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POLICY BRIEF

Strengthening Health Systems in Sri Lanka: Current Socioeconomic Developments with Special Emphasis on Population Ageing, Climate Change, Disasters and Technological Advancements

Social Development Division

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Acronyms

GDP	gross domestic product
ICT	information communication technology
ILO	International Labour Organization
NCD	noncommunicable diseases
SDG	Sustainable Development Goals
SMS	short message services
TFR	total fertility rate
UHC	universal health coverage
UHC SCI	Universal Health Coverage Service Coverage Index

Abstract

Social development trends are invariably linked to achieving the Sustainable Development Goals (SDGs) by 2030. However, the SGDs will most likely not be achieved as expected in Asia and the Pacific, a region that faces many challenges, including demographic shifts, such as rapid population ageing. Sri Lanka, maintaining a robust public health system at a relatively low cost, is one of the countries in the region experiencing rapid population ageing. Given these demographic shifts, rising inequality, climate change, environmental disasters and rapid, but unequal, digitalization, the health system needs urgent reform to ensure all people have access to affordable and good quality healthcare. This paper explores the current situation, and ways forward to strengthen health systems in Sri Lanka in the context of population ageing, climate change, disaster preparedness and investing in technology solutions for health.

The analysis in the paper shows that, despite having a robust public health system and having achieved universal healthcare coverage long before many other countries, the Sri Lankan health system is only partially prepared to face the challenges outlined earlier. While political intentions and policy formulation to prepare for the next few decades are evident to some extent, realization of such intentions at the ground level shows many gaps and lapses in the implementation process. Coherent policy support across all sectors and intersectoral coordination of implementation plans are much needed for a more comprehensive, equitable and sustainable future of the country's health system.

Climate change impacts on all aspects of life are increasingly evident in Sri Lanka, as in other countries. These have unequal and profound effects on vulnerable segments of the community, emphasizing the need for ensuring gender and social inclusion in disaster risk reduction planning. It is also evident that, while the current health system is catering to requirements of the overall population to a large extent, many people, including older persons, have special service requirements that warrant urgent attention. Declining fertility and reversing the rise in the dependency ratio by having an older workforce, raise new challenges in maintaining or increasing productivity on the economic front. Anticipated changes in the labour market and increasing the retirement age call for new policies and legislation to protect older workers' rights. On a positive note, rapid development in the telecommunication sector during the last two decades has provided a strong foundation for the country to transform itself into a digital economy and utilize technology-based solutions to enhance health systems.

This paper proposes several recommendations to strengthen the health system to overcome the observed challenges, with particular attention to enhancing the health and well-being of older persons in the context of population ageing and the other changes noted above.

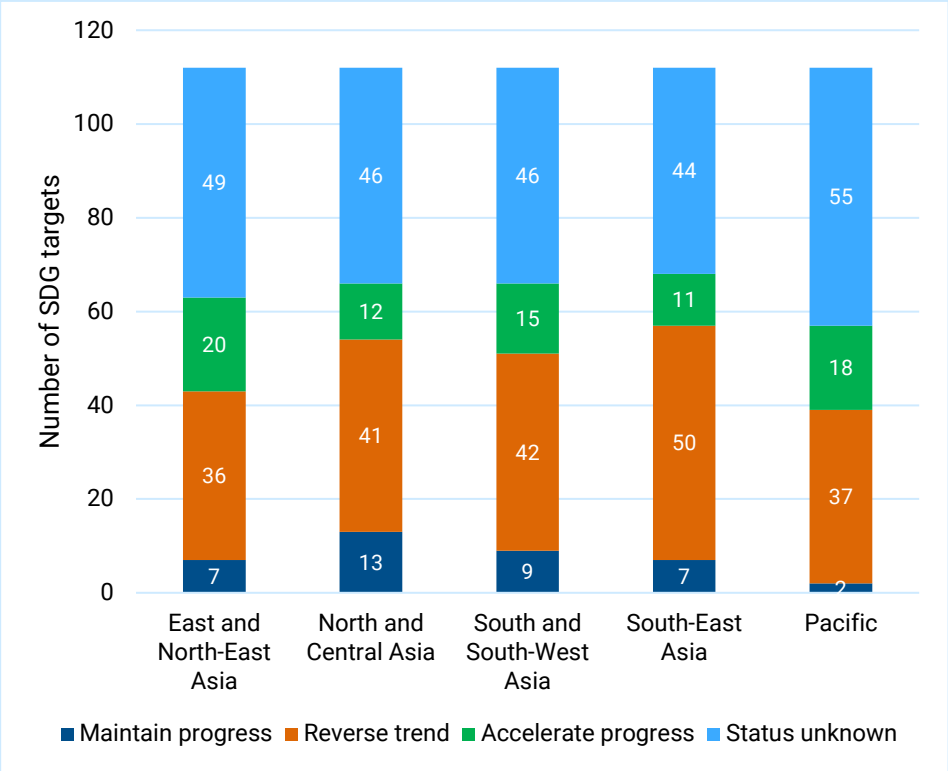
I. Introduction

Global and regional trends

Social development trends are invariably linked to achieving the Sustainable Development Goals (SDGs) by 2030. The current evidence suggests a high probability of the SGDs not been achieved as expected in Asia and the Pacific, with the region being on track to achieve only 11 per cent of the measurable targets. For example, SDG 3 on health and well-being, where rapid ageing is a crucial factor, will most likely not be achieved. This includes target 3.8 on achieving universal health coverage (UHC), where much more progress in the region is needed (ESCAP, 2024).

Household expenditures on health show a regressive trend, while action on noncommunicable diseases (NCDs), essential health coverage, health capacity and emergency preparedness show slow progress (figure 1). Increasing non-food expenditures at the household level, particularly healthcare costs, combined with a lack of social protection, means older persons often have to continue in economic activities away from home, where labour rights are not always respected. Women, who often experience a lifetime of inequalities and being left behind, including due to low labour force participation, are particularly affected. Compounding the challenges faced is a scarcity of data on many socioeconomic aspects.

Figure 1: Overview of progress made in social dimensions of the Sustainable Development Goals in the Asia-Pacific region, 2023



Source: ESCAP, 2024. Asia and the Pacific SDG progress report 2024: Showcasing transformative actions. United Nations.

Note: "Social dimensions" refers to SDG targets closely linked to social development. Numbers depicted in the figure refer to number of SDG targets.[1]

Population ageing in Asia and the Pacific, with longer life expectancy, is occurring at a rapid rate. By 2050, one in four people in the region are projected to be aged 60 or older, reaching close to 1.3 billion people. In some countries, such as China, Sri Lanka, Thailand and Viet Nam, this transition will happen very rapidly (ESCAP, 2024). Given the speed of ageing, many countries will not have sufficient time to adapt and put in place policies and programmes that address the challenges and opportunities of this regional megatrend. The impact of climate change and consequent disaster risk in the Asia-Pacific region will affect persons in vulnerable situations, including older persons, more than the general public (Asian Development Bank, 2024). This will add to social and economic costs, including in the context of healthcare, for individuals, countries and the region.

The health system in Sri Lanka

Sri Lanka has a pluralistic health system, comprising diverse providers of medicine, namely, western, traditional, ayurvedic, *Unani*, *Siddha*, homeopathic and Chinese medicine. Of these, the western (allopathic) medical system is the prominent care provider to the needs of the majority of the population. Health services provided by the Government of Sri Lanka are free of charge at the point of delivery to the patient. According to the Universal Health Coverage Service Coverage Index (UHC SCI), Sri Lanka has an index value of 66, which is 2 units below the global average but much higher than the Asia-Pacific regional average (World Bank and WHO, 2023). In this regard, Sri Lanka has often been cited as a good practice country in achieving UHC through a health system that is both pro-poor and efficient. A relatively high UHC SCI indicates good accessibility in general, though not specifically for older persons. For example, although there are sexual and reproductive health services targeting the 15—49 age group, currently there are no publicly-available service points or programmes in this regard for older persons.

Healthcare is decentralized to a large extent, with the central Ministry of Health being responsible for formulating health policies, setting standards and providing strategic directions for healthcare delivery in the country, as well as resource allocation, training and management of staff at all healthcare delivery agencies. As a result of decentralization, 9 Provincial Directorates of Health Services and 26 Regional Directorates of Health Services have been established since 1987. Each Regional Directorate of Health Services area is subdivided into Medical Officer of Health areas for the purpose of administration. Healthcare to all citizens is provided through an extensive network of institutions and, on average, a State healthcare centre is within 5 kilometres of a residence. Curative services are provided through a network of hospitals of different levels, while promotive and preventive services are provided through Medical Officer of Health areas catering to a captive population. In addition to state healthcare provision, the private for-profit sector provides services, albeit to a lesser extent (Ministry of Health, 2023a).

Financing for health comes from different sources, including government budgetary allocation, households, employers, insurance, and international and local donors. The Government utilizes general revenue to provide healthcare services. The funds meant for the central institutions are

[1] For definition: Weinberger, K., Han, A., Okada, S.C., Pasali, S.S., Urban, S. and Zhou, Z. (2025). Protecting Our Future Today: Social Protection in Asia and the Pacific. *Asia Pacific Sustainable Development Journal*, vol. 32, No. 1.

directly channelled through the budget of the Ministry of Health. Government funds for the provincial and local government institutions are usually channelled through the Finance Commission. In addition, the central Ministry of Health directly issues a considerable amount of funds to provincial-level institutions. Provincial and Local Governments also use funds generated by themselves to provide health services (Ministry of Health, 2022a).

Socioeconomic transition

Sri Lanka is undergoing a socioeconomic transition marked by both progress and challenges. While the country has seen improvements in its socioeconomic situation, particularly after the end of the civil conflict (2009), it also faces persistent issues related to macroeconomic stability, poverty and inequality, as well as the need for structural reforms and sustainable development. Although Sri Lanka is much better placed than most countries in the region in terms of literacy (97.4 per cent) and life expectancy at birth (78.0 years),[2] many inequalities persist. Growth of the economy was reversed following the COVID-19 pandemic and the financial crisis during the 2020—2024 period. Gross domestic product (GDP) growth fell from 6.5 per cent in 2017 to -7.3 per cent in 2022, then began recovering in 2023 to -2.3 per cent (Central Bank of Sri Lanka, 2024). In the first quarter of 2025, a growth rate of 4.8 per cent was recorded.[3]

Over the past decade, Sri Lanka has experienced significant political shifts and severe economic crises. The country's political landscape has been marked by challenges to democratic institutions, ethnic tensions and a struggle to balance economic stability with social welfare. Those challenges, crises and subsequent shifts of political dimensions in the country marked a major change in the national elections in 2024, which paved way for a new government, elected with a majority.

Demographic profile and changes

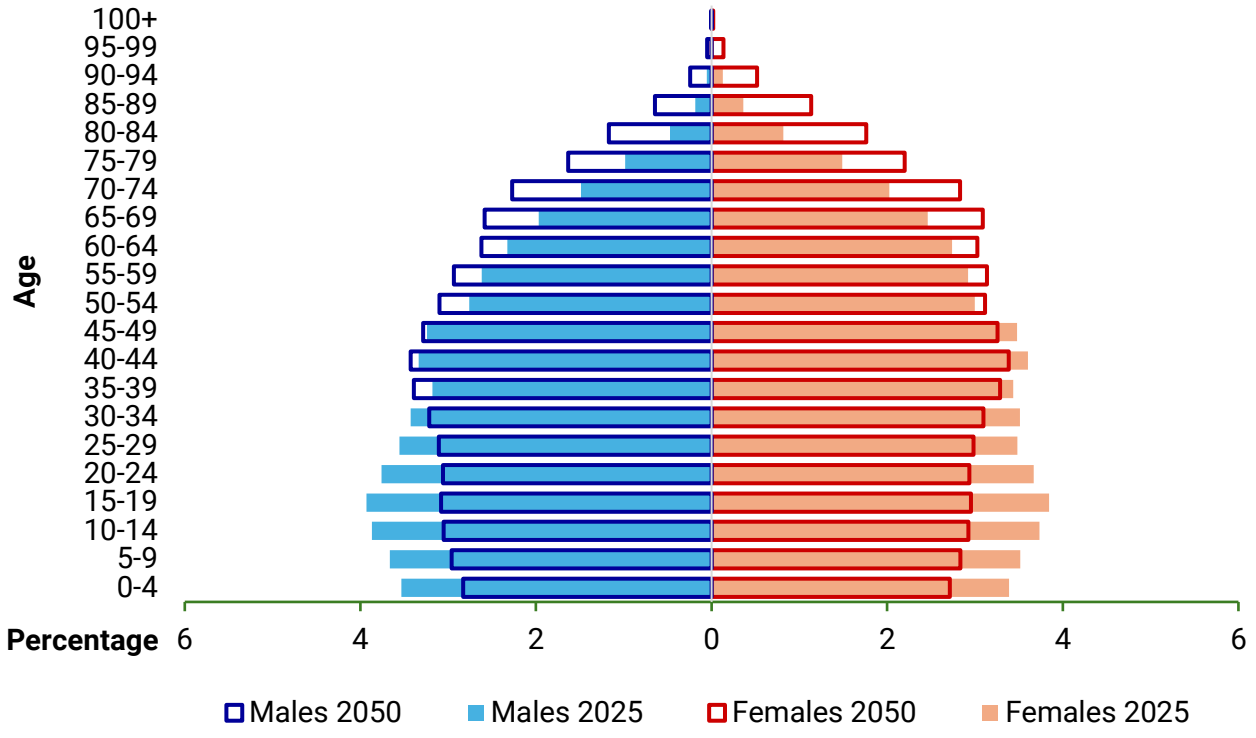
Sri Lanka’s demographic profile has experienced a rapid transition over the last few decades. A reduction of fertility and rapid population ageing is clearly evident (figure 2). Shifts in the dependency ratio and effects on the workforce affect the economic prospects of the country. Hence, a strategic approach in tackling the wider socioeconomic impact is needed.

Climate change and disaster preparedness

Sri Lanka is highly vulnerable to climate change due to its geographic location, low-elevation coastal zones and a climate-sensitive, agriculture-dependent economy. The country faces a spectrum of natural and climate-related hazards, including floods, droughts, landslides, cyclones and sea-level rise, which are all intensifying due to hydro-meteorological changes.

[2] National Population and Housing Census 2024 (2024). Department of Census and Statistics Ministry of Finance, Planning and Economic Development. (2026). Census of Population and Housing - 2024 Final Report.
[3] See: https://www.statistics.gov.lk/qlink/PressReleases/GDPSummaryIndicatorsQ12025_En

Figure 2. Demographic change in Sri Lanka, 2025 and 2050 (projected)



Source: United Nations, 2024. World Population Prospects 2024. Available at: https://population.un.org/wpp/

The two annual monsoon seasons bring heavy rainfall, often leading to flash floods and landslides, particularly in the Southern, Sabaragamuwa and Eastern provinces. Droughts, such as the severe event in 2016–2017, that affected 1.8 million people across 20 districts, underscore the country's growing water scarcity challenges. Coastal regions, vital to the national economy through agriculture, fisheries and tourism, face mounting risks from erosion, sea-level rise and increasingly frequent extreme weather events. These occurrences all disproportionately affect older persons, posing health risks and financial burdens.

Such climatic threats also significantly impact key development sectors such as health, agriculture, water, energy and infrastructure. The health system, closely linked to environmental conditions, is particularly vulnerable to disruptions from floods, droughts and rising temperatures. Climate-sensitive diseases, service delivery interruptions and increased population vulnerabilities threaten to reverse public health gains. In this context, climate change mitigation and disaster preparedness have become critical components of health system resilience. Strengthening risk-informed planning, improving early warning systems and integrating climate adaptation into sectoral policies are essential to safeguarding Sri Lanka's developmental progress in the face of escalating climate risks (Ministry of Environment Sri Lanka, 2021; World Bank Group and Asian Development Bank, 2021; UNDRR, 2019). To effectively address climate change mitigation and disaster preparedness within Sri Lanka's health system and reduce the negative health impacts on older persons, it is essential to understand the country's evolving climatic risks.

The COVID-19 pandemic, economic downfall

Even with a well-established public health system across the country, with high coverage, many shortfalls were observed in the health system during the COVID-19 pandemic, as well as the post-COVID-19 period. Inadequate preparedness, including lack of alternative care provision methods (telehealth), supply chain lapses, issues in human resource deployment and training, and delays in establishing alternative methods of financing for the health sector were exposed. The impact of those on the population was unequal, further extending inequalities in society. Furthermore, the livelihoods of informal workers (over 66 per cent of Sri Lanka's labour force) were hard hit by the restrictions applied during the COVID-19 period. This exposed the vulnerabilities of not having adequate and sustainable social protection schemes (United Nations, 2020; Fonseka, 2022).

II. Objectives

Given the aforementioned background, the objectives of this paper are to:

- Identify and review policies, strategies and other documents relevant to strengthening health systems in the context of population ageing, climate change effects on health, disaster preparedness and investing in technology solutions for health.
- Identify challenges, good practices and lessons learned to strengthen the health system in Sri Lanka.
- Provide recommendations for strengthening the health system of Sri Lanka on selected emerging issues.

III. Methods

To fulfil the above objectives, this paper analyses existing policies, strategies and related documents on population ageing, climate change mitigation, disaster preparedness and use of technological solutions, with a view of strengthening the health system response in Sri Lanka. In particular, this is done by:

- Identifying relevant documents.
- Critically reviewing the linkages of climate change mitigation, disaster preparedness and use of technological solutions in relation to population ageing and health system development.
- Documenting good practices, lessons learnt and challenges in relation to health system improvement.
- Devising recommendations for strengthening heath systems and addressing emerging challenges in order to enhance the health of older persons.

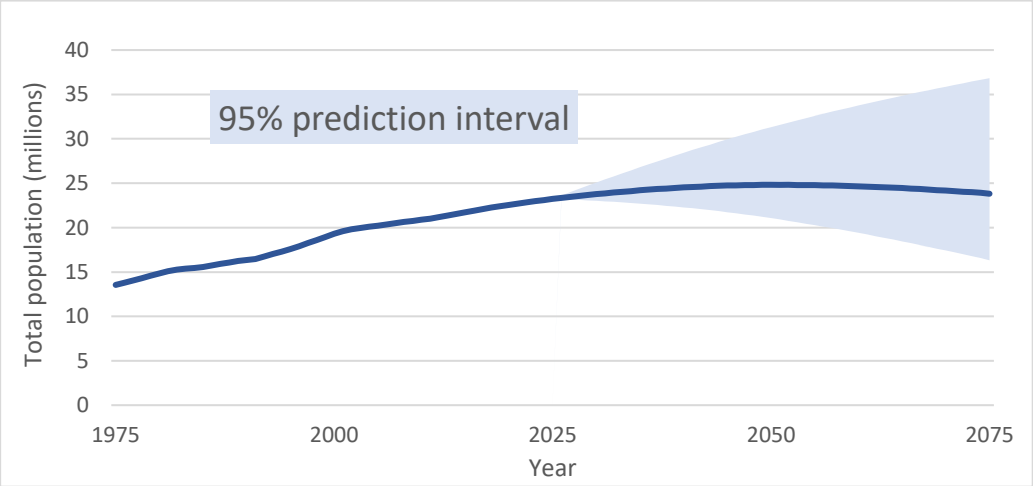
IV. Review findings

Population-related policies and ageing

Epidemiology of ageing

According to the latest national population census in Sri Lanka, in 2024, the total population was 21.7 million. For the 2012—2024 inter-census period, the average annual population growth rate was 0.5 per cent. This indicates that, while the population growth rate in Sri Lanka has slowed, the population continues to increase (DCS, 2025). Only the preliminary report of the 2024 census has been published; this is without age/sex disaggregation. Hence, the available population projections are based on the 2012 census and the standard projection indicated that the population will be 25.0 million in 2042 and 25.8 million in 2062 (De Silva and de Silva, 2023). According to the United Nations (2024), the population is projected to be 24.6 million in 2042 and 24.5 million in 2062 (figure 3). The standard projection shows that, from 2032 onwards, the sex ratio will increase marginally (De Silva and de Silva, 2023). However, the excess of females over males will remain a salient feature of the Sri Lankan population.

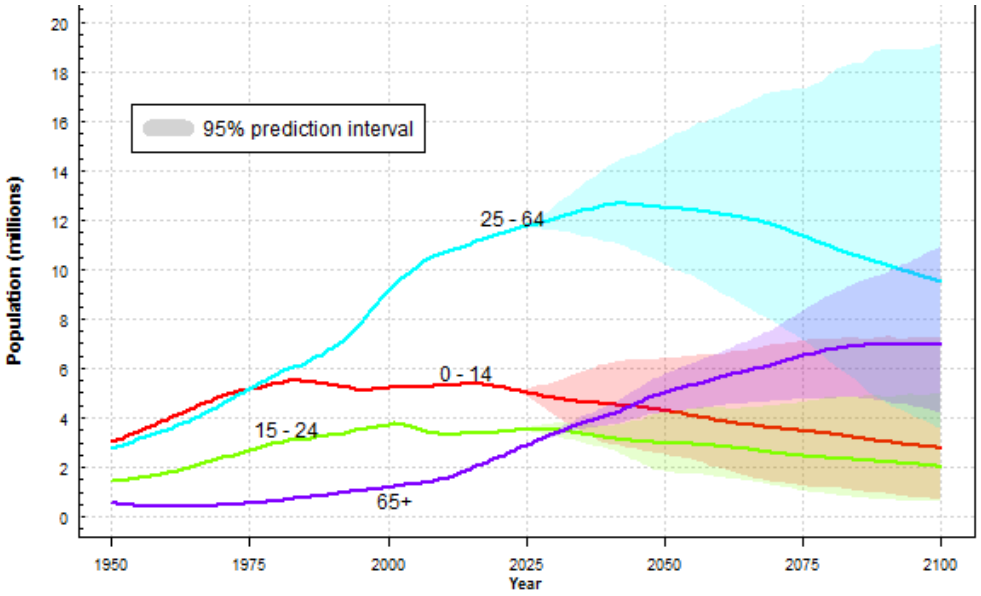
Figure 3: Sri Lanka total population, 1950-2100



Source: United Nations, 2024. World Population Prospects 2024. Available at: https://population.un.org/wpp/

Fertility rates have been declining in Sri Lanka, and it is projected that the total fertility rate (TFR) will remain at a level of 1.78 live birth per woman (15-49) during the period from 2025 to 2060 (De Silva, 2016). The TFR according to the United Nations (2024) will decline from 1.94 to 1.74 during the same period. However, it is important to note that Sri Lankan population growth was not always uniform over the past few decades, as there were growth spurts in post–war years as well as reduced birth rates soon after the economic crisis which Sri Lanka experienced in 2022. The projected population by age groups shows that, in the future, the total dependency proportion of Sri Lankan population (children, <15 years, and older persons, >65 years) will be high mainly due to the increased number of older persons (figure 4). The percentage of the working age population will reduce gradually; in 2062, it is projected to be 57.1 per cent (De Silva and de Silva, 2023). Based on United Nations (2024) projections, it will be 61.0 per cent.

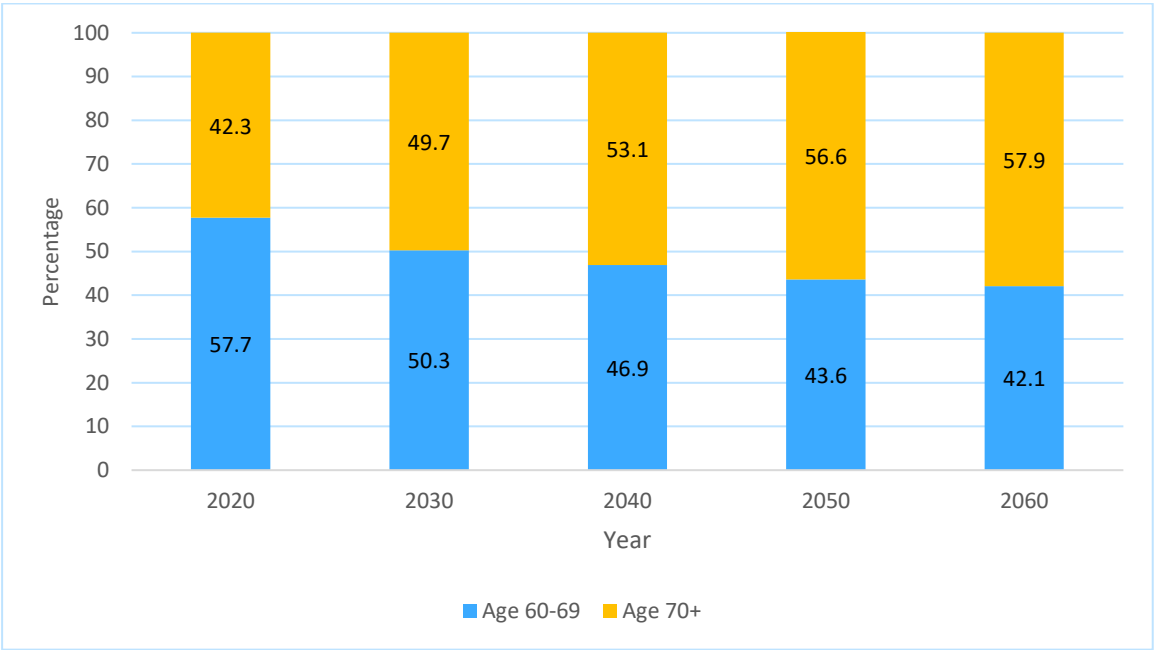
Figure 4: Relative size of child (< 15 yrs.), youth and middle age (15-65 yrs.) and older person (65+ yrs.) populations in Sri Lanka, 1950—2100



Source: United Nations, 2024. World Population Prospects 2024. Available at: https://population.un.org/wpp/

It is projected that, by 2042, nearly one in four people in Sri Lanka will be an older person. The projected older population can be categorized into two groups namely 'young-old' (60—69 years) and 'old-old' (70+ years) (Perera, 2017). The proportion of 'old-old' is projected to increase by 49 and 56 per cent, respectively, in 2030 and 2050. Being one of the fast-ageing countries in South Asia, there will be nearly 6.5 million older persons in Sri Lanka by 2050 (figure 5) (United Nations, 2024).

Figure 5: Structure of the population of older persons by age 60—69 and 70+ years in Sri Lanka, 2020—2060



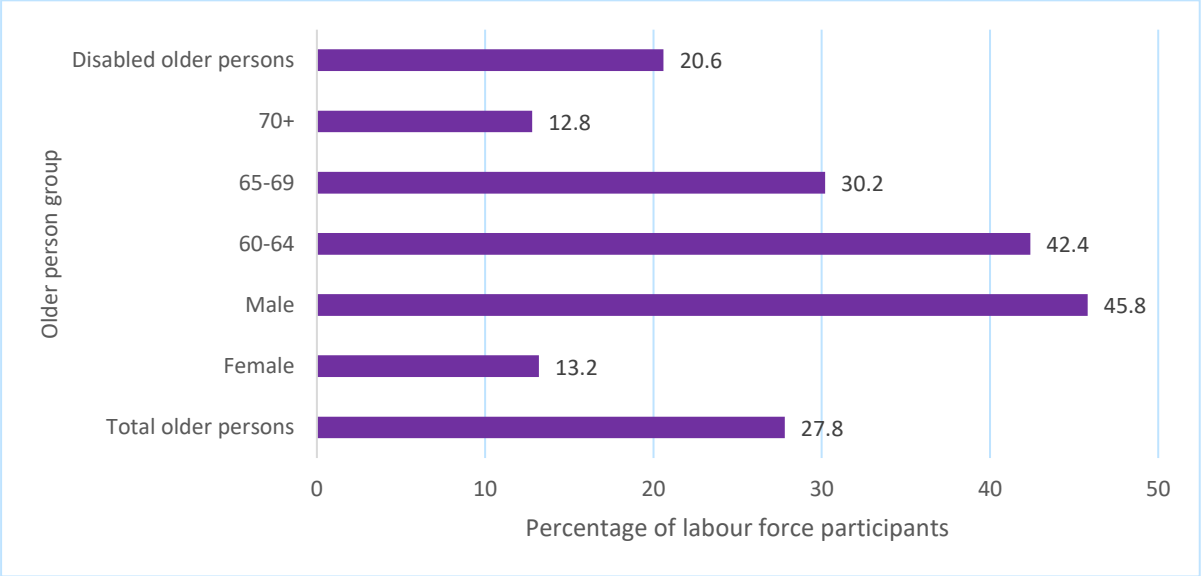
Source: United Nations, 2024. World Population Prospects 2024. Available at: https://population.un.org/wpp/

Older persons and development

An expanding population of older persons requires developing necessary infrastructure and services for them. In the National Policy for Senior Citizens, it is mentioned that every older person has the right to live in a safe environment that is adaptable to their preferences (Ministry of Social Services and Social Welfare, Sri Lanka, 2006).[4] This safe environment needs to be established at every level of society, from public places to older persons' own homes. However, the implementation of this policy has fallen behind; this is confounded by the policy not having been updated for the last 20 years.

As presented in figure 6, a significant proportion of older individuals remain economically active, particularly in informal and agricultural sectors. In 2012, 27 per cent of older persons were participating in the labour force (Fernando and De Silva, 2014). The data from the last census in 2024 are still not available for comparison. The decision to increase the working age up to 60 years in the government sector has facilitated older persons to remain in employment. The main reasons for older persons' labour force engagement include lack of social protection, including pensions, desire for economic independence, active contribution to family income and psychological benefits of remaining productive.

Figure 6: Overview of labour force participation patterns among older persons in Sri Lanka, 2012—2013



Source: Tilakaratna et al, 2019.

Note; Unless otherwise specified, the groupings refer to older persons aged 60+.

Even though in the National Policy for Senior Citizens of Sri Lanka (Ministry of Social Services and Social Welfare, Sri Lanka, 2006), the right to work, as well as the right to retire when desired, is ensured, older persons face a number of challenges. Some of these are: the age-related physical decline affecting productivity; limited opportunities for re-skilling or adapting to new technologies; discrimination in hiring or retention; lack of formal employment opportunities, especially for women;

[4] See also: https://www.population-trends-asiapacific.org/repositories/policies

precarious working conditions, especially in the informal sector; mental and cognitive challenges in adapting to fast-paced or physically demanding jobs; and a lack of workplace accommodation (for example, ergonomic modifications).

The National Policy for Senior Citizens also calls for legislation to protect the rights of working older persons and ensure safe working environments. Moreover, it supports lifelong learning and vocational training tailored to older persons and promotes the elimination of age-based discrimination in employment. However, there are implementation gaps, particularly reduced opportunities of lifelong learning and opportunities of vocational training for older persons, resulting in them not receiving the full benefits of the policy.

Some of the main policy gaps in the National Policy for Senior Citizens in Sri Lanka are:

- Weak enforcement of occupational safety standards.
- Limited coverage of older person-specific workplace protections in labour laws.
- Inadequate re-skilling programmes or transition planning for retirement.
- Lack of data on older persons' employment trends and accident rates.

These gaps can be bridged by developing sector-specific occupational safety standards for older workers and introducing incentives for employers to hire or retain them in safe occupation roles. Investing in ergonomic and flexible work environments and promoting intergenerational workplaces where older persons can mentor younger employees will help to overcome some of the barriers that older workers encounter while working due to age-related disabilities and morbidities.

Advancing health and well-being of older persons

The key health challenges that older persons in Sri Lanka face include: high prevalence of NCDs, such as hypertension, diabetes, cardiovascular diseases, cancers, and functional issues with mobility, hearing and vision; rising cases of depression, anxiety, dementia and social isolation; limited access to age-appropriate health services in rural and estate areas; and inadequate elder care training among health workers (Office of the Deputy Director General, Ministry of Health, 2021).

In this regard, the National Elderly Health Policy of Sri Lanka (2006) seeks to:

- Promote healthy ageing through preventive, promotive, curative and rehabilitative care.
- Ensure accessible, affordable and age-friendly health services.
- Strengthen the role of primary healthcare in addressing older persons' needs.
- Foster community-based care and family support systems.
- Integrate social and mental well-being into healthcare delivery.

The policy emphasizes strengthening primary healthcare approaches to include screening and follow-up care for older adults, while Healthy Lifestyle Centres have been established for early detection of NCDs among older persons (Directorate of Planning – Management, Development and Planning Unit, 2025).

The Geriatric Care Development programme has initiated training general practitioners and nurses in geriatric care, development of home-based care programmes and outreach services for bedridden or dependent older persons through Public Health Nursing Officers in a few places (Directorate of

Planning – Management, Development and Planning Unit, 2025; Samaraweera and Maduwage, 2016). Furthermore, plans to establish dedicated geriatric units in major hospitals are in the planning process. Community support for older person care is channelled through elderly day care centres, senior clubs and volunteer networks (Sri Lanka Association of Geriatric Medicines, 2019).

Climate change mitigation and disaster preparedness

Climate change trends and disaster incidence

Sri Lanka's climate is defined by its tropical location and altitudinal variations, leading to diverse microclimates across the island. Although seasonal temperature variation is minimal, rainfall patterns show significant spatial and temporal variability.

Between 2014 and 2023, Sri Lanka experienced multiple natural disasters attributed to erratic climatic conditions. Temperature differences across the country are largely governed by elevation, with highlands being significantly cooler than lowlands. Sri Lanka warmed by approximately 0.8°C over the twentieth century. Temperature rise in Sri Lanka is projected to be marginally lower than the global average. Extreme heat threatens human health and living standards, particularly for outdoor labourers in urban areas (World Bank Group and Asian Development Bank, 2021).

Sri Lanka's rainfall is highly seasonal and primarily influenced by monsoonal winds, resulting in four major rainfall seasons. A general decrease in annual rainfall has been observed in central regions, while rainfall extremes have increased. The mean annual rainfall is about 1,850 mm, which is relatively high, globally. However, water scarcity issues persist due to high inter-annual variability (year-to-year fluctuations) and spatial disparities—some regions are much wetter or drier than others. This uneven distribution results in floods and landslides in certain areas, while droughts and water shortages occur in others.

Climate Vulnerability and Readiness Index

The Climate Vulnerability and Readiness Index (ND-GAIN Index, or Notre Dame Global Adaptation Initiative Index) is a global tool that measures a country's vulnerability to climate change and its readiness to improve resilience. It is widely used to assess how prepared countries are to face climate impacts and environmental shocks. The ND-GAIN Index provides a composite score. A low score means that a country is highly vulnerable and less ready, with weaker adaptive capacity; it thus often needs urgent support. A high score indicates stronger adaptive capacity and institutional preparedness.

In the ND-GAIN Index ranking, Sri Lanka is ranked 110 out of 181 countries. That stated, it is less vulnerable than many low-income countries but more vulnerable than most upper-middle and high-income countries (Notre Dame Global Adaptation Initiative, 2025). Its readiness is significantly behind that of higher-income countries that benefit from stronger governance, economic resources and social infrastructure.

Trends and projections of climate change

Historical data show a consistent warming trend across the country, with more frequent warm days and nights and fewer cold events. Notably, nighttime temperatures are rising faster than daytime ones, contributing significantly to overall warming. Urban areas, in particular, are experiencing

elevated temperatures due to the Urban Heat Island effect, driven by dense construction, reduced greenery and concentrated heat emissions.

Rainfall trends are also shifting, and average annual rainfall declined by around 7 per cent between 1961–1990 compared to 1931–1960. The intensity of rain events has increased, particularly in the Central Highlands. Furthermore, there is evidence of more consecutive dry days, with droughts, floods and landslides occurring more frequently and with greater severity, such as the devastating 2016–2018 drought in the dry zone and concurrent floods in the wet zone. Projections based on climate models suggest that these trends will intensify. According to Intergovernmental Panel on Climate Change (IPCC) scenarios used by the Department of Meteorology, average temperatures in Sri Lanka could rise by 2.3°C to 3.6°C by 2080, worsening vulnerabilities in agriculture, health and biodiversity. Rainfall is expected to increase in the wet zone, heightening the risks of floods and landslides, while the dry and intermediate zones may face more frequent droughts (Ministry of Environment, 2022).

Sea level rise poses another major threat, with estimates indicating inundation of 1,534 hectares in Colombo and 14,809 hectares in Puttalam, by 2100, threatening coastal livelihoods, freshwater systems and critical infrastructure. These climate projections highlight the urgent need for robust adaptation and mitigation strategies across all sectors, especially agriculture, water, health and urban development, to safeguard Sri Lanka's future resilience. Thus, climate change is already evident in Sri Lanka through rising temperatures, altered rainfall patterns and extreme weather events. Projections confirm that climate risks will increase unless urgent adaptation and mitigation measures are taken. Understanding these trends is crucial for policy planning, sectoral adaptation (agriculture, health and water) and climate-resilient infrastructure development (Ministry of Environment, 2022).

Exposure and socioeconomic vulnerability

Beyond physical exposure, socioeconomic vulnerability plays a decisive role in shaping the impacts of climate change and the ability of communities to cope and recover. In rural areas, poverty forces many families to depend on environmentally-fragile lands for farming, even when these areas are highly prone to landslides, droughts or seasonal flooding. Livelihoods in agriculture, fisheries and the plantation sector are especially sensitive to climate variability, and disruptions can lead to food insecurity, income loss and long-term economic instability. Urban informal settlements are often excluded from official service networks and disaster preparedness programmes, further increasing their exposure and limiting access to emergency support. The populations in these settings are often not just underserved but systematically marginalized in both development planning and disaster response efforts.

Groups particularly exposed to vulnerability – such as women-headed households, older persons, persons with disabilities and remote rural communities – face compounded risks due to limited access to resources, social protection and institutional support. Women and girls, for instance, face disproportionate burdens in post-disaster settings due to caregiving responsibilities and gender-insensitive relief mechanisms that fail to consider their specific needs. Marginalized populations also experience reduced access to land ownership, credit, training and insurance, all of which are critical for building resilience. These socioeconomic challenges underscore the importance of

inclusive climate adaptation strategies that address structural inequalities, empower at-risk communities and integrate disaster risk reduction into national development priorities (Ministry of Environment, 2022).

The 2016–2017 drought, the worst in 40 years, affected over 1.8 million people, with disruptions to water supplies and agriculture revealing systemic weaknesses in resilience planning. Compounding the physical vulnerabilities are socioeconomic factors. Poverty, limited insurance coverage and lack of access to training or financial services prevent many women, rural dwellers and informal settlers from preparing for and recovering from disasters. Together, these factors create a complex web of risks that demand integrated, long-term solutions (Ministry of Environment, 2022).

Health sector impacts

One of the most pressing health challenges linked to climate change is a rise in mosquito-borne diseases, such as dengue. Inadequate sanitation during and after extreme weather events results in increased cases of diarrheal diseases, particularly among low-income communities. Contaminated drinking water sources during monsoonal floods, combined with weak waste management systems, amplify disease outbreaks among rural as well as urban populations. Increasing average temperatures and heatwaves pose a significant threat to health, particularly in urban settings experiencing the Urban Heat Island effect. Direct health effects include exacerbation of cardiovascular diseases, respiratory conditions, heat exhaustion, dehydration and heat stroke. These conditions disproportionately affect older persons, outdoor workers and people with pre-existing heart and kidney conditions. Further, dry spells and poor air quality, aggravated by prolonged droughts and increasing vehicle and industrial emissions, contribute to bronchial asthma, chronic obstructive pulmonary disease and allergic rhinitis, among others (Ministry of Environment, 2022). Climate-induced disruptions to agriculture (for example, droughts, floods and pest outbreaks) threaten food production and availability, resulting in nutritional deficiencies.

Recurring climate-related disasters disrupt healthcare services, particularly in rural and high-risk areas. This affects the continuity of critical services, while weakening disease surveillance and outbreak response. In addition, it strains already resource-limited health system. These cascading challenges underscore the urgent need to strengthen health infrastructure, enhance surveillance systems and integrate climate resilience into national health sector planning and development (World Bank Group and Asian Development Bank, 2021; UNDRR, 2019).

Economic and social impact of climate change

Sri Lanka ranks among the most climate-vulnerable countries globally, placed second on the 2017 Climate Risk Index (UNDRR, 2019). Economically, climate change has had devastating consequences on key sectors such as agriculture, fisheries, tourism and infrastructure. In 2016, flood-related damage alone cost approximately US$ 0.678 billion, while overall climate-related losses in 2017 were estimated at US$ 1.623 billion, representing a major burden on the national economy. These losses have strained public finances, leading to a reduction in the GDP share allocated for essential services like free healthcare and education from 20.0 per cent in 2010 to 17.3 per cent in 2014. Socially, the impact has been severe, disproportionately affecting vulnerable populations including smallholder farmers, women, older persons and the urban poor (Ministry of Environment, 2022).

Although monitory poverty is recorded at 14.3 per cent in the household and economic survey (DCS 2019), climate-induced disasters disproportionately affect low-income communities, leading to increased school dropout rates, limited access to healthcare and loss of livelihoods. It needs to be emphasized that Sri Lanka's high population density in disaster-prone areas, combined with limited adaptive capacity, makes the country highly vulnerable to recurring and intensifying climatic hazards, threatening long-term development and social stability (Ministry of Environment, 2022).

In assessing the social and economic impact of disasters, unlike traditional assessments that focus solely on asset losses, the country should adopt a broader framework. This includes measuring socioeconomic resilience and well-being losses to provide a more holistic understanding of how disasters affect people's lives. If socioeconomic resilience and well-being losses are added to asset loss, it is possible that large portions of the population, including older persons, are pushed into transient poverty, hindering national progress on poverty reduction and inclusive development. Research shows that the poorest households have suffered a smaller share of asset losses (only 7 per cent), and a much higher share (32 per cent) of well-being loss due to their limited coping capacity, such as lack of savings, social protection or access to credit. These social impacts are often long-lasting, with some households unable to recover even after 10 years. Economically, the average annual well-being loss from flooding is estimated at US$ 119 million, exceeding the asset loss of US$ 78 million, demonstrating that conventional measures vastly underestimate the true cost of disasters (Walsh and Hallegatte, 2019).

Technological advances and capacity

Computer and digital literacy

The Fourth Industrial Revolution is characterized by a combination of modern developments in physical, digital and biological domains. Areas like robotics, artificial intelligence, the Internet of Things and big data analytics, are transforming all spheres of life through increased automation, including healthcare and wellness services, as well as improving connectedness across all sectors. Technology advances in the health sector involve greater usage of digital solutions for information systems, process streamlining, patient and healthcare staff monitoring and outcome evaluation. Hence, it is necessary to engage and connect all stakeholders digitally to transform the traditional processes, which are mainly manually performed, towards efficient, cost effective and user-friendly high-quality services. Enhancing computer and digital literacy[5] of the workforce and users is important to achieve positive outcomes through digital transformation. Given a rapidly ageing population in Sri Lanka, with a high general literacy rate in reading and writing, digital literacy is still considerably low. Increasing digital literacy for people of all ages is important to sustain and improve health outcomes. The latest available statistics show a mixed picture in digital literacy (tables 1 and 2).

[5] Computer Literate Person - a person (aged 5—69) is considered as a computer literate person if he/she can use a computer on his/her own. For example, even if a 5-year-old child can play a computer game then he/she is considered as a computer literate person. Computer Literacy Rate – this measures the computer literate population expressed as a percentage of the total population (aged 5—69 years) within the respective domain. Digitally Literate Person - a person (aged 5—69) is considered as a digital literate person if he/she can use computer, laptop, tablet or smartphone on his/her own. Digital Literacy Rate - this measures the digital literate population expressed as a percentage of the total population, (aged 5—69 years) within the respective domain.

Table 1: Computer literacy rate and digital literacy rate by gender, sector and age group in Sri Lanka, 2023 (during first six months)

Gender, sector, age group	Computer literacy (percentage)	Digital literacy (percentage)
Sri Lanka	**39.5**	**63.8**
By sex		
Male	41.4	66.1
Female	37.8	61.6
Sector		
Urban	52.3	76.2
Rural	37.9	62.0
Estate	17.7	45.6
By age group (years)		
5 - 9	15.9	47.9
10 - 14	57.2	78.9
15 - 19	80.1	93.3
20 - 24	74.7	93.3
25 - 29	65.8	89.8
30 - 34	52.9	84.5
35 - 39	40.3	75.8
40 - 49	30.1	62.5
50 - 59	16.5	39.8
60 - 69	8.0	22.2

Source: Department of Census and Statistics, Sri Lanka, 2023.

It can be seen that digital literacy is higher than computer literacy for all disaggregated age categories, showing the drift from personal computers to smartphones/tablets, which indicates the possibility of using mobile applications for health sector transformation (Department of Census and Statistics, 2023). This is particularly relevant to older age groups that need user-friendly innovations to increase overall use of technology.

While there are important variations by sex and sector, since this paper focuses more on older persons, the very significant drop in digital literacy, and especially computer literacy rates, from early adulthood is an area of concern. In the oldest age group (60—69), the vast majority of people are not literate. It is most likely that people in even older age groups are even less literate, limiting the scope of using telemedicine and other healthcare services that depend largely on good digital and computer literacy.

Table 2: Percentage distribution of device usage in household population* (aged 5 – 69 years) to access Internet and email by sex, sector and age group in Sri Lanka, 2023 (during first six months)

Gender, sector, age group	Total (percentage)	Device used to connect to Internet/email (percentage)			
		Desktop/laptop	Smartphone	Tablet computer	Mobile phone
Sri Lanka	**100.0**	**17.5**	**80.3**	**1.5**	**0.7**
By sex					
Male	100.0	18.4	79.3	1.6	0.8
Female	100.0	16.5	81.4	1.4	0.7
By sector					
Urban	100.0	23.4	74.2	1.9	0.5
Rural	100.0	16.0	81.8	1.4	0.8
Estate	100.0	5.2	94.0	0.8	0.0
By age group (years)					
5 - 9	100.0	10.3	87.8	1.6	0.4
10 - 14	100.0	14.7	83.0	1.5	0.8
15 - 19	100.0	17.8	79.8	1.2	1.2
20 - 24	100.0	20.8	76.9	1.4	0.8
25 - 29	100.0	21.3	76.2	1.9	0.6
30 - 34	100.0	18.7	78.6	1.8	0.8
35 - 39	100.0	16.8	81.5	1.2	0.6
40 - 49	100.0	16.4	81.8	1.3	0.6
50 - 59	100.0	16.3	81.0	2.1	0.6
60 - 69	100.0	12.3	86.9	0.8	0.0

* Multiple choice answers

Source: Department of Census and Statistics, Sri Lanka, 2023.

In the above table, the variations between different groups are not as significant as in the preceding one. In terms of variation by age, as with the youngest groups, those in the oldest groups, proportionally, use more smartphones and fewer desktops/laptops than those in the age group in between. As smartphones can be very effective tools in accessing telemedicine and other digital healthcare services, there is a need to increase digital literacy among older persons so that they can benefit from this.

Digital transformation of healthcare

The World Health Organization, at its 71st World Health Assembly (WHA 71/7),[6] urged Member States to assess their use of digital technologies for health, including health information systems at the national and subnational levels. This is in order to identify areas for improvement and to prioritize, as appropriate, the development, evaluation, implementation, scale-up and greater utilization of digital technologies to promote equitable, affordable and universal access to health for all, including groups that are vulnerable in the context of digital health. It further, requested to consider, as appropriate, how digital technologies could be integrated into existing health systems' infrastructure and regulation, to reinforce national and global health priorities, by optimizing existing platforms and services, for the promotion of people-centred health and disease prevention and to reduce the burden on health systems.

In the world, the use of digital tools to enhance health system performance dates back many decades. Sri Lanka has also utilized many digital solutions over the years to enhance processes in patient care delivery. In the last decade, with advances in technology, particularly information and communication technologies (ICTs), digital applications have been introduced more in the health system. While digital solutions can change the way people engage with the health system to seek care, in Sri Lanka, most are used as isolated interventions within silos. Intra-operability of most existing systems is very limited. Those targeting specific and specialized areas make data sharing impossible within the health systems for broader application and utility. Use of information across different departments even within the State health sector is hindered due to lack of coherence in software architecture, lack of human resources, isolated administrative management structures, duplication of tasks and unsustainable finance mechanisms (Ministry of Health, 2022b).

At present, over 45 software applications are operational in the health sector, spanning from curative and preventive interventions to supply chain management. These multiple information systems within a single health system have led to ineffective processes, inefficiency and less than optimal outcomes. The digital transformation of the health sector of Sri Lanka initiative aims to (1) improve efficiency of the health system, (2) enhance data-driven decision making, (3) improve the quality and safety of patient care, and (4) reduce wastage and corruption.[7] The road map for transformation is presented in the Sri Lanka Digital Health Blueprint (appendix 1).

Sri Lanka Digital Health Blueprint

Digital transformation of health in Sri Lanka is guided by the Blueprint devised by the Ministry of Health (2023b). The goal of the Blueprint is to ensure that everyone in Sri Lanka is provided with a secure and private lifetime electronic record of their health history and that authorized providers are able to access their records in support of high-quality care. In doing so, the Blueprint is a set of principles, structures, standards and guidelines that developers and designers can use to ensure national systems will be compatible and interoperable (Ministry of Health, 2022b).

Among the key elements of digital transformation is the National Electronic Health Record. This provides each citizen with a lifetime health record that can be utilized for continued care across all service points and different care levels, including the private sector. It acts as a repository for

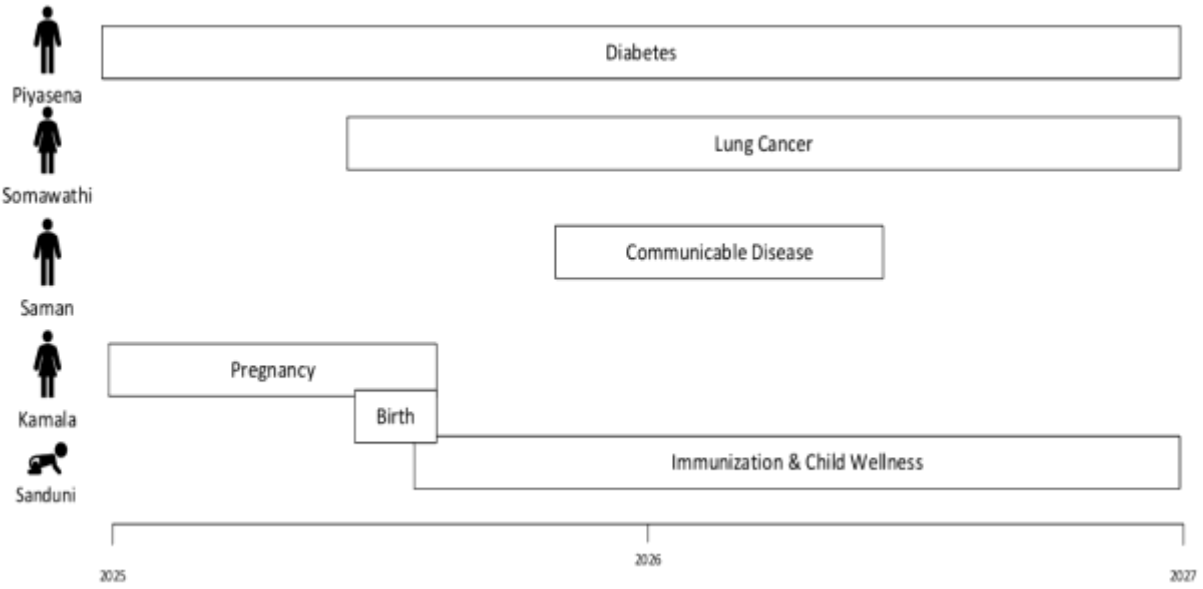
[6] See: https://iris.who.int/bitstream/handle/10665/279505/A71_R7-en.pdf?sequence=1
[7] Personal communication, Director information, Ministry of Health, Sri Lanka.

providing the necessary storage and retrieval capabilities for data summaries to enable care providers access to patient data for timely and comprehensive interventions. Once systems and applications are digitally connected, and information repositories are created and able to share information, users will be able to interact with new levels of structured information, allowing them to utilize information and evidence that supports informed clinical decision-making (Health Information Unit, Ministry of Health, 2023).

When the blueprint is implemented, user stories (patient journeys) of a life of a Sri Lankan citizen as they interact with the health system will be documented in detail (figure 7). These stories represent typical user journeys that a Sri Lankan might take as they interact with different programmes and health facilities during their lifetime, enabling evidence-informed policy decisions for future developments. Information that is gathered flows from each service point to enable correct clinical decisions and timely service provision, avoid duplication, prevent wastage to the system and ensure better outcomes for the client.

Continued care and close monitoring are prerequisites for healthy ageing. Improving productivity in an ageing workforce is directly liked to continued healthcare delivery and health promotion. Hence, National Electronic Health Record implementation is crucial.

Figure 7: Patient journey stories from Sri Lanka



Source: Ministry of Health, Sri Lanka, 2023b.

Telehealth

Telehealth is defined as healthcare provided remotely to a patient in a separate location using two-way voice and visual communication.[8] Digital technologies, such as mobile wireless technologies, have the potential to revolutionize how populations interact with national health services. Digital

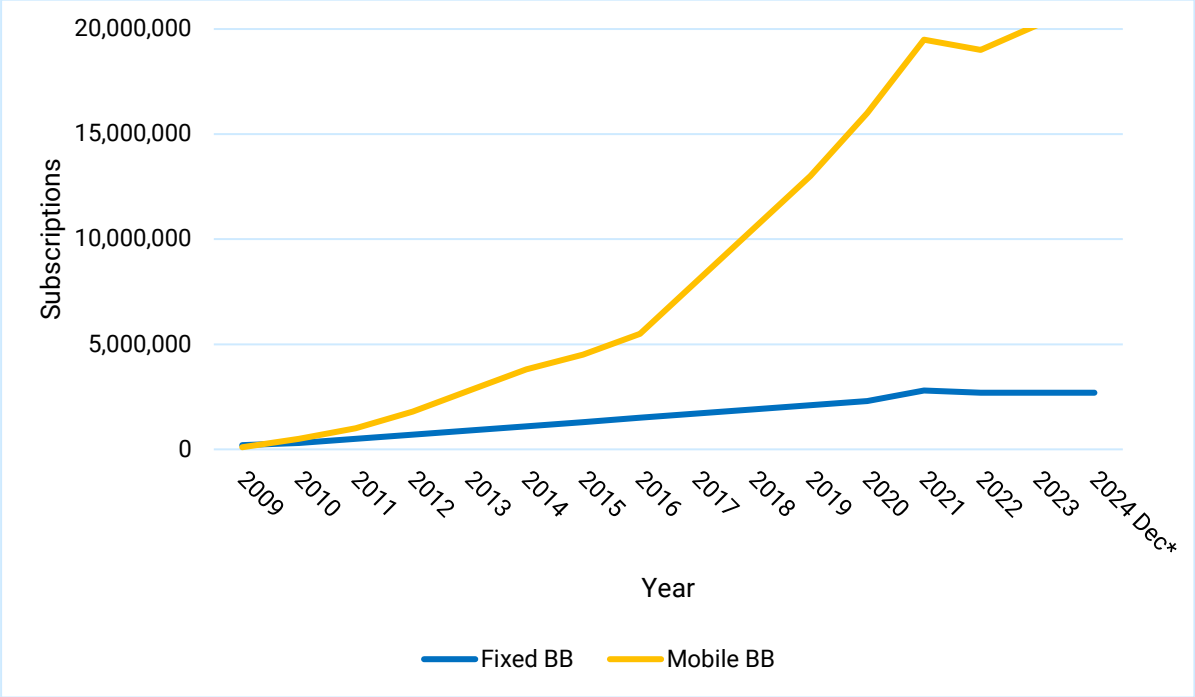
[8] See: https://www.merriam-webster.com/dictionary/telehealth

health, and specifically mHealth,[9] has been shown to improve the quality and coverage of care, and increase access to health information, services and skills, as well as promote positive changes in health behaviours to prevent the onset of acute and chronic diseases.

A key objective to implementing digital health, and particularly mHealth, is to increase access to health services through the effective and timely sharing of health data, particularly for hard-to-reach populations. This, in turn, helps increase patient, family and community engagement. The framework on integrated, people-centred health services intends to make healthcare systems more responsive to people's needs by putting patients and their families at the centre of healthcare systems.

In the Sri Lankan context, connectivity to the Internet and social media, through which services can be supplied, is promising and has increased rapidly in the last 15 years (figure 8, table 3). Although age-disaggregated data are not nationally available yet, digital literacy, even among older persons, is over 20 per cent as noted above (table 1).

Figure 8: Fixed broadband and mobile broadband subscriptions in Sri Lanka, 2009—2024



Source: Telecom Statistics of Sri Lanka Q4 2024 – TRCSL.
Note: Fixed BB = Fixed broadband, Mobile BB = mobile broadband.

[9] mHealth (mobile health) refers to the use of mobile and wireless technologies to support health care delivery; these include smartphones, wearable devices and tablets.

Table 3. Social media users in Sri Lanka, as of 31 December 2024 (estimated)

Name of social media	Number of users
Facebook	15,031,412
YouTube	14,528,371
WhatsApp	14,928,520
Viber	6,068,833
Imo	7,662,817
Instagram	8,470,698
Snapchat	4,012,121
Tik Tok	10,557,052

Source: Telecom Statistics of Sri Lanka Q4 2024 – TRCSL, 2024.

Realizing the benefits of telehealth and the need to regularize the process of telehealth services in Sri Lanka, in 2024, detailed guidelines were issued by the Ministry of Health as a circular (01-17/2024).[10] The objective of the guidelines is to provide overall guidance and standards for Sri Lankan healthcare providers, platform developers/vendors engaged in the design and delivery of telemedicine services, and consumers/patients availing themselves of such services. This provides space for new initiatives and technology-based solutions to existing and future issues in the health system.

Use of telehealth was prominent across the globe during the COVID-19 pandemic to curtail transmission. As recommended by research evidence, most health systems have adapted quickly to virtual consultations with their patients. However, there is need for improvement when dealing with older persons, as they want to have access to both in-person and virtual consultations, when appropriate. Still, it has been found that telemedicine for older persons' primary care generally has led to positive experiences and high satisfaction (Ilali et al, 2023).

An understanding of the culture of Sri Lanka and the need for additional computing skills are essential when implementing a telemedicine system in the rural areas of the country. Inadequate transport, economic hardships and uneven deployment of specialist services result in many people in rural areas visiting urban centres for healthcare. However, the cost and time of travelling to urban hospitals is high, indicating the potential to use telehealth in rural settings. Still, limited digital literacy among hospital staff and complexities of language are some of the factors identified as barriers (Jayasinghe and others, 2016). Although the Personal Data Protection Act has been in force since 2022,[11] issues relating to protecting patient data hinder efforts in utilizing telehealth for

[10] See: https://www.health.gov.lk/wp-content/uploads/2023/11/Telemedicine-Guidelines-Final-9.05.2024-for-MoH-Web-site.pdf
[11] See: https://www.parliament.lk/uploads/acts/gbills/english/6242.pdf

service delivery. Other confounding factors are insufficient infrastructure facilities and funding in rural hospitals.

Information and communication technology-based solutions

Although not directly intended to improve service delivery to older persons, several advances in ICT-based technology have been initiated in Sri Lanka. These were particularly helpful during the COVID-19 pandemic to enhance service delivery to difficult to reach segments in the population.

A virtual triaging system for identification and evacuation of those who needed hospitalization and to facilitate home management for mild and asymptomatic COVID-19 patients through an integrated patient management system was established via short message services (SMSs) and telephone helplines, with the involvement of multiple stakeholders. The approach was to integrate and expand existing services. A caller service already in operation to provide advice for COVID-19 patients and an ambulance service were connected through an SMS gateway with a toll-free telephone code from a centralized location to coordinate patient management and early response. Through this initiative, it was possible to reduce the number of non-urgent admissions to hospitals, provide accurate information to patients, and identify and evacuate patients who needed urgent care to hospital (Karunathilake et al, 2022).

A sample survey on stakeholder perspectives on utility of telehealth also showed that the majority are supportive of incorporation of technology-based solutions for delivering care. It was found that Telehealth enabled users to reduce healthcare expenditure. Of the registered consumers, 70.8 per cent (n=131) agreed that the availability of an Internet-based prescription option is important (Kulatunga et al, 2025). Although, overall satisfaction with experience of service providers was average, it offers potential options to improve access for older persons who have travel restrictions due to disability and poor health.

An assessment of a possible health intervention in nutritional counselling in a marginalized and remotely-located community in Sri Lanka, showed promising results in terms of user acceptance. Moreover, it showed positive indications to accommodate a new nutrition intervention approach with availability of technology, the possibility of improving access to mobile services, and willingness of both recipients and healthcare providers to an alternative method of counselling (Weerasinghe et al, 2016).

Service delivery and financing

Current government sector services for older persons

Currently, curative services are provided to the population through 1,209 state health institutions, which comprise tertiary (21), secondary (638) and primary levels (550). These institutions are managed by the line ministry and provincial health authorities. Of the 6.9 million hospitalizations that took place in 2023, around 15 per cent were to people aged 70 or over and 48 per cent of these were females. There were 55.0 million outpatient visits and 32.0 million specialized clinic visits. Of the clinic visits, 16.0 million were for medical/diabetic clinic treatment and 1.2 million for psychiatric treatment (Ministry of Health, 2023).

In Sri Lanka, recent trends related to NCDs are variable (table 4), though the number of newly-diagnosed cancers (especially among women) has increased significantly (figure 9). With the

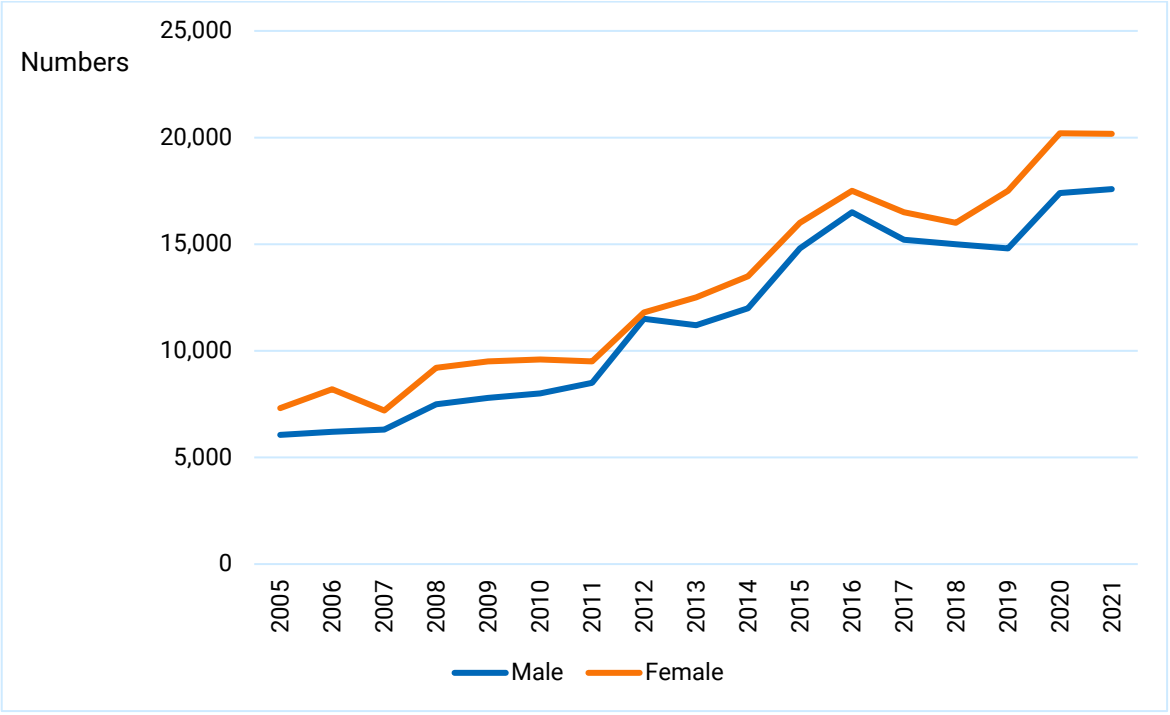
country experiencing population ageing, and NCDs being more prevalent among older persons, the need for specialized services and palliative care is likely to grow rapidly.

Table 4: Number of admissions to government hospitals due to selected noncommunicable diseases in Sri Lanka, 2019—2023

Major noncommunicable diseases	ICD code	2019	2020	2021	2022	2023
Cardiovascular diseases	I00-I99	415,666	346,144	289,050	381,687	419,934
Cancer	C00-D48	162,998	141,817	133,910	156,458	169,755
Chronic respiratory diseases	J40-J47	231,019	133,231	82,482	185,462	210,239
Diabetes mellitus	E10-E14	107,336	82,565	61,443	67,040	66,223

Source: Sri Lanka Medical Statistics Unit.

Figure 9: Number of newly-diagnosed cancers in Sri Lanka, 2005–2021



Source: Sri Lanka National Cancer Registry Programme.

Private sector

Sri Lanka has a growing private sector health industry, where around 50 per cent of ambulatory care and 5 per cent of inpatient care is supplied through private (for profit) medical institutions. At present, there are 192 registered private hospitals and nursing homes.[12]

[12] See: https://www.phsrc.lk/pages_e.php?id=14

Most of the specialized human resources for the private sector are still provided by professionals employed in the State sector during after-hours (dual practice flexibility). Actual human resource data concerning the private health sector is scarce. Although the sector is regulated by the Private Health Sector Regulatory Council, regulatory reforms are necessary to ensure sustainability. Few specialized geriatric clinics, dedicated elder care programmes and home care services are part of private sector institutions; furthermore, published data are not available.

Health financing

Allocations in the national budget for developing and maintaining the State health sector have increased throughout the last decade. Health expenditure per capita has remained around USD 150 for over a decade and health expenditure as a percentage of GDP has been fluctuating at around 4 per cent. However, domestic general government health expenditure as a percentage of GDP has remained below 2 per cent. It should be also noted that out-of-pocket expenditure as a percentage of current health expenditure has remained at around 50 per cent during the last decade, which is of serious concern for vulnerable segments in society, including older persons.[13] With the economy of the country largely consisting of informal sector activity and the workforce composition undergoing changes due to population ageing, high out-of-pocket expenditure can negatively affect the health and well-being of the entire population.

Good practices and lessons learned

Demographic transition and population ageing

Currently experiencing rapid demographic change, Sri Lanka is projected to have one in four people being older persons aged 60+ by 2042, with a preponderance of women; it is also projected to continue to have a declining fertility rate. Further, in the coming decades, the labour force is projected to shrink, with fewer younger persons entering and a higher proportion of older persons engaging in economic activities. This could pose new challenges, such as age-related physical decline affecting productivity, as well as the need for: re-skilling or adapting to new technologies; introducing measures to prevent discrimination in hiring or retention; improving formal employment opportunities, especially for women; and addressing precarious working conditions. A high prevalence of NCDs, physical and mental disabilities, social isolation, limited access to age-appropriate health services and inadequate elder care training among health workers is already burdening the health system. Although geriatric care development has been initiated, progress is not matching the demand that exists. A strategic approach to face those requirements is urgently needed.

Climate change

Sri Lanka is realizing the threats of climate change due to rising temperatures, erratic rainfall, frequent and severe floods, droughts and sea-level rise. Apart from natural phenomena, direct human-induced phenomena, such as the Urban Heat Island effect, are exacerbating local temperatures, especially in cities. Poor land-use practices, deforestation and wetland loss increase exposure to hazards. It is clear that low-income communities, women-headed households, older persons, persons with disabilities and the rural poor suffer disproportionate impacts.

[13] See: https://data.worldbank.org/indicator/SH.XPD.GHED.GD.ZS?locations=LK

Socioeconomic inequality limits adaptive capacity and prolongs disaster recovery. Further, most informal settlements are in high-risk areas without access to services or preparedness programmes. Climate change threatens the health of the population, infrastructure, livelihoods and food security; it also leads to increased poverty and inequality. Building community trust, promoting awareness and encouraging proactive behaviour enhances resilience at household and community levels. Strengthening the health system's climate readiness requires investment, training, intersectoral coordination and public participation. Poor households experience higher well-being loss compared to lower asset loss. Hence, traditional disaster loss assessments that are currently been used underestimate the true impacts by ignoring well-being losses that need extended time for recovery.

Technology advances

Rapid development of telecommunication facilities in Sri Lanka and high penetration across the country supports ICT-based solutions for critical issues. Even though digital literacy in the population, especially among vulnerable groups, is not on par with developed countries, improving access to digital platforms encourages digital solutions. The establishment of a policy framework for digital transformation, particularly for health system strengthening, and dedicated agencies to pursue implementation presents a positive picture.

The COVID-19 pandemic that led to *ad hoc* ICT-based solutions to resolve emergency requirements provided long-lasting experiences to both providers and users to plan, improve and implement medium- to long-term solutions to system-wide issues. Particularly, to improve access and affordability, reduce inefficiency, and enhance cost-effective and user-friendly services in healthcare and education. Key concerns on inadequacies of long-term follow up of healthcare are addressed in many countries through electronic health records. Many attempts to introduce paper-based health records in Sri Lanka over the last two decades failed due to conceptual and implementation shortcomings; hence, the possibility of introducing the National Electronic Health Record to all citizens through digital transformation of the health sector is promising.

Challenges

Strengthening the Sri Lankan health system amidst economic downturns, internal political issues and changes in global health governance is challenging. This situation becomes more complex given the need to address the demographic transition, climate change and technological advances. Furthermore, only with a clear understanding of the challenges at the macro and micro levels can they be overcome.

Over the last decade and a half, political will and a movement of policies towards more positive approaches in handling emerging issues have been evident. However, reorienting policy intentions with new evidence and materializing policy directives at the operational level is slow and faces several bottlenecks. In relation to improving healthcare provision to older persons, some of the main concerns are limited availability of trained human resources on geriatric care both at institutional and community levels, lack of systematic home care and outreach services, overcrowding of higher-level health institutions, and underutilization of secondary and primary care due to a non-operating referral system. Although the healthy system policy framework directs community engagement in

realizing its intentions, actual engagement of community in policy cycles and decision-making forums is limited. Hence, low awareness among older persons and families regarding available services and inadequate integration between health and social sectors prevent intended outcomes.

Weak coordination among institutions involved in disaster risk management both vertically and horizontally leads to overlapping of mandates, delayed responses and fragmented implementation of resilience programmes. Limited integration also risks non coordinated development planning and increased long-term vulnerability. Accurate disaggregated data on vulnerability, hazard exposure and post-disaster impacts are lacking, making it difficult to conduct effective risk assessments, design targeted interventions or monitor recovery efforts. Current disaster risk reduction policies and response frameworks often overlook the specific needs of women, older persons and persons with disabilities; thus, recovery support rarely includes gender-sensitive designs or mechanisms to protect vulnerable populations.

Technology-based solutions need wider acceptability through stakeholder engagement from the beginning of conceptualization to planning, design and implementation in order to realize positive outcomes. Shared platforms throughout the entire health system are essential to make information flow consistently and be useful at each and every level of operation. One of the key challenges is people working in silos and ending up with low or no intra operability across multiple systems. Within the current ICT architecture of the Sri Lankan health system this is seen as preventing further advancement.

V. Conclusion

Despite having achieved UHC long before many other countries in Asia and the Pacific, this assessment of the Sri Lankan health system in relation to population ageing, climate change and technological advancements presents a mixed picture of the country's preparedness to face the challenges ahead. While political intentions and policy formulation to prepare for the next few decades are evident, realization of such intentions at the ground level shows many gaps and lapses in the implementation process. Coherent policy support across all sectors and intersectoral coordination of implementation plans is much needed for a more comprehensive, equitable and sustainable future of the country's health system, especially considering rapid population ageing.

Climate change impacts on all aspects of life are increasingly evident. These have unequal and profound effects on vulnerable segments of the community, emphasizing the need for ensuring gender considerations and social inclusion in disaster risk reduction planning. It is also evident that the current health system is largely catering to the requirements of the general population. However, many segments of the population, including older persons, that have special service requirements, warrant urgent attention. Declining fertility and reversing the dependency ratio towards an older workforce raises new challenges in productivity on the economic front. Anticipated changes in the labour market and increasing the retirement age call for new policies and legislation to protect older workers' rights. Rapid development in the telecommunication sector during the last two decades

provides a strong foundation for the country to transform into a digital economy and utilize technology-based solutions to enhance health systems.

VI. Recommendations

Considering the review findings of this paper, it is recommended for Sri Lanka to strengthen the health system to address the challenges and opportunities of population ageing in relation to climate change, disaster risk reduction and technological advancements. The policy framework for ageing needs to be updated, based on current requirements and expected changes in the country's demographic profile. The present policy is two decades old and strategies are contingent on population estimates using census data from 2012. It is crucial to expedite the detailed analysis of the population census done in 2023 for realistic projections and strategic decision-making. Policy space for climate change risk reduction and digital transformation needs to be more inclusive in order to have a holistic approach for successful outcomes. Compartmentalized policymaking hinders intersectoral ownership of policy intentions, collaboration among different agencies and financial commitments to achieve intended outcomes at the ground level. There is a need to transform vertical mechanisms of implementation to be cohesive at each level of the administrative structure to deliver outcomes successfully. This will allow agencies to reduce bottlenecks in the implementation process. Incorporating participatory models in policymaking, strategy development, implementation and monitoring will enable recipient communities to engage in the process that will, in turn, enhance the availability, affordability and acceptability of healthcare at the ground level.

Specific sectoral recommendations

Ageing and access to healthcare

- Expand geriatric training for doctors, nurses and community health workers, so that the needs of older persons are better addressed and they receive more tailored care.
- Strengthen home and community-based care to reduce dependency on hospital care, including through engaging older persons in health promotion activities and enhancing community resilience.
- Engage with civil society organizations on the ground, in particular in community settings, and include older persons in the planning and implementation of initiatives.
- Develop mobile health services for older persons in remote areas to reduce urban-rural divides and attain more equitable access.
- Enhance mental health support, including counselling and cognitive therapy to both prevent dementia, where possible, and better care for older persons when they have dementia.
- Strengthen inter-ministerial collaboration between health, social welfare and local government entities to provide holistic care and continued support to older persons in all aspects of their lives.

- Introduce older person friendly infrastructure in all hospitals and clinics (such as ramps, signage and seating) to improve accessibility within institutions and thereby improve care seeking.
- Increase law enforcement and accountability in protecting the rights of older persons in the workplace to prevent maltreatment, as well as improve working conditions and productivity.
- Promote public-private partnerships to develop older person friendly infrastructure in public spaces and thereby reduce financial burdens on State funds.
- Initiate accredited training opportunities for caregivers and community health/social workers in elder care, in order to provide professional recognition and high standard service delivery. This will encourage opening new opportunities in the patient/elderly care industry.
- Expand home and community-based services as alternatives to institutional care, as this improves community engagement in elderly care and results in better outcomes.

Ageing, climate change and disaster preparedness

- Invest in climate-resilient infrastructure, with special emphasis on catering to the needs of older persons and persons with disabilities to maintain connectivity and essential services during emergencies.
- Improve climate change and disaster-related data collection and vulnerability mapping in order to develop integrated national and local systems to monitor hazard exposure, infrastructure status and recovery outcomes. This enhances evidence-informed decision-making and timely action.
- Train healthcare workers on disaster preparedness and climate-sensitive health issues, comprising, among others, the provision of sexual and reproductive health services, including for older persons.

Technological advancement and health

- Promote digital health solutions (telemedicine and SMS reminders) tailored for older persons, which will overcome accessibility and mobility barriers in seeking care and support when necessary.
- Expedite the introduction of the National Electronic Health Record for all citizens, with interoperability functions between public and private sector points of care. This will mandate single health records across all points of care, thus improving clinical decisions and patient outcomes.

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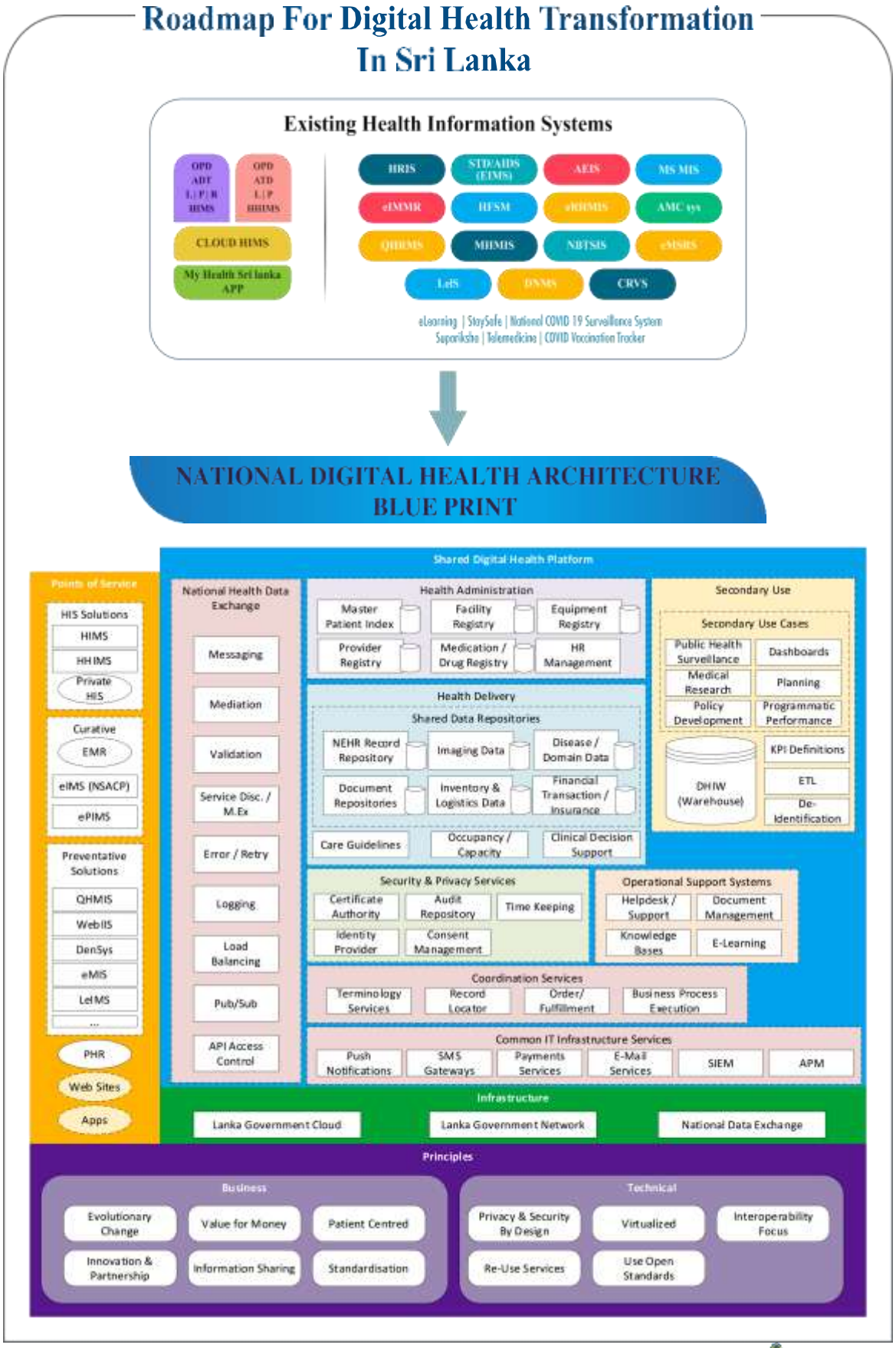
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