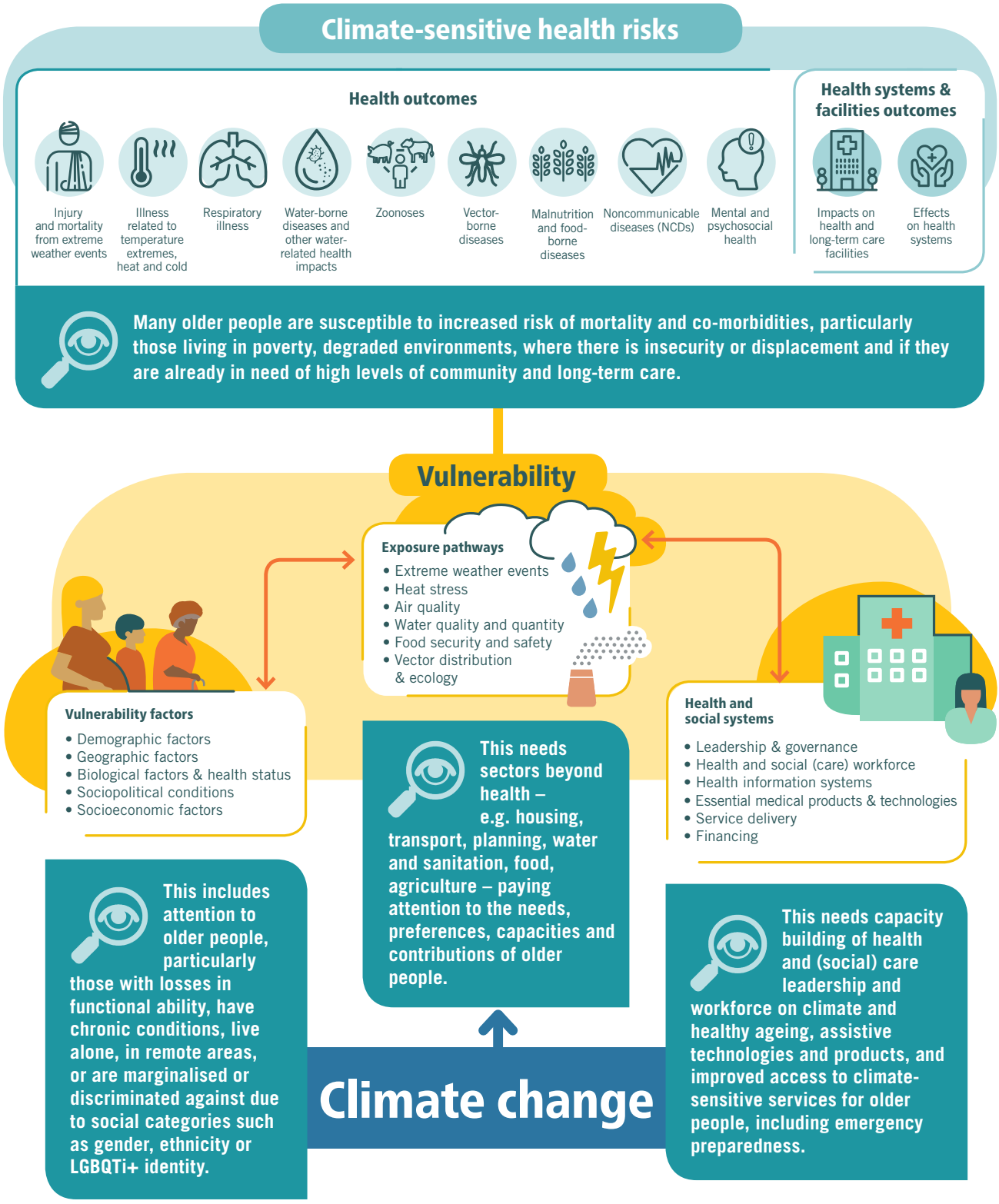
How climate change affects the health and well-being of older people

Many of the impacts of climate change on the health of different population groups are under-assessed, based on outdated studies and comprise a small portion of the overall impacts that are used in models of climate change. The Table and Figure below summarize known effects of climate change on health that are strongly mediated by environmental, social and public health determinants.

Threats related to climate change and their impacts on the health and well-being of older people

Threat	Impact on older people
Extreme and prolonged heat or cold	Weather patterns are anticipated to become more variable, with increasing average global temperatures. Extreme heat makes it difficult for humans to thermoregulate themselves, causing ill health through dehydration and cardiovascular strain, as well as increasing the risk for death *[14]*. Older people are much more susceptible to heat stress than younger adults because of their lowered adaptability, such as less sweating capacity, reduced skin blood flow and smaller increase in cardiac output *[8,15]*. The risk of heat-related illness can be further compounded by use of certain prescription medicines. Furthermore, excess morbidity and mortality due to cardiovascular, respiratory, cerebrovascular and all causes occur during cold weather periods. Epidemiological studies indicate that the populations most vulnerable to variations in cold winter weather are older people, rural residents and, generally, populations living in moderate winter climates *[16]*. European data showed that, among people aged over 65 years, 11.8% reported in 2014 that they could not keep their home adequately warm *[17]* and 16.6% reported in 2016 that they could not keep their home comfortably cool during hot summers *[18]*. Older people with other health conditions are more vulnerable to both heat and cold stress, particularly those living in poor, overcrowded urban areas.
Air pollution	Air is polluted mainly by burning fossil fuels, a major driver of climate change. Over 90% of the world's population breathe in unhealthy levels of air pollution *[6]*. Combinations of heat, varying temperature, poor air quality and pollution exacerbate poor health in older people, particularly from cardiovascular and respiratory diseases *[19]*.
Rising sea levels and extreme weather events [storms, typhoons, hurricanes]	These events cause floods, stormwater surges and contamination of drinking-water supplies. Older people who are already in poor health, with reduced mobility [impeding rapid evacuation], hearing or sight or living in nursing homes or care facilities, are more likely to suffer severe physical and mental health consequences *[20]* such as post-traumatic stress disorder, depression and anxiety *[21]*, and are at increased risk of mortality from such events. Poor older people tend to live in areas with scarce or contaminated water supplies and have higher risks of contracting gastrointestinal illnesses *[22]*. Climate events can also disconnect older people from health and social support. They may be unable to adapt appropriately in emergencies and to cope after climate-related events *[23]*.
Vector-borne and zoonotic diseases: changes in range, population density and life cycles *[24]*	Older people tend to have weaker immune systems potentially posing greater risk of severe infection with neurological involvement *[25]*.

Overview of climate-sensitive health risks, their exposure pathways and vulnerability factors, including for older people



Adapted from Figure 1 published in: WHO, 2021. COP26 Special Report on Climate Change and Health: The Health Argument for Climate Action. Geneva.

Climate change in an ageing world

In the next three decades, the numbers of people worldwide over 60 years of age will more than double – from 1.1 billion in 2021 to nearly 2.1 billion by 2050. The number of older people will also increase as a proportion of the total population, reaching over 21% by 2050, with more than two thirds living in low- and middle-income countries where climate-related disasters are more likely *[26]*. Furthermore, more older people are living alone as family support patterns change *[27]*, with implications for access to long-term health and social care, both in the community and in dedicated facilities.

In the context of the Decade, the following **gaps, opportunities and actions** are noted for synergistic progress:

Gaps

- The COP26 Glasgow Climate Pact *[29]* mentions children, youth, women, people with disabilities and indigenous people, but not older people, even though they are disproportionately impacted by climate change threats. Lessons can be learnt from the attention paid to children *[30]* such as UNICEF's child-focused climate risk index *[31]*.
- Mechanisms for funding actions against climate change, including the Green Climate Fund, lack earmarked resources for work on healthy ageing and older people.

Opportunities

- The principles of the protection of human rights including the right to health are clearly stated in the COP26 Glasgow Declaration and the Decade plan and can be leveraged to advance both connected agendas.
- The Sixth Intergovernmental Panel on Climate Change [IPCC] Assessment Report 2021 *[2,32]* highlights links between the natural world and humans, including the determinants of their health and well-being. The topics include the impacts of climate change on ecosystems and biodiversity, pandemics, food systems and nutrition, changing community structures and adaptation options and limits. These are all relevant to older people everywhere.
- The UNFCCC processes and COPs provide new opportunities for stakeholders active in healthy ageing to advocate for healthy ageing, with the Decade plan as a pillar in national climate resilience plans and for use in negotiations. It is vital that COP27, subsequent COPs and the national plans, strategies and commitments to climate adaptation, mitigation and resilience that arise from them include the health and well-being of ageing populations in both the short and longer terms and harness all the opportunities and collaborations offered by the Decade.
- "Nationally determined contributions", in which countries set the actions they will take in a 5-year cycle to reduce their greenhouse gas emissions to reach the goals of the Paris agreement *[33]*, should include reference to ageing populations, older people and systems to foster healthy ageing.
- Strategic political mechanisms can champion connections between climate change and the Decade plan. These include: the UN Post-2020 Global Diversity Framework *[34]*, the New Urban Agenda *[35]*, the Groups of Twenty [G20] and Seven [G7] and regional development cooperation organizations.
- Designation of country focal points in ministries of health and stakeholder mechanisms on health and climate change *[36]* can be leveraged for healthy ageing and the Decade.
- The new Geneva Charter for Well-Being *[12]* calls for the application of bold policies and transformative approaches that include "a commitment to sustainable low carbon development grounded in reciprocity and respect between humans and making peace with nature". Its five health promotion action areas for creating well-being societies are all relevant to healthy ageing and older people everywhere and can also be leveraged.

The Table below lists the recommendations of the recent WHO Special report on Climate Change and Health released for COP26 *[28]* and suggests opportunities for each of the four Decade Action Areas to contribute.

	Recommendations from WHO's COP26 Special Report – in brief	Combat ageism	Age-friendly communities	Integrated PHC	Long-term care
1	Commit to a healthy, green and just recovery from COVID-19.	✓	✓	✓	✓
2	Our health is not negotiable. Place health and social justice at the heart of climate talks.	✓	✓	✓	✓
3	Harness the health benefits of climate action, prioritising climate interventions with the largest health, social and economic gains.		✓	✓	✓
4	Build climate-resilient and environmentally sustainable health systems and facilities, and support health adaptation and resilience across sectors.		✓	✓	✓
5	Create energy systems that protect and improve climate and health, with a just and inclusive transition to renewable energy.	✓	✓	✓	✓
6	Reimagine urban environments, transport and mobility, with improved land-use, access to green and blue public space, and priority for walking, cycling and public transport.		✓	✓	✓
7	Protect and restore Nature as the foundation of healthy lives.		✓		
8	Promote sustainable and resilient food systems and affordable, nutritious diets that deliver on climate and health outcomes.		✓	✓	✓
9	Finance a healthier, fairer and greener future. Transition towards a well-being economy".	✓	✓	✓	✓
10	Listen to the health community on prescribing climate action.			✓	✓

Key actions

- In COP sessions on health, increase the visibility of and references to healthy ageing, the Decade and older people in debates and solutions in a climate-changing world.
- Strengthen the narrative of older people as agents of change, community leaders and influences on climate action, beyond a narrative focused on their needs and vulnerability. Many older people are engaged in climate actions at local, national and global levels, alongside younger people.
- Consider older people, particularly indigenous elders, as keepers of knowledge that is vital for climate change actions, ecosystem and biodiversity restoration and management and living healthily and sustainably within planetary boundaries.
- Mainstream healthy ageing into national health and climate change plans and strategies, assessments of vulnerability and adaptation and early warning systems. Ensure that older groups are included, and emphasize their protection from climate-related challenges and extreme hazards, ensuring that all relevant information for them is contextualized, available and accessible.
- Invest in healthy ageing in all the Decade's actions and enablers and enablers, including healthy, green recovery from COVID-19, to contribute to climate mitigation, adaptation and resilience.
- Build capacity and awareness about the links between climate change, older people and healthy ageing, and strengthen alliances *[37]* among: the formal and informal health and social care workforce; scientists, advocates, practitioners and service providers in all relevant sectors [health, urban planning, community development, transport, infrastructure, housing, energy, water and sanitation, education and lifelong learning]; and climate change professionals, researchers and activists.

Below, the second part of this brief explores in detail the links between each of the Decade's action areas and climate change and provides examples of what can be done.

1. Changing how we think, feel and act towards age and ageing

What this means	Ageism *[38]* refers to the stereotypes [how we think], prejudice [how we feel] and discrimination [how we act] towards others or oneself on the basis of age. Ageism affects people of all ages but has particularly deleterious effects on older people.
Links to climate change	Regardless of age, everyone has the right to a healthy environment, free of pollution and its harmful consequences. The desire to live on a safe, sustainable planet does not diminish with age. Older people are particularly susceptible to some of the physical and mental health impacts of climate change, such as exposure to extreme heat *[39]* and other extreme weather events, especially those requiring urgent evacuation *[40]*. The most vulnerable older people are those with disabilities and/or chronic medical conditions and those living alone or in nursing homes or care facilities, particularly if they are poor, undernourished and lack resources. The role of ageism in these disproportionate impacts of climate change has not been well studied. As seen during the COVID-19 pandemic, public health emergencies can exacerbate the risks of many older people for discrimination, exclusion and violence *[41,42]*. The Global report on ageism *[38]* provides evidence of the neglect of older people during natural disasters and conflict-related emergencies. Although older people make up a large and increasing number of those affected by emergencies, including climate-induced natural disasters, there is little funding and few projects targeting older people, or their inclusion with other vulnerable groups. Age can intersect with other socio-demographic characteristics, such as gender, disability, socioeconomic status, ethnicity and indigeneity, and related "isms", which in turn are associated with barriers to accessing information, care and support. These barriers existed before COVID-19 *[43]* and before the climate crisis. Systems, infrastructure and services are often set up for preferential access by people who are highly mobile and intrinsically capable rather than those who have declining functional ability, frailty, sensory impairment, disabilities and/or chronic diseases. The threats and hazards associated with climate change can exacerbate such situations. Ageism can be present in public discourse and on social media *[38]*, including that related to climate change. There is a misconception that older people are less engaged, vote less for movements promoting climate action and are "a cause" of the climate crisis. Around the world, many older people in climate-vulnerable indigenous communities and other communities in forests, coastal areas or river basins and small island developing states, for example, are actively involved in promoting action on climate. They are well placed to mobilize their communities to call on political leaders to respond to the climate crisis. They hold diverse experiences and knowledge acquired throughout their lives and passed down in stories of how climate change affects their local ecosystems, biodiversity, and communities and how things have changed over time.

Examples of what can be done

The Decade provides an opportunity to raise awareness of the rights and needs of older people in the face of growing global environmental threats, including climate change and biodiversity loss.

As in all emergencies, it is critical to combat stereotypes, prejudice and discrimination in all forms, including ageism as it affects different age groups and in different settings, including in long term care *[44]*. Global, regional and national responses to climate change should ensure that attention is paid to older people and avoid institutional and interpersonal discrimination according to age. Age intersects with other social categories with respect to inequity, such as disability, ethnicity, indigenous status and gender, and the associated, compounding discrimination should be addressed.

Policy and law and interventions for education, human resources, advocacy and communications could be guided by the reports of the Independent Expert on the enjoyment of all human rights by older persons *[45]* and the evidence-based recommendations of the Global report on ageism.

The Decade provides an opportunity to highlight how people in the second half of their lives can be part of solutions to climate change, such as local and national initiatives for small-scale decarbonization *[46]*. Communication approaches to change social and individual behaviour by influencing knowledge, attitudes, practices and social norms should be widened. Stories and powerful human-interest narratives can be persuasive for decision-makers. Strong intergenerational communication, collaboration and solidarity will be necessary, including older people and supporting them in engaging in climate actions *[47]*, rather than pitting generations against each other.

2. Developing communities in ways that foster the abilities of older people

What this means	Age-friendly communities are physical, social, and economic environments, both urban and rural, that enable older people with a wide range of capacities to: age safely in a place that is right for them; be included and participate; develop personally and professionally; and contribute to their communities while retaining their autonomy, dignity, and health and well-being.
Links to climate change	The physical environments and social and economic contexts of our cities and communities are being affected by climate change. Although the burden of temperature-associated mortality may shift towards high temperatures in the future, cold temperatures represent a greater everyday problem in cities in temperate climates *[48]*. The projected rapid growth in the number of older people in a world of climate change and urbanization presents a high risk to human health *[49]*, to ageing safely and to fostering age-friendly cities and communities with the necessary responses of public service systems *[50]*. As many older people are particularly susceptible to heat-related stress, the effects of heat extremes should be mitigated. This can be done by setting aside green spaces, which contribute to overall population health and well-being by reducing air pollution, providing recreational spaces for physical activity and social contact and connecting people to nature in islands of biodiversity *[51]*. Increased availability of green spaces has been associated with lowered diastolic blood pressure, salivary cortisol and heart rate and lower incidences of diabetes, all-cause and cardiovascular mortality *[52–56]*. A few studies of older populations show that long-term exposure to good-quality green spaces is associated with a number of positive health outcomes, including more physical activity *[57]*, slowing cognitive decline *[58–60]*, better general health, more life satisfaction and less stress *[61–63]*. Urban gardens and horticulture have been shown to benefit health in people with various conditions and mental disorders *[64–67]*, including slower declines in walking speed, cardiovascular disease risk, cognitive decline, inflammation and stress and improved social connectedness *[55, 68–71]*. These contribute to age-friendly communities where older people participate, develop personally and professionally and retain their autonomy, dignity and well-being. Many older people in rural areas are actively engaged in agriculture, aquaculture and forestry for food, medicinal plants and other products, as well as income. Degraded ecosystems and biodiversity loss significantly affect these activities, undermining their ability to age safely, retain their autonomy and health and continue to contribute. Indigenous older people and those living in small island developing states, coastal and riverine regions, forests, deserts, mountains and polar regions are the most severely affected *[72]*.
Examples of what can be done	The Decade offers new opportunities for strengthening the benefits of age-friendly environments for the climate and health, guided by the Paris Agreement *[33]*, the UNFCCC, its COPs *[13]* and its working group reports *[2]*, the Sustainable Development Goals *[73]*, the UN Decade on Ecosystem Restoration *[74]*, the World Report on Ageing and Health *[75]* and the WHO global strategy on health, environment, and climate change *[76]*. Relevant guidance includes WHO air quality guidelines *[77]*, *The Lancet*'s Heat and Health Series *[15]* [which presents effective measures to prevent and respond to heat extremes], WHO's Housing and health guidelines *[78]* and the Compendium on health and environment by WHO and other UN agencies *[72]*. Building on the WHO Age-friendly Cities Framework *[79]*, the Global Age-friendly Cities Guide *[80]* cites eight interconnected domains for identifying and addressing barriers to the well-being and participation of older people, including transport, housing and outdoor spaces. Adaptation of transport technology [e.g., the National Health Service in the United Kingdom is changing to zero-emission vehicles, including a hydrogen-powered ambulance fleet introduced at COP26 *[81]*] and networks to reduce anthropogenic heat should include consideration of use by older people *[13]*.

Housing and private and public buildings and institutions, including health and social care facilities, must be accessible and be better designed, with materials and sustainable energy efficiency for cooling and insulation as necessary and reducing energy demand for cooling and heating *[72]*. Ensuring good-quality, energy-efficient housing throughout the social gradient should be a priority in both new housing developments and refurbishment of older housing stock, as older people are often affected and the oldest of old age groups at higher risks of adverse health effects *[82]*.

Urban and city planners, architects and engineers are identifying climate-adaptive, nature-based solutions for green [land with vegetation] and blue [visible water] spaces that have important benefits for people and biodiversity in cities. The solutions include increasing the numbers of parks, tree-lined streets and paths, urban gardens and green roofs and building facades *[83]*, which will help to mitigate the urban heat effect, prevent heat stress, support carbon capture, accelerate water drainage, reduce noise pollution, improve air quality, reduce energy demand for cooling and improve mobility linked to public networks *[84–87]*. If these initiatives also address physical accessibility, adequate seating, lighting and toilets, older people are also likely to benefit.

Emerging programmes for recovery from COVID-19 *[88]* offer new opportunities to recalibrate the relation between cities and ageing populations, including addressing their specific needs, vulnerability and preferences. Age-friendly cities and communities must have comprehensive, inclusive plans for climate change preparedness, mitigation and adaptation [e.g., *89,90*]. This will require collaboration beyond the environment and health sectors to include infrastructure, employment, education, social protection, housing, energy and transport, especially in cities with high densities of older people and in small island developing states *[91]*. Older people should also be included in all assessments of vulnerability and adaptation to climate change *[92]*, heat mapping surveys, awareness and prevention programmes for heat and cold waves, heat waves *[93]* and flooding early warning systems and evacuation routes, and disaster risk reduction and preparedness for extreme weather events *[22]*.

3. Delivering person-centred integrated care and primary health services responsive to older people

What this means	Primary health care [PHC][1] is the most effective, efficient approach for enhancing the physical and mental capacity and well-being of individuals of all ages and capacities *[94]*. Person-centred PHC with community partners should be integrated in all settings and levels, including for clinical management, and linked to long-term and specialized care.
Links to climate change	As demonstrated by the COVID-19 pandemic, health systems are the main line of defence against global health threats *[95]*. In the climate crisis, to protect health and avoid widening health inequities, countries must urgently build climate-resilient health systems, with access by all throughout the life course, including older people, some of whom are particularly susceptible to climate-related threats, as described above. Older people are major consumers of health and social care, but many have limited access to services, often as a symptom of wider health and social inequity. This may reduce their capacity to cope with climate-sensitive diseases and stress. Ensuring universal health coverage for everyone in well-resourced, equitable health systems is essential to protect the public from the short- and long-term health threats posed by climate change. It is therefore a concern that less than 2% of multilateral climate financing is for health projects, infrastructure and other costs of PHC *[6]*, particularly in the context of population ageing. Climate-resilient, environmentally sustainable health-care facilities will increase the quality of care and access to services and, by reducing facility costs, will be more affordable *[68, 96]*. The health response to the climate crisis will be delivered mainly by PHC workers, particularly community health and social workers and volunteers, including many in the second half of their lives. Like others, they will themselves be affected by climate- and biodiversity-related threats, linked to housing, food security, exposure to extreme weather events and zoonotic, vector- and waterborne diseases *[97]*. Population displacement and migration are increasing throughout the world *[98]*, driven partly by climate change. Older people will be among those affected *[99]*, either as displaced people and migrants or as the many left behind, often in climate-vulnerable environments and with few resources and support or limited access to services *[100]*. In both origin and receiving countries, PHC will be required to plan for these scenarios, particularly for persons with underlying conditions or disabilities, unaccompanied older people and older people who are caring for others, with consideration of socio-cultural issues and language.
Examples of what can be done	In our unstable, climate-changing world, national and subnational health plans should be reviewed and revised *[101]* to ensure comprehensive, person-centred, integrated, targeted PHC that responds to the specific needs, susceptibilities and preferences of diverse older people, as laid out in the Global action plan for healthy lives and well-being for all *[102]*. The plans should foresee a variety of climate-related situations, such as prolonged, extreme heat waves, sudden floods or spikes in air pollution. Opportunities to promote and support older people's resilience to climate change should be identified, with various PHC interventions *[103]* and strong community engagement to ensure linkage and integration. PHC can also provide relevant health data, including on older people, that can be linked spatially to environmental data and thus strengthen response and preparedness for impacts of the environment on health *[104,105]*.

1. Non-discriminatory access to good-quality essential health services that include prevention, promotion, curative, rehabilitative, palliative, end-of-life care and safe, affordable, effective, good-quality essential medicines, vaccines, and health technologies, without causing the user undue financial hardship. It is the cornerstone of universal health coverage [UHC].

Resources for ensuring the capacity of health-care facilities to protect and improve individual and community health include WHO's operational framework for building climate-resilient health systems [2015] *[106]*, guidance for climate-resilient, environmentally sustainable health-care facilities [2020] *[107]* and the accompanying toolkit *[108]* and checklists for various climate-related hazards in order to assess susceptibility *[109]*.

Improving health-care facilities will require investment in carbon-neutral, climate-resilient systems that are responsive to older people when chronic and noncommunicable diseases, infectious diseases and psychological conditions are exacerbated by climate change *[22]*. It will require collaboration of sectors beyond health, including energy, technology [e.g., for air-conditioning], transport, water and sanitation and waste management *[72]*. It will also require the necessary budgetary allocations from climate finance.

The health programme agreed at COP26 *[28]* highlighted the importance of building climate-resilient, sustainable, low-carbon health systems that cater for all population groups; these will be particularly beneficial for many older people. Climate-aware professionals in adaptive health and social care can assist in reducing susceptibility to climate change in those whose health may be compromised by climate change, including those with conditions often associated with older age, and deliver health and care interventions that also address climate mitigation and adaptation issues *[110]*. In order to fill this role, health and social care providers should be actively engaged in making decisions on the climate crisis and leading by example. They should be trained in issues of climate change and health, including the effects on older people *[72]* and others, with preventive and promotive health measures to include nature conservation [such as healthy, diverse diets from sustainable food systems], integrated health services *[111]* and person-centred assessment and pathways in primary care, including the integrated care of older people [ICOPE] *[112]*. This role could mobilize a wide community of actors to increase awareness about nature's contribution to health and well-being locally, with the additional benefit of reducing health-care costs *[113, 114]*.

4. Providing older people who need it with access to long-term care (LTC)

What this means	People may reach a time in their lives when they need assistance to live independently or depend on support by carers. When people experience a significant decrease in physical and mental capacity, access to good-quality long-term care, including rehabilitation and palliative care, is essential to maintain their quality of life and functional ability and to enjoy their human rights and live with dignity. Long-term care requires aligned, coordinated health and social care systems to provide a continuum of care.
Links to climate change	Many threats and impacts of climate change on older people outlined in action areas 2 and 3 above are also relevant to fostering healthy ageing through provision of long-term care. Relatively little published research has specifically linked climate change to a requirement for long-term care, in the community or in a specialized facility. A paper in *The Lancet* on use of physiological evidence for determining public policy for heatwaves included older residents of care homes *[115]*, and it has been noted that older people in care usually have medical conditions and take medications that can reduce resilience to heat *[14, 116]*. A review of nursing care in several countries showed that older people living in nursing homes or care facilities are disproportionately vulnerable to the mental and physical health impacts of extreme events related to the climate crisis *[20]*. A recent blog of the experiences of members of the Canadian Frailty Network in coping with the COVID-19 pandemic suggested that many long-term care facilities and providers are unprepared for the climate crisis and its effects on the older people they look after *[117]*. For example, overheating in such a facility can compromise the care of residents during episodes of extreme heat *[118]*. Clothing is often chosen according to cultural norms or facility rather than for optimal heat loss. Emergencies such as floods and wildfires can disrupt health and social services in any country, including long-term care for older people in the community and support for their carers *[119]*. This raises challenges for the adaptive capacity of older people with disabilities, limited mobility or a neurodegenerative disease such as dementia, exacerbates their social isolation and nutrition and can affect the livelihoods of paid carers. As long-term care systems in most low- and middle-income countries are not well established or publicly funded *[120, 121]*, a significant proportion of care is provided by informal carers [families, unpaid workers] who are not adequately trained, including in climate-sensitive diseases and health risks, and they are rarely protected or properly covered for their own health or mental conditions, which may be exacerbated during and after disasters.
Examples of what can be done	WHO recently published its first framework on long-term care *[122]* which identifies key aspects necessary to achieve an integrated continuum of long-term care and facilitate the integration of long-term care services within existing health and social care systems. With the frequency of natural disasters set to escalate as a result of climate change, the time to prepare for those who need long-term care is now. Although long-term care facilities expend energy and contribute to greenhouse gas emissions, they generally consume less energy than large urban hospitals. Recommendations for climate-friendly hospitals *[116]* can also be applied to long-term care facilities. Given the wide variation in vulnerability of people living in care, lowering indoor temperatures should be a priority. For sustainable reductions in indoor temperature during extreme heat and hot weather in care homes, it is recommended that appropriate plans be drawn up for effective heat reduction and heat management adapted to local conditions; rooftop sprinklers, outdoor sunshades to protect common rooms and heat-reflective window glass be used; evaporative coolers be installed; and adequate natural ventilation be assured.

Other actions include: reducing energy consumption and costs through efficiency and conservation measures; building facilities adapted to local climatic conditions and optimized for reduced energy and resource demands; producing and/or consuming clean, renewable energy to ensure reliable, resilient operation; using alternative fuels for vehicle fleets; providing sustainably grown, local food for staff and residents and considering on-site biodiverse gardens; reducing, re-using, recycling, composting and using alternatives to waste incineration; and conserving and/or harvesting water and avoiding bottled water when safe alternatives exist.

For long-term care in communities and homes, professionals should inform caregivers and those responsible for particularly vulnerable older people of the risks and appropriate responses to heat waves. This should include recommendations for body cooling of older people, such as application of ice towels, minimizing clothing or wearing cotton clothing saturated with water *[123]*. Fans should be used only with application of water to the body at air temperatures > 38 °C because of lower sweating rates with advanced age *[115]*.

Formal and informal personnel who provide long-term care should have opportunities to increase their knowledge, capacity and skills with regard to aspects of climate change that affect older people. Informal carers should also have access to adapted, contextualized training and guidance in the community. Good emergency planning and training for staff will be necessary, including for sheltering in place, evacuation and communication with families. Emergency supplies such as medical supplies, back-up generators and food and water should be prepared and stocked for long-term care facilities, as in health facilities.

Implementation of the four action areas in the Decade will be supported by **four enablers:**

1

Listening to diverse voices and enabling meaningful engagement of older people, family members, care givers and communities:

Climate action cannot succeed without the engagement, empowerment, and capacity-building of older people *[46]*. Many have valuable roles in their families and communities because of their knowledge and experience in previous climate crises. Climate mitigation and adaptation strategies should include older people, maximize their capacities, address their susceptibilities and respect their rights. Participatory intergenerational approaches should be used and include the people at greatest risk of being left behind.

2

Nurturing leadership and building capacity at all levels to take appropriate action integrated across sectors:

Climate action everywhere requires political will and consensus through whole-of-government approaches to ensure policy coherence and effectiveness. Leaders and professionals working in healthy ageing should be made aware of the health and social costs of climate damage and the benefits that can be obtained. Training in climate change should include information on older people and healthy ageing in various settings and include adaptation, mitigation and resilience.

3

Connecting diverse stakeholders around the world to share and learn from the experience of others:

"It takes knowledge to transform the world to be a better place to grow older" *[124]*. On the Decade's knowledge platform, associations between healthy ageing and climate change can be made, and it can used by various stakeholders to disseminate evidence-based guidance, resources and best practices in integration of climate adaptation and mitigation policies into, for example, PHC systems and services.

4

Strengthening data, research, and innovation to accelerate implementation:

More trans-disciplinary, cross-sector research should be conducted on the impact of climate change, ecosystem degradation and biodiversity loss on people throughout their life-course, on healthy ageing and on the diversity and capacities of older people and of other vulnerable sub-populations. Age-disaggregated data should be provided on the effects of climate change on the health of diverse older people and on adaptation, mitigation and resilience.

Conclusion

This brief describes the connections between climate change and healthy ageing, framed as the four priority Action Areas of the Decade plan. Although the wealthiest countries and multinational corporations contribute most to global warming and to failure to limit a rise in global temperature above 1.5 °C, **people in all countries, of all ages, including older people, will have to take urgent action to meet climate goals**.

At COP26 in Glasgow, the Director-General of WHO, Dr Tedros Adhanom Ghebreyesus, urged the world to tackle the climate change crisis, restore biodiversity and protect health *[28]*. Although the task ahead is daunting, here is growing momentum for "legacy thinking" *[125]* and "being a good ancestor" *[126]*. The UN Secretary-General recently called for adopting the **"seven-generation principles"** used by some indigenous communities to make decisions, by remembering the knowledge of their great-grandparents while planning ahead in the best interests of their great-grandchildren *[127]*.

Making connections and finding synergies between climate change and healthy ageing and strengthening collaboration among all the stakeholders who should be involved could not be more urgent.

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