An introduction to ageing societies

A general overview and the Sri Lankan perspective

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Lesson objectives

- At the end of this lecture, a student should be able to:
  - Understand the concept of the ageing society
  - Describe the process that leads to the ageing society and its causes
  - Understand and be able to describe the socioeconomic consequences of the ageing society
  - Understand the impact of the ageing society on families
  - Briefly describe the concept of healthy ageing

First, some questions;

- What is the concept of the „ageing society"?
- Why is the ageing of the society important and what are its effects?
- What is the cause in your opinion?

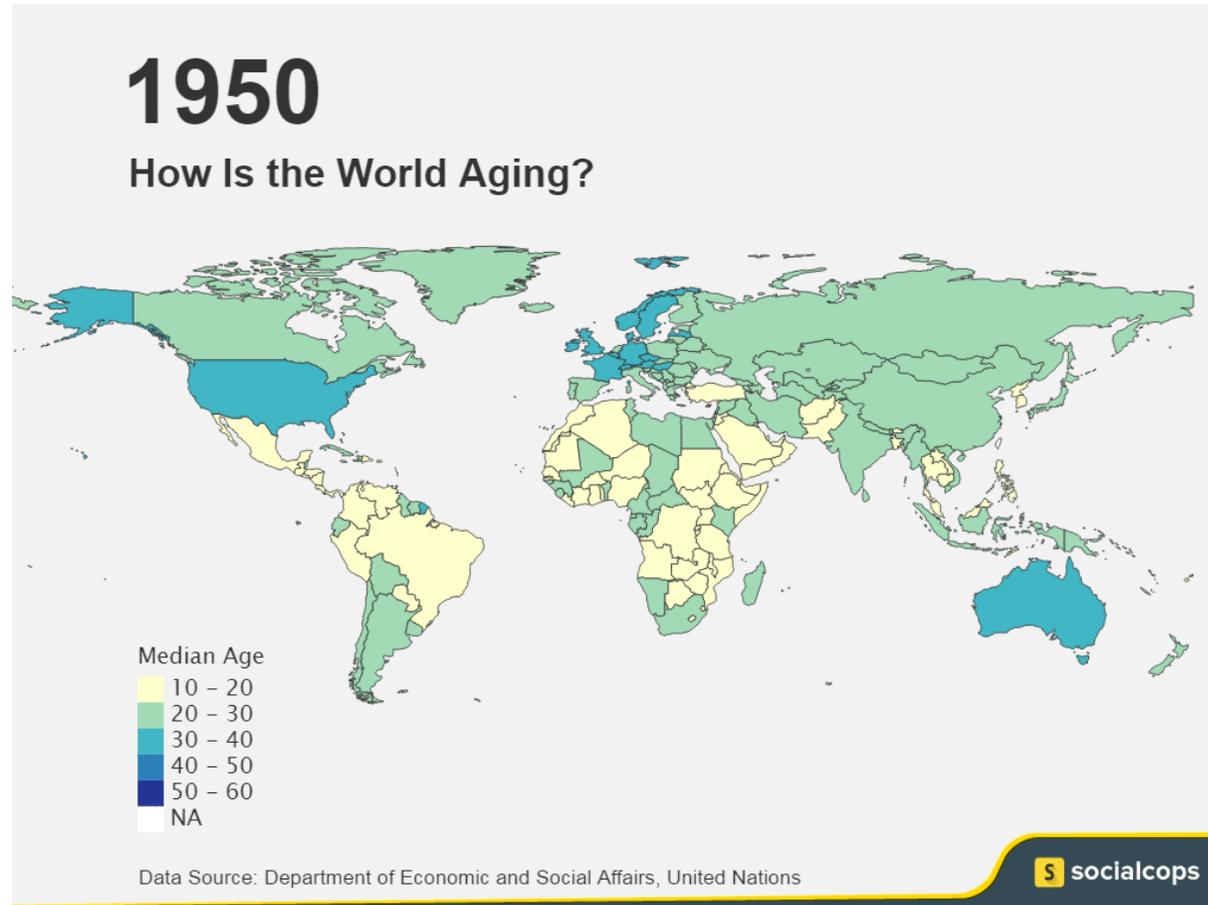In 2018 the number of people older than 64 years old surpassed the number of children under 5 years old.

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The ageing society

1950

How Is the World Aging?

Median Age
10 – 20
20 – 30
30 – 40
40 – 50
50 – 60
NA

Data Source: Department of Economic and Social Affairs, United Nations

socialcops

Population ageing is defined as the disproportional growth of the older population in a society, with regard to the overall population.

- You can see this observed (and projected) trend from the 1950's to the 2100's in the graphic.

- The median age is displayed, showing the midpoint of the population age per country.

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The ageing society - causes
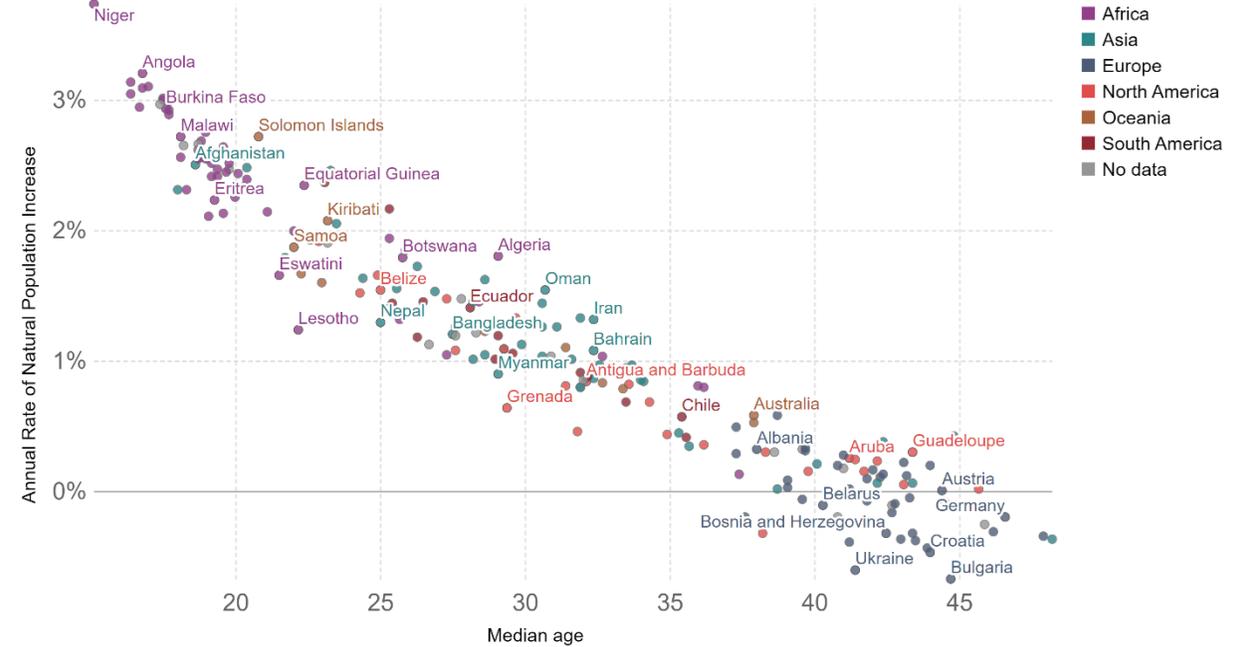
Median age vs. births per woman, 2020

The median age divides the population in two parts of equal size: that is, there are as many persons with ages above the median as there are with ages below the median.

Legend:
- Africa
- Asia
- Europe
- North America
- Oceania
- South America

1:4B
600M

Dots sized by **Population**

Countries labeled: Japan, South Korea, Latvia, Guadeloupe, China, Moldova, Australia, Brazil, Seychelles, Vietnam, India, Fiji, Algeria, Nepal, Philippines, Pakistan, Guatemala, Kenya, Ethiopia, Guinea, Uganda, Nigeria, Mali, Niger

Y-axis: Median age — 0 years, 10 years, 20 years, 30 years, 40 years
X-axis: Births per woman — 2, 3, 4, 5, 6
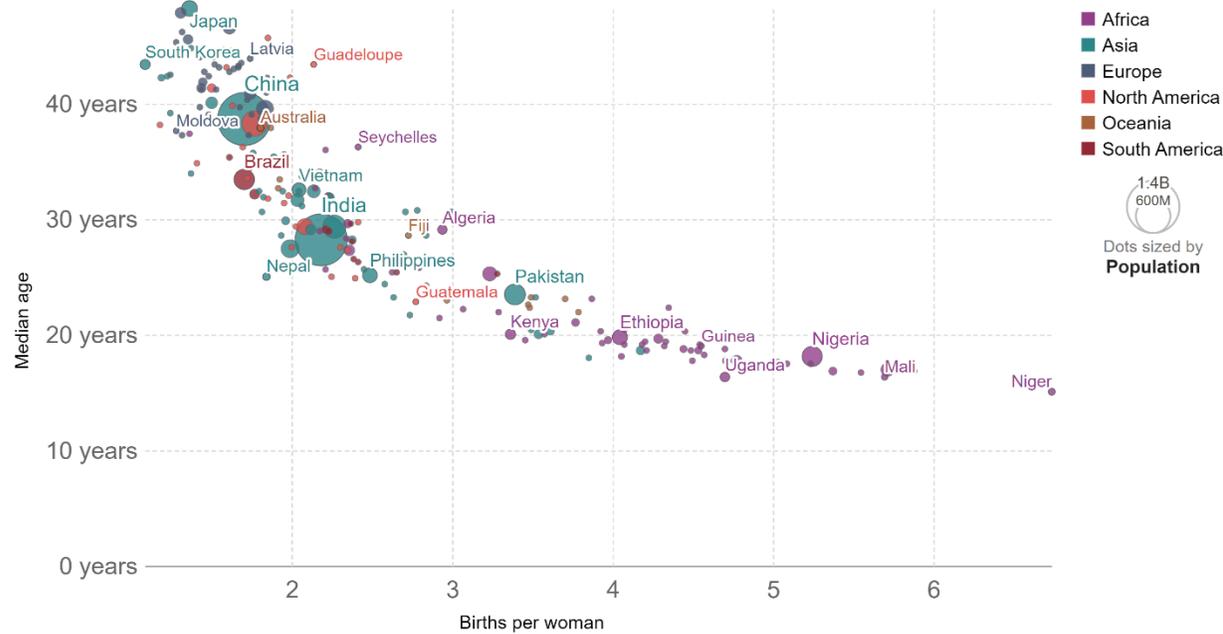
OurWorldInData.org/age-structure • CC BY

Population growth rate vs. median age, 2020

Median age is the age that divides the population in two parts of equal size, that is, there are as many persons with ages above the median as there are with ages below the median. In this metric of population growth changes due to migration are excluded and only births and deaths are taken into account.

Legend:
- Africa
- Asia
- Europe
- North America
- Oceania
- South America
- No data

Countries labeled: Niger, Angola, Burkina Faso, Malawi, Solomon Islands, Afghanistan, Eritrea, Equatorial Guinea, Kiribati, Samoa, Eswatini, Belize, Botswana, Algeria, Lesotho, Nepal, Ecuador, Oman, Bangladesh, Iran, Myanmar, Bahrain, Grenada, Antigua and Barbuda, Chile, Australia, Albania, Aruba, Guadeloupe, Austria, Belarus, Germany, Bosnia and Herzegovina, Ukraine, Croatia, Bulgaria

Y-axis: Annual Rate of Natural Population Increase — 0%, 1%, 2%, 3%
X-axis: Median age — 20, 25, 30, 35, 40, 45

OurWorldInData.org/age-structure • CC BY

Our World in Data

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The ageing society, stages; STAGE 1


Stage 1: Population Pyramid, Niger, 2020
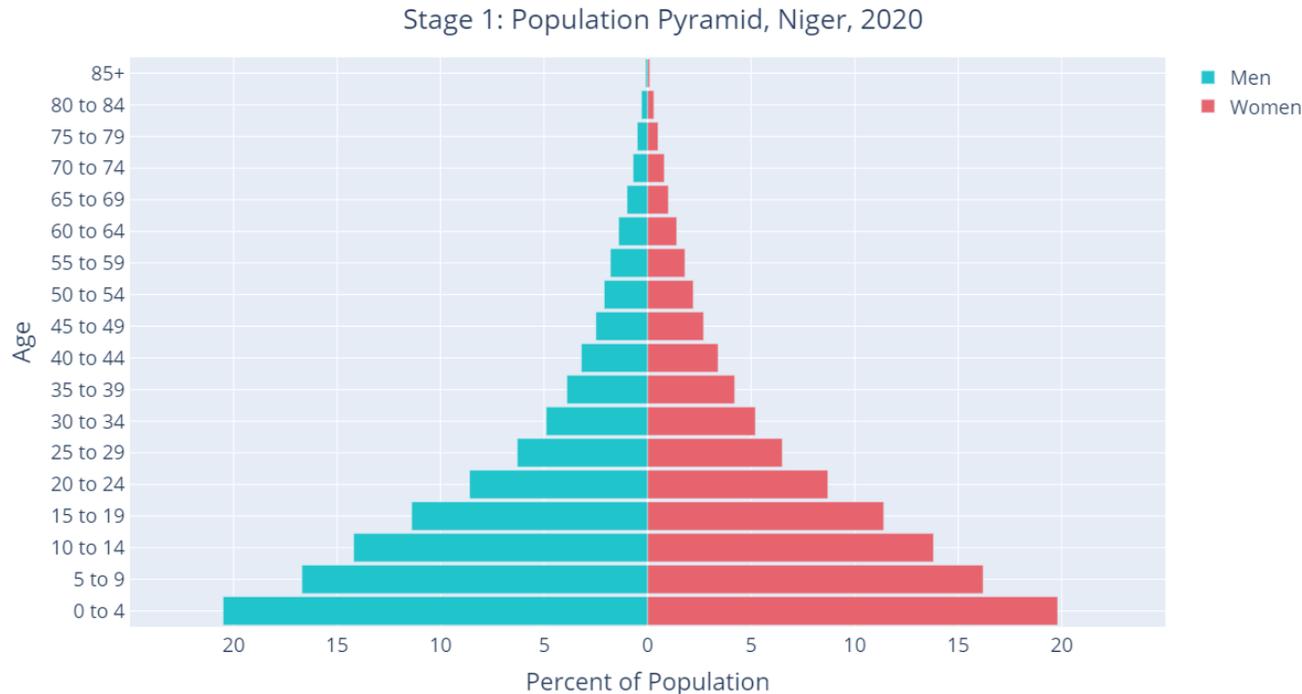
- Population growth is in the **high stationary stage**
- Birth rate is high
- Death rate is high
- This means that Niger has a _____young_____ population, reflecting _____many_____ births, but those born have a _____low_____ chance of reaching old age.
- In this stage, the population is _____either slowly increasing or stagnating._____
- The percentage of people aged 65+ is 2.7%

The ageing society, stages; STAGE 2

Stage 2: Population Pyramid, Ghana, 2020
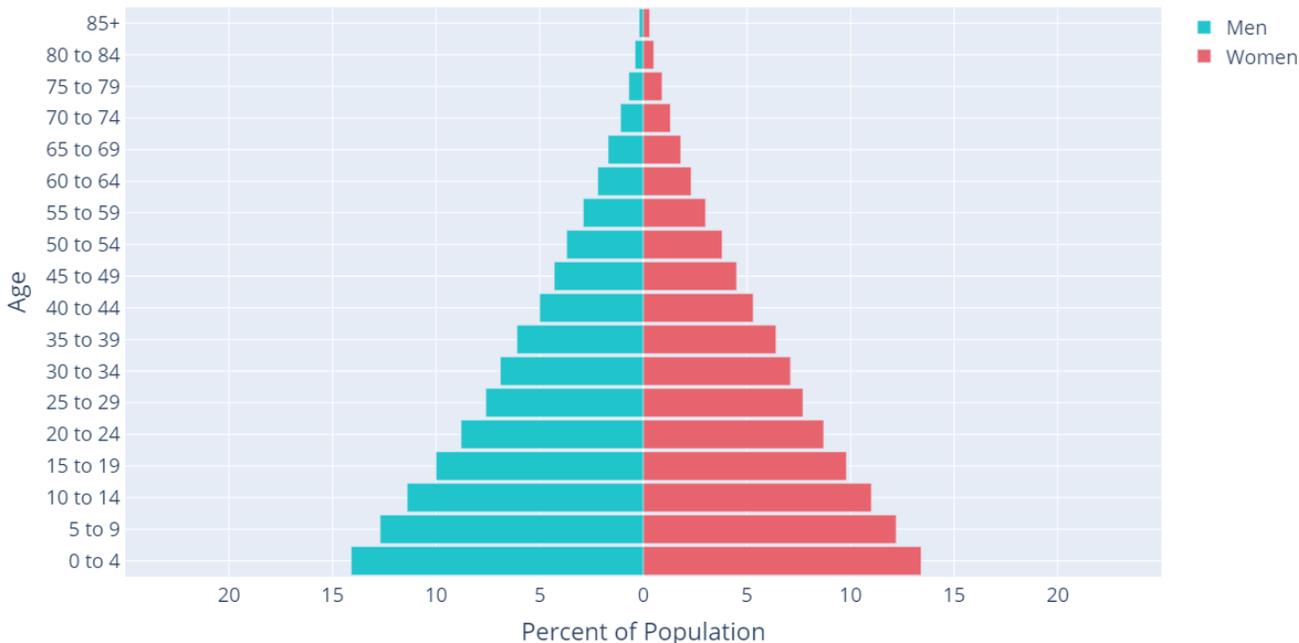
- Population growth is in the **early expanding stage**
- Birth rate is high
- Death rate is starting to decline
- This means that Ghana has a ___young___ population, reflecting ___many___ births, but those born have a ___moderate___ chance of reaching old age.
- In this stage, the population is ___rapidly increasing.___
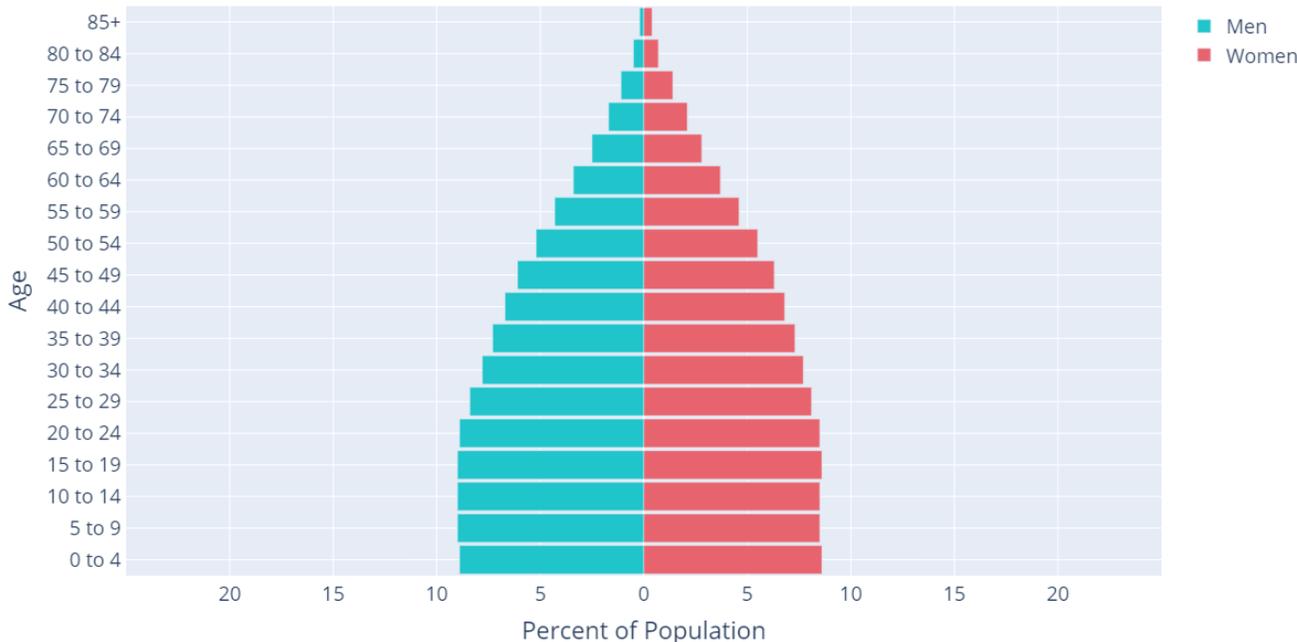- The percentage of people aged 65+ is 4.4%

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The ageing society, stages; STAGE 3

Stage 3: Population Pyramid, India, 2020

- Population growth is in the **late expanding stage**
- Birth rate is starting to decline
- Death rate is reduced significantly
- This means that India has a <u>young-medium aged</u> population, reflecting <u>a moderate amount of</u> births, but those born have a <u>fair</u> chance of reaching old age.
- In this stage, the population is <u>still rising considerably</u>.
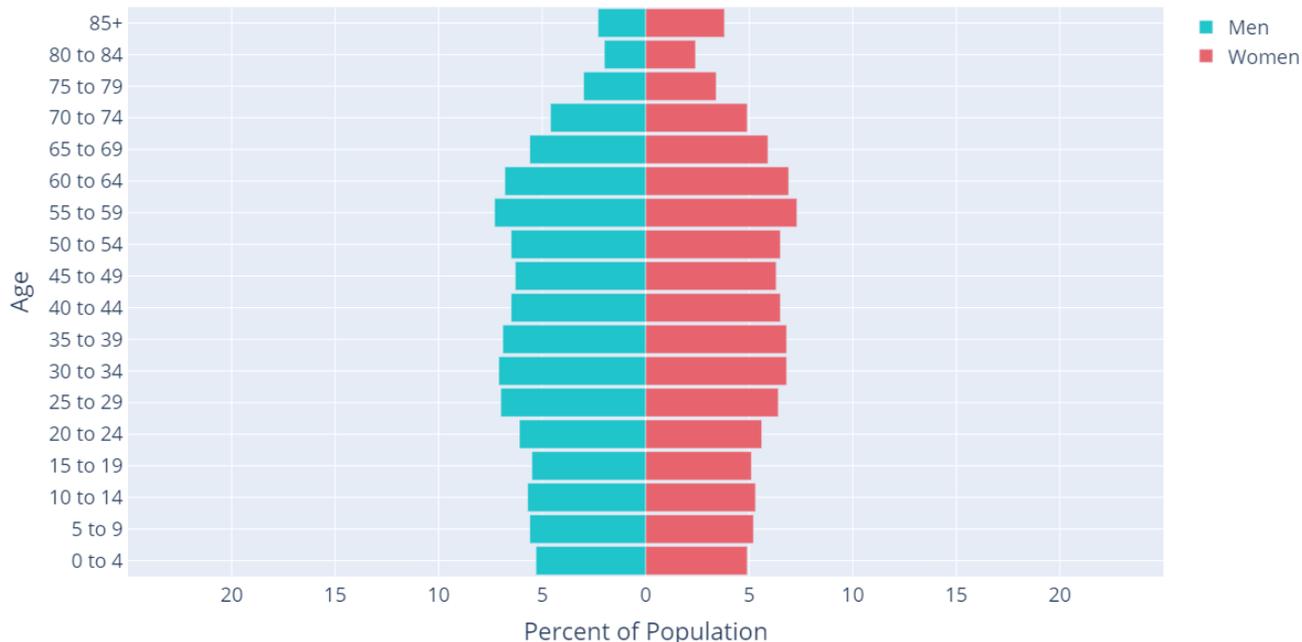- The percentage of people aged 65+ is 6.7%

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The ageing society, stages; STAGE 4

Stage 4: Population Pyramid, Canada, 2020

- Population growth is in the **low stationary stage**

- Birth rate is low

- Death rate is low

- This means that Canada has an __age-wise equally distributed__ population, reflecting __relatively few__ births, but those born have a ___high___ chance of reaching old age.

- In this stage, the population is __either slowly increasing or stagnating.__

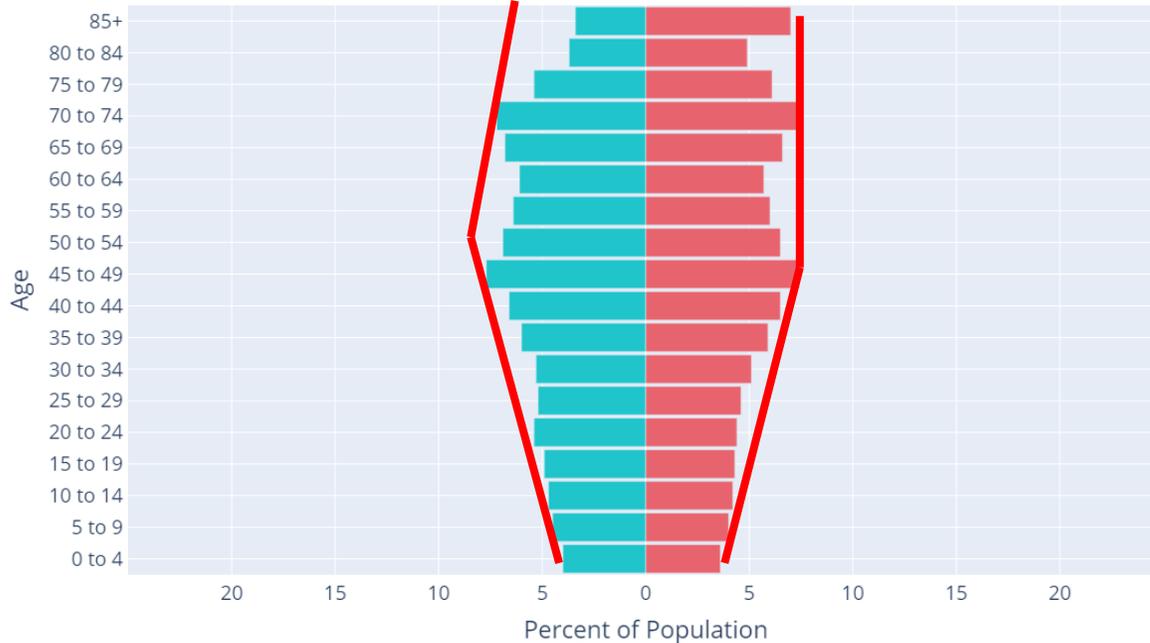- The percentage of people aged 65+ is 19%

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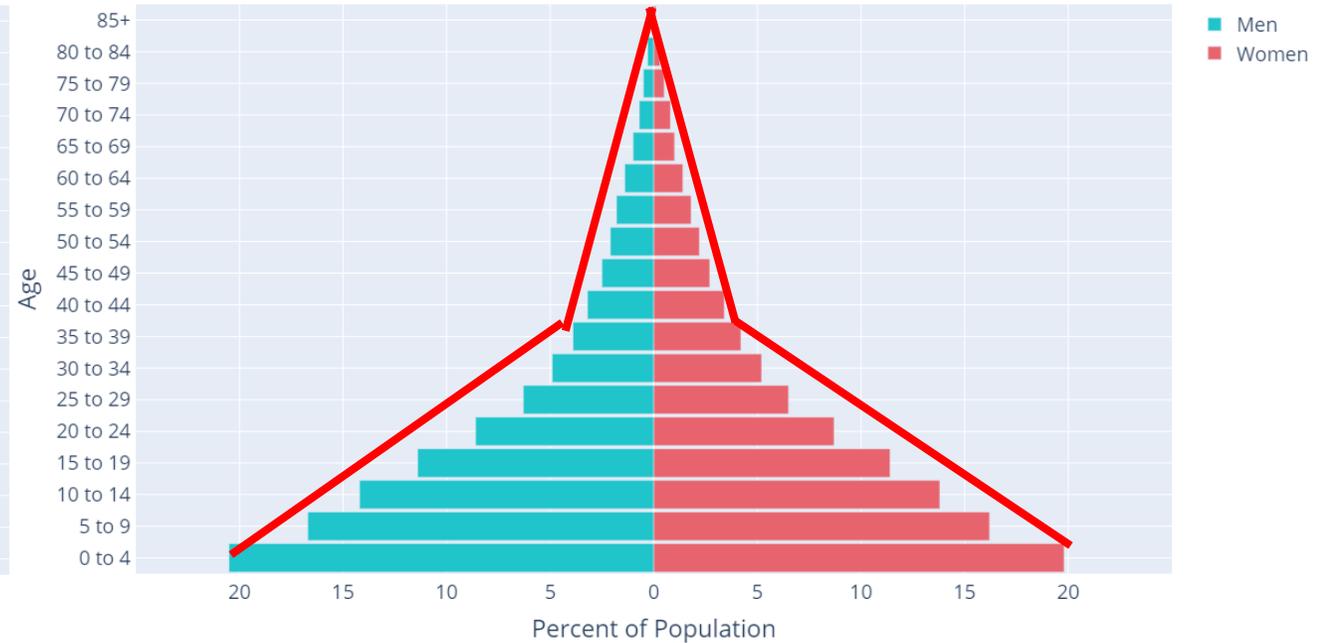Capacity building in Higher Education

The ageing society, stages; STAGE 5

Stage 5: Population Pyramid, Japan, 2020

Stage 1: Population Pyramid, Niger, 2020

Note that in comparison to Niger, the shape of the population pyramid is becoming inverted in Japan (narrower at the base and wider towards the top).

The ageing society - consequences

The Demography of the World Population from 1950 to 2100
Shown is the age distribution of the world population – by sex – from 1950 to 2018 and the *UN Population Division*'s projection until 2100.

Our World in Data
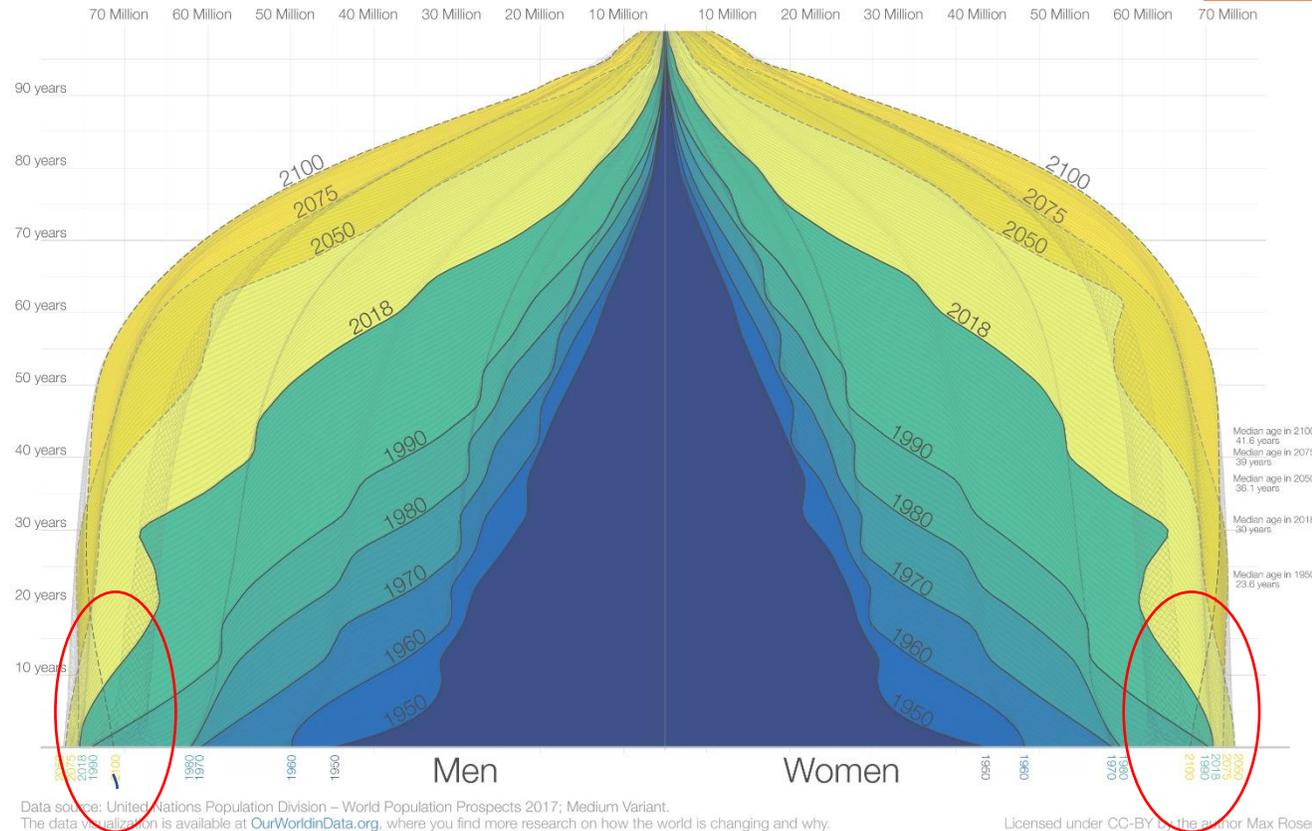
- Note that in the world population demography for 2100, a narrower base of the population pyramid, compared to the top, is expected.

- What do you think, can this have any consequence for the economy, society, living conditions of people?

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The ageing society - consequences

- To understand what consequences the ageing of a society can have, we first have to understand a few concepts;
    - The 3-group split of people in demography
        - children and young adolescents (under 15 years old)
        - the working-age population (15-64 years) and
        - the elderly population (65 years and older)
    - Dependency
- https://ourworldindata.org/grapher/age-dependency-ratio-of-working-age-population
- https://www.tandfonline.com/doi/full/10.1080/00036846.2016.1167823

The ageing society – consequences; Dependency

Let's take the first and the last country we examined when discussing population pyramids as an example. On the right, the data for Niger is presented and on the left, the data for Japan.

Age dependency breakdown by young and old dependents, Niger, 1960 to 2020

Age dependency ratio is the ratio of dependents (either children aged 0-14 years, or older populations aged over 64 years) to the working age population (15-64 years). Data shows the relative composition of the dependent population between young and old.
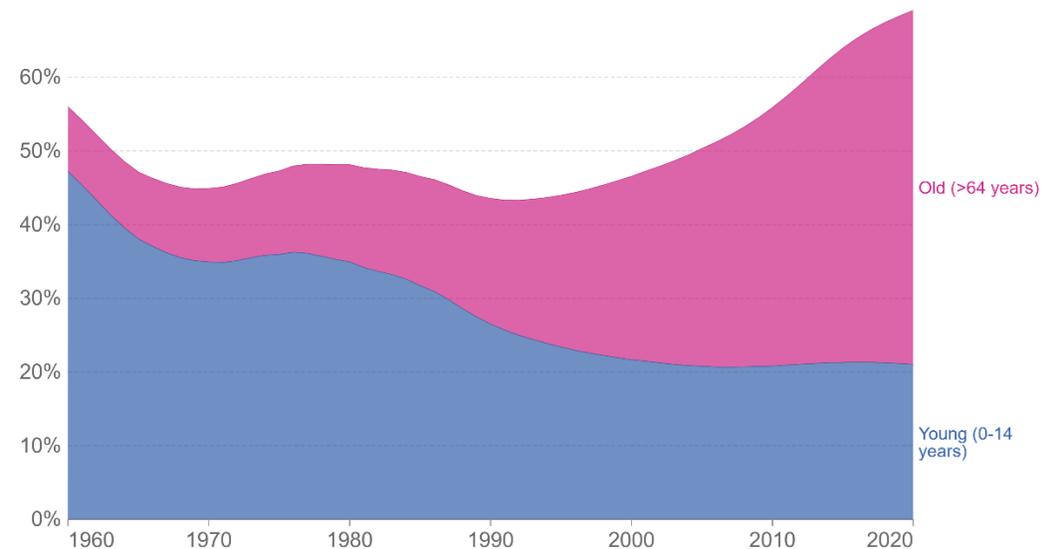
Old (>64 years)
Young (0-14 years)
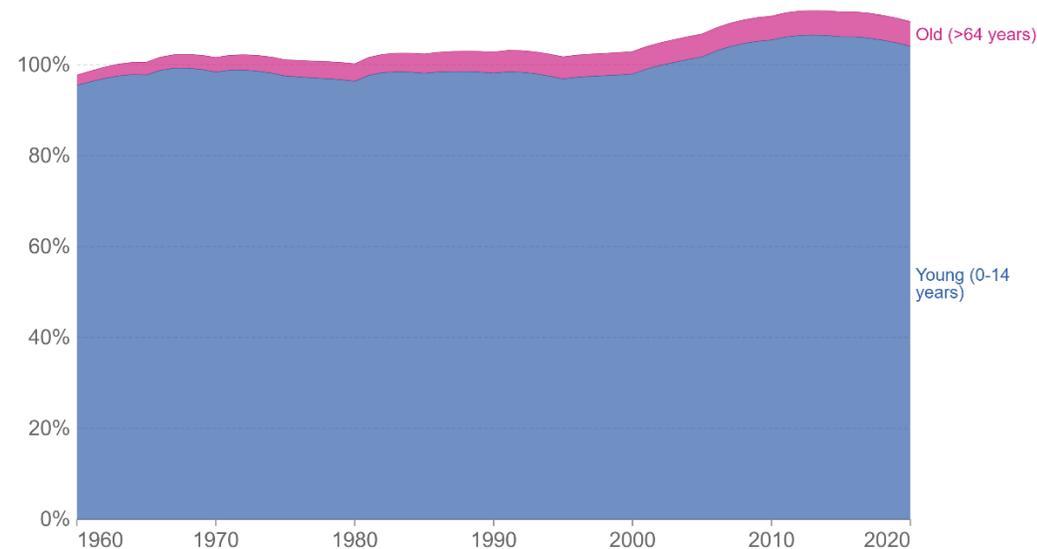
Source: World Bank based on data from the UN Population Division
OurWorldInData.org/world-population-growth • CC BY

Age dependency breakdown by young and old dependents, Japan, 1960 to 2020

Age dependency ratio is the ratio of dependents (either children aged 0-14 years, or older populations aged over 64 years) to the working age population (15-64 years). Data shows the relative composition of the dependent population between young and old.

Old (>64 years)
Young (0-14 years)

Source: World Bank based on data from the UN Population Division
OurWorldInData.org/world-population-growth • CC BY

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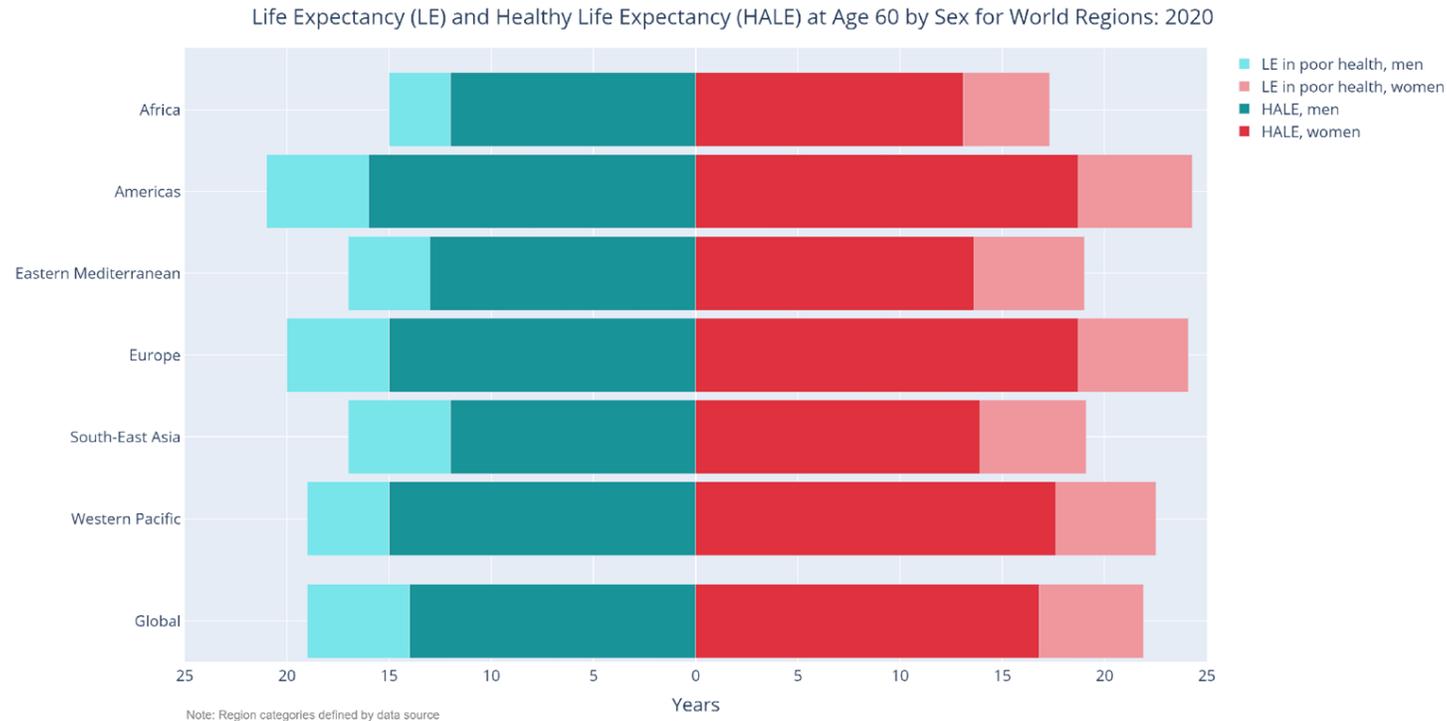Capacity building in Higher Education

The ageing society – consequences; Dependency

- Not everything is bleak, however. An important thing to keep in mind is also that not only the age of the population is rising, due to lower mortality, but also the ability of people to be effective, productive and involved (in labour and society) later in life.

- https://demographic-challenge.com/files/downloads/9ed31aa1067a5d6a50c644c46812c0fa/dc_remeasuring_aging_sanderson_scherbov_science_2010.pdf

- The full picutre of dependency is thus somewhat uncertain.

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The ageing society – consequences; Health

Life Expectancy (LE) and Healthy Life Expectancy (HALE) at Age 60 by Sex for World Regions: 2020

- LE in poor health, men
- LE in poor health, women
- HALE, men
- HALE, women

Note: Region categories defined by data source

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The ageing society – SRI LANKA today
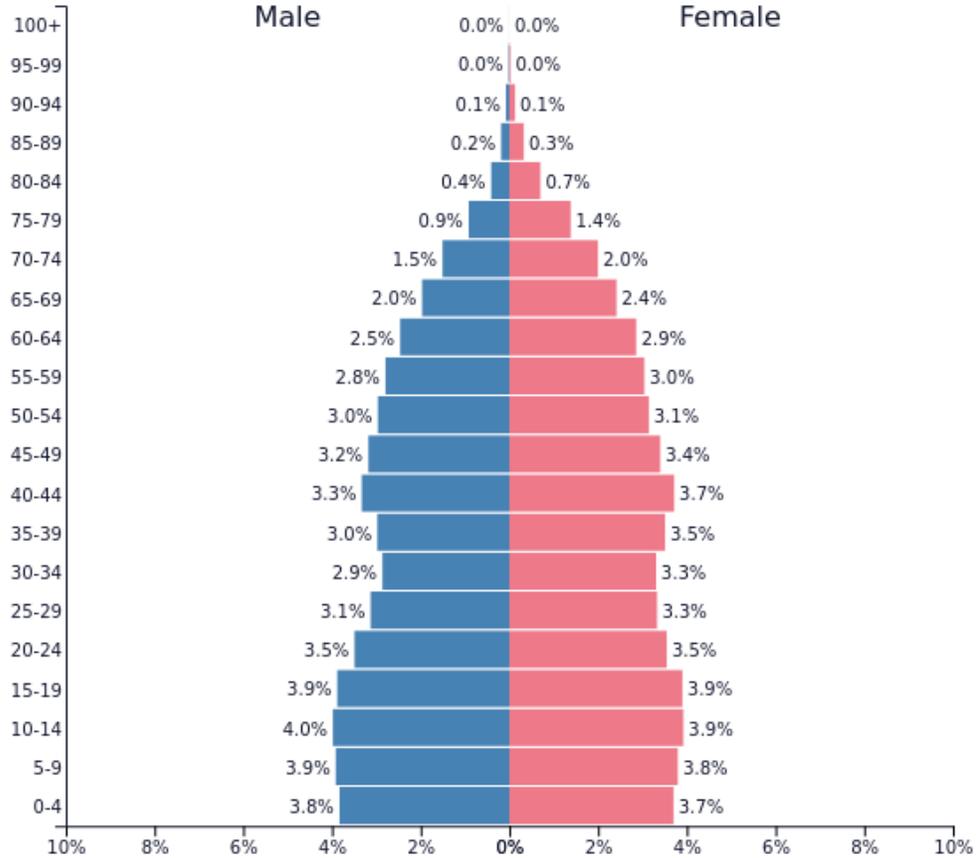
Sri Lanka - 2022
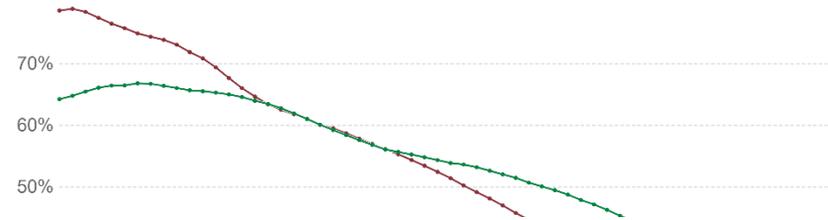Population: 21,575,843

PopulationPyramid.net

Youth dependency ratio, 1960 to 2020
The ratio of younger dependents – people younger than 15 – to the working-age population – those ages 15-64. Data are shown as the number of dependents per 100 working-age people.

Size of young, working-age and elderly populations, Sri Lanka, 1950 to 2020
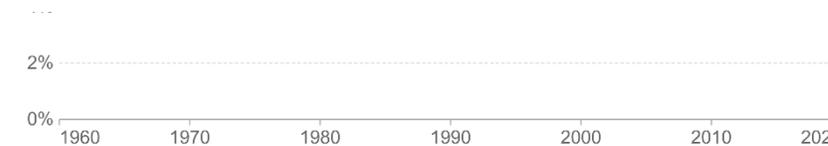Historic estimates from 1950 to 2015, and projected to 2100 based on the UN medium scenario.
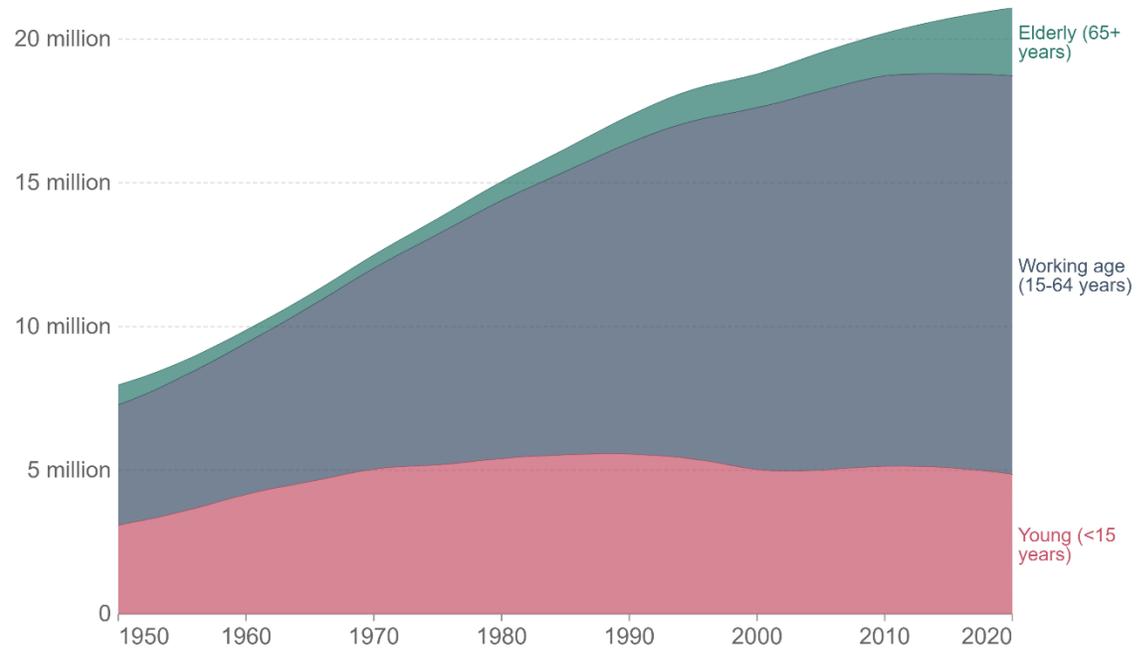
Source: UN World Population Prospects (2017)   OurWorldInData.org/age-structure • CC BY

Source: World Bank based on data from the UN Population Division   OurWorldInData.org/age-structure • CC BY

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The ageing society - HOMEWORK

- Use the data and tools in the below links to;
  1. Construct the population pyramid for Sri Lanka for the years 2022, 2050 and 2100
     - Comment on the population structure in each year and classify them according to the five stage model.
     - Discuss the possible causes for the changes observed and support them with projections of data
  2. Construct the dependency graphs for Sri Lanka for the years 2022, 2050 and 2100
     - Comment on the dependencies in each year and discuss how this can affect the economy, society and living conditions.
     - Present some ideas on how to best mitigate the negative effects of population ageing
  3. LINKS:
     1. https://www.ined.fr/en/everything_about_population/graphs-maps/world-maps-interactiv/
     2. https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=3d832796999042daae7982ff36835e2e
     3. https://ourworldindata.org/age-structure#the-global-population-pyramid
     4. https://www.populationpyramid.net/world/2022/

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Sources and further reading

Mandatory

- Sanderson, W. C., & Scherbov, S. (2010). Remeasuring aging. *Science, 329*(5997), 1287-1288. Available from: https://demographic-challenge.com/files/downloads/9ed31aa1067a5d6a50c644c46812c0fa/dc_remeasuring_aging_sanderson_scherbov_science_2010.pdf

- *An Aging World: 2020.* (n.d.). Retrieved 1 September 2022, from https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=3d832796999042daae7982ff36835e2e

- *Age Structure - Our World in Data.* (n.d.). Retrieved 1 September 2022, from https://ourworldindata.org/age-structure#the-global-population-pyramid

- Harper, S. (2019). Living Longer within Ageing Societies. *Journal of Population Ageing 2019 12:2, 12*(2), 133–136. https://doi.org/10.1007/S12062-019-09248-4

Additional

- *World Population Maps - Graphs and maps - Ined - Institut national d'études démographiques.* (n.d.). Retrieved 1 September 2022, from https://www.ined.fr/en/everything_about_population/graphs-maps/world-maps-interactiv/

- *Population of WORLD 2022 - PopulationPyramid.net.* (n.d.). Retrieved 1 September 2022, from https://www.populationpyramid.net/world/2022/

- *World Population Prospects - Population Division - United Nations.* (n.d.). Retrieved 1 September 2022, from https://population.un.org/wpp/

Advanced

- Kalinina, V. (2019). *Fiscal challenges and inclusive growth in ageing societies.* https://epale.ec.europa.eu/sites/default/files/c553d8d2-en.pdf

- *Welcome to MicroWELT! — microWELT documentation.* (n.d.). Retrieved 1 September 2022, from https://www.microwelt.eu/

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