Two unique features of the book

It gives the **most comprehensive scientific assessment** of what is known about the drivers of fertility, mortality and migration in all countries of the world over the rest of the century:

**Basis:**
- State of the art review chapters by 26 Lead Authors and 46 Contributing Authors
- Online questionnaire with over 150 arguments to be assessed in peer review manner (550 answers)
- Five Meta-expert meetings on five continents (with 68 participants)
Adding education to age and sex

It gives the first set of consistent projections by age, sex and level of education for all countries of the world to 2100 and alternative scenarios.

This matters because:

• Education is an important source of population heterogeneity. Almost universally more educated women have fewer children and lower child mortality and more educated adults live longer.

• Education is a crucial determinant of individual empowerment and human capital is a key driver of socio-economic development (public health, economic growth, quality of institutions and democracy, and adaptive capacity to climate change).
Singapore 1985: A society divided into two classes:
* Modern highly educated and wealthy young
* Uneducated and poor elderly
Singapore - 2010

5.1 Millions

Males

Females

Age (in Years)

Population in Thousands

- No Education
- Primary
- Secondary
- Tertiary
Singapore - 2020 SSP2

5.7 Millions

Males

Females

Age (in Years)

Population in Thousands

- No Education
- Primary
- Secondary
- Tertiary
Singapore - 2030  SSP2

6.1 Millions

Males

Females

Age (in Years)

Population in Thousands

- No Education
- Primary
- Secondary
- Tertiary
Fertility by Education in Kenya Empirical (2010) and Assumed
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
Adding Education to Age and Sex:
What is the education effect?

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

• Every learning experience builds new synapses 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 and physical well-being
• Higher income at the individual and household level
New scenarios used by the global environmental change research community

- **IPCC SRES-Scenarios** (2000 – group led by IIASA)
  Only socio-economic variables used: Total population size and GDP. Pop serves as denominator.

- **SSPs (Shared Socio-economic Pathways) 2013**
  Scenarios with the “human core” by age, sex and level of education produced by IIASA – identical to these new population scenarios.

Focus on universal primary and secondary education and (basic) health.
- Valid for all countries in the world (poor and rich ones alike)
- Fully consistent with human rights
- At the heart of MDGs and SDGs

Specific focus on female education:
- Empower women within family and society to exercise their reproductive rights (want fewer and have fewer children)
- Moderate rapid population growth in high fertility countries
- Contribute to poverty reduction and economic growth
- Increase female labor force participation and productivity
- Contribute to quality of institutions and democracy