Demographic and Human Capital Trends

Europe Current Evolution
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World Population Projections

- Post Secondary
- Upper Secondary
- Lower Secondary
- Primary
- Incomp. Primary
- No Education
- Pop < 15 yrs

IIASA Medium Scenarium
TFR by Level of Education

**FIGURE 2** Total fertility rates by level of educational attainment. (*Source: Several DHSs*)
Assuming identical education-specific fertility trends different education scenarios make a difference of more than 1 billion people by 2050.

- CEN gives the world population trend according to the most pessimistic scenario assuming that no new schools will be built
- FT gives the most optimistic scenario assuming that countries can achieve the rapid education expansion that South Korea achieved
India: Alternative Population and Human Capital Scenarios
This book addresses systematically and quantitatively the role of educational attainment in global population trends and models. Six background chapters summarize past trends in fertility, mortality, migration, and education; examine relevant theories and identify key determining factors; and set the assumptions that are subsequently translated into alternative scenario projections to 2100. These assumptions derive from a global survey of hundreds of experts and five expert meetings on as many continents. Another chapter details their translation into multidimensional projections by age, sex, and level of education. The book's final chapters analyse the results, emphasising alternative trends in human capital, new ways of studying ageing and the quantification of alternative population, and education pathways in the context of global sustainable development. An appendix and associated web link present detailed results for all countries. The book shows that adding education to age and sex substantially alters the way we see the future.
Demographic Support Ratio: Population 15-64 / Population 65+

European Union, Support ratio

Year

Support ratio

Fractiles


0.975
0.8
0.6
0.4
0.2
0.025

Median
Redefining Age and Ageing
ERC Adv. Grant, Sergei Scherbov (IIASA)

\[ OADR = \frac{\text{Number of people aged 65 years or older}}{\text{Number of people aged 20 to 64}} \]

the VID and IIASA: the prospective old-age dependency ratio. In the POADR, the threshold of being old is not fixed but linked to life expectancy. People are considered old when the average remaining life expectancy in their age group is less than 15 years.

\[ POADR = \frac{\text{Number of people older than the old-age threshold}}{\text{Number of people aged 20 to the old-age threshold}} \]
Conventional old-age dependency ratio as projected for 2030

- Yellow: more than 48%
- Light Yellow: 38% to 47.9%
- Light Blue: 28% to 37.9%
- Dark Blue: less than 27.9%
- Gray: no data
The map shows the prospective old-age dependency ratio as projected for 2030. The ratio is defined as the number of people in age groups with life expectancies of 15 or fewer years, divided by the number of people at least 20 years old in age groups with life expectancies greater than 15 years. The color coding indicates different percentage ranges:

- **Orange**: more than 28%
- **Light Orange**: 23% to 27.9%
- **Light Blue**: 18% to 22.9%
- **Dark Blue**: less than 17.9%
- **Gray**: no data
Focus on the Human Resource Base for Sustainable Development

- Human Resources refer to the ability of people to help themselves and help others.
- They crucially depend on age, health, education, motivation, social networks etc.
- Education is central: Learning from the first day to old age (skills and empowerment).
- Formal education (school) is only one aspect of this that is fairly easy to measure.
What is the education effect?

We have good reasons to assume “functional causality” from education to health and income. Education is not just a proxy for SES.

• Every learning experience builds new synaptic connections in our brains and makes us “physiologically different” (Eric Kandel)

• Enhancement of cognitive skills
  – change risky behavior
  – extend personal planning horizon
  – learn from past damage

• Better access to relevant information

• Improvement of health, physical well-being and higher income levels
Complementing primary education with secondary education in broad segments of the population is likely to give a strong boost to economic growth.

Planned Sustainable Development Goal 2015:

“By 2030 ensure universal, free, equitable access to and completion of quality primary and secondary education for all girls and boys leading to effective learning outcomes”.

Wolfgang Lutz, Jesus Crespo Cuaresma, Warren Sanderson (all IIASA)
Main Messages of IIASA Report to UNECE

**Observation:** The UNECE Region is in the late middle stages of a fundamental transformation from population growth to population ageing.

**Analysis:** New analytical tools and focus: From the importance of population numbers to population quality (education and health).

**Policy:** Human capital in the form of education and health is what governments can most readily influence.
Making the scientific findings policy relevant

Strengthening the Human Resource Base for Sustainable Development

A Population Policy Rationale for the Twenty-First Century

WOLFGANG LUTZ

Population and Development Review

In the twenty-first century most countries will have ended the rapid population growth and will see their populations stabilize decline. What, then, should be the role of population policy? Should be long-term constancy of population size, probably calling for pro-pro-immigration policies? Or should policies seek to influence the...
Policy priorities in the context of population ageing

• **Higher education and skill levels** are important for maintaining economic growth in ageing societies – take account of the delay between investments and benefits. Life long learning.

• **Higher labor force participation** of women and men of all ages. – Possibly combined with less hours of work per week.

**Conclusion:** The negative effects of ageing have been exaggerated. They can be largely ameliorated by these two policies: Upgrading skill levels and increases in Labor Force Participation.
Forecasting Societies' Adaptive Capacities to Climate Change (ERC Adv. Grant to WL, IIASA)