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# Understanding Population Projections

## Assumptions Behind the Numbers

JASON BREMNER OF THE POPULATION REFERENCE BUREAU

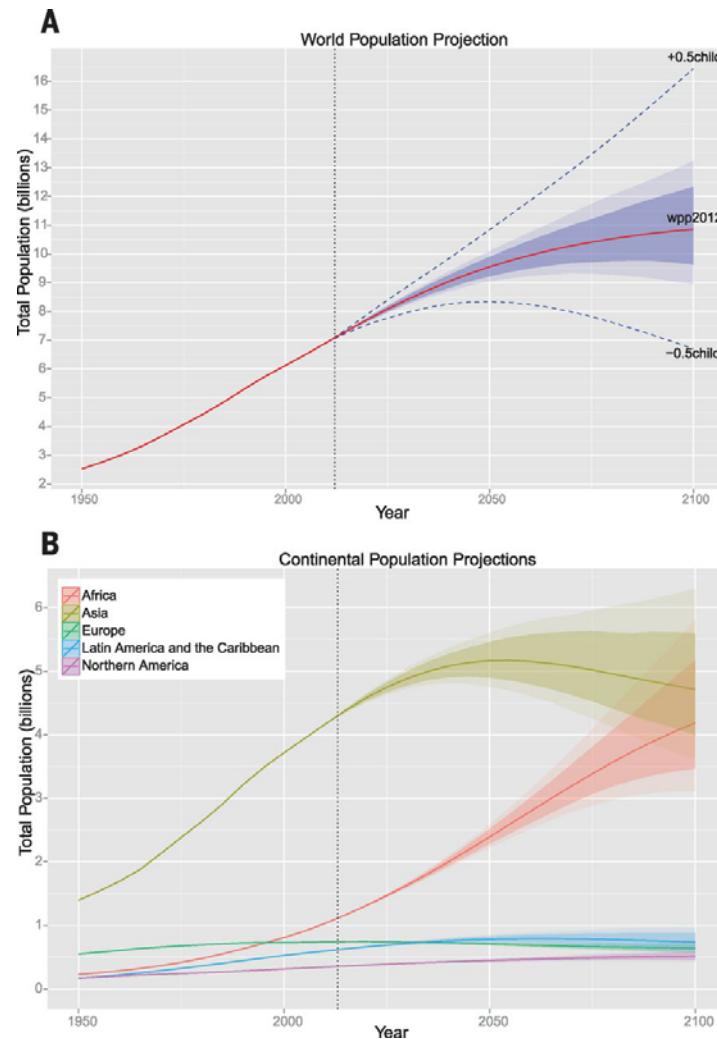
September 2014

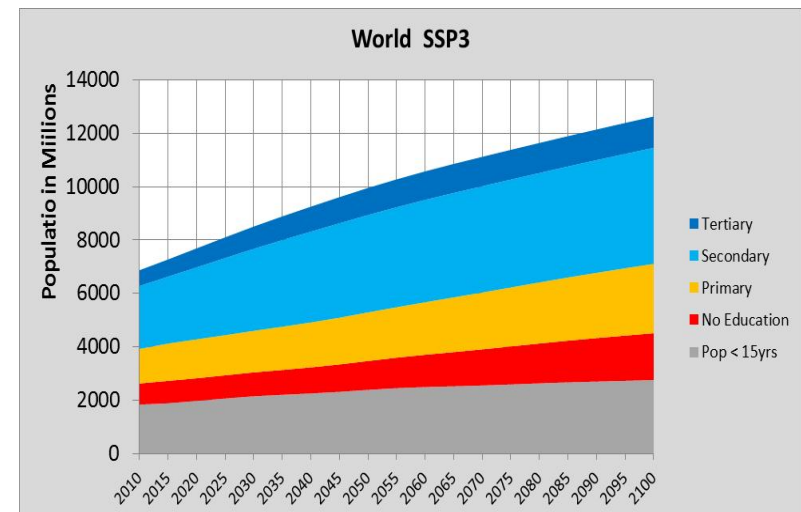
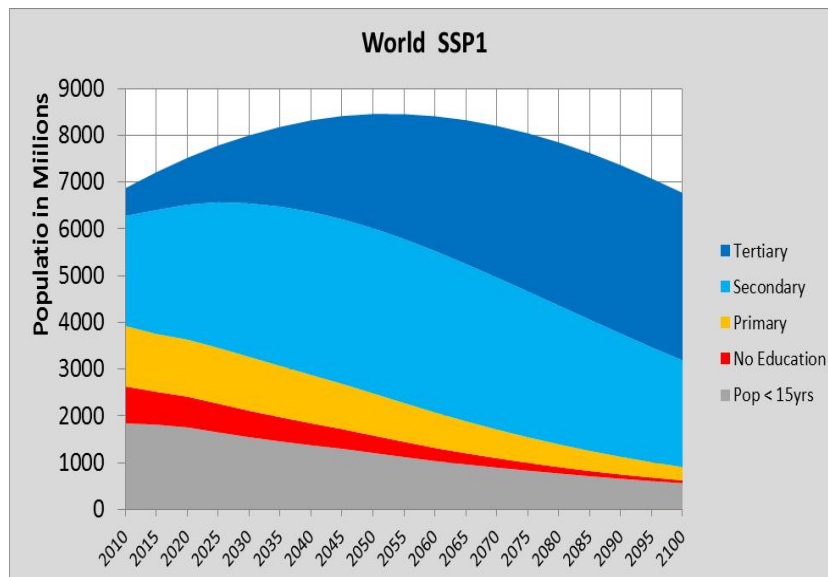
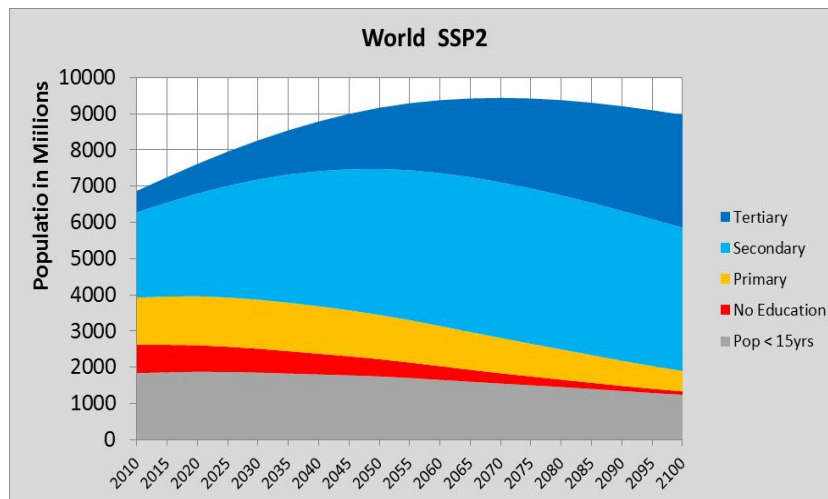
POPULATION REFERENCE BUREAU | [www.prb.org](http://www.prb.org)

# Population

- Projections are critical at various scales to assess future demands for:
  - Resources - food, water, energy
  - Services - health, education
  - Economics - jobs, productivity, infrastructure
- Demographers use their best tools to develop estimates of future population size and composition...

**Fig. 1 World and continental population projections.(A) UN 2012 world population projection (solid red line), with 80% PI (dark shaded area), 95% PI (light shaded area), and the traditional UN high and low variants (dashed blue lines).**





# MOST USERS ARE NOT DEMOGRAPHERS

# Projections used in diverse ways

36

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 Food and Agriculture Organization of the United Nations

2014

The State of Food and Agriculture



Innovation

A UN study sparks fears

Sep 24th 2014 | International

RELEASE DATE: SEP 29, 2014

likely to stabilize in

al human population will stabilize around 9

Demographic Dividend Analysis Generates Support for Family Planning in Uganda



5)

Accelerating social and economic transformation through universal access to voluntary family planning

ational Conference  
Family Planning  
July 28-30

Plan a small manageable family for a better life

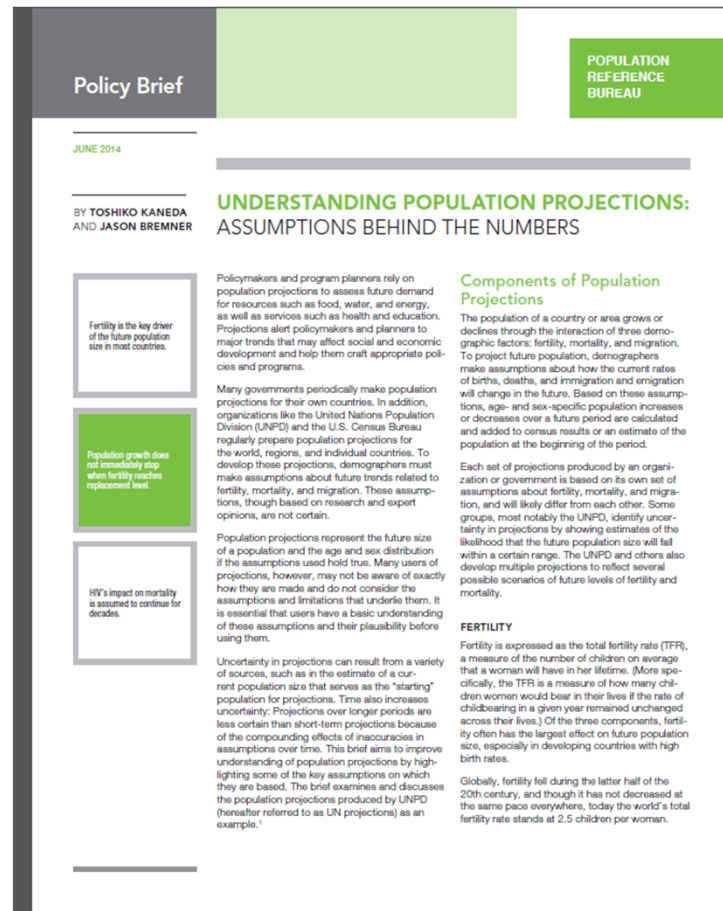
pace

President Yoweri Museveni of Uganda (center) launches a new report on the demographic dividend, authored by the Uganda National Planning Authority with support from the Health Policy Project, at the National Family Planning Conference in Kampala on July 28. He is joined by Dr. Kisamba

# Challenges for projection users

- Basic understanding of how different projections are developed and what differentiates high, low, medium.
- Understanding underlying assumptions
- Principle of uncertainty

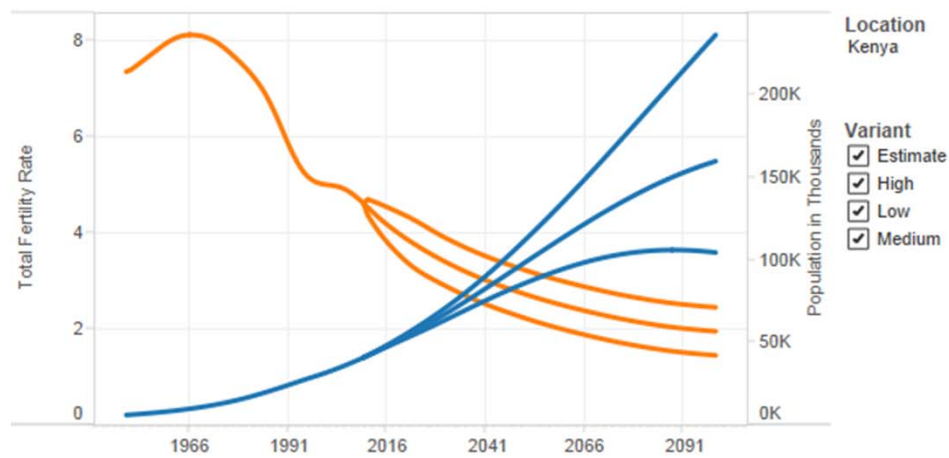
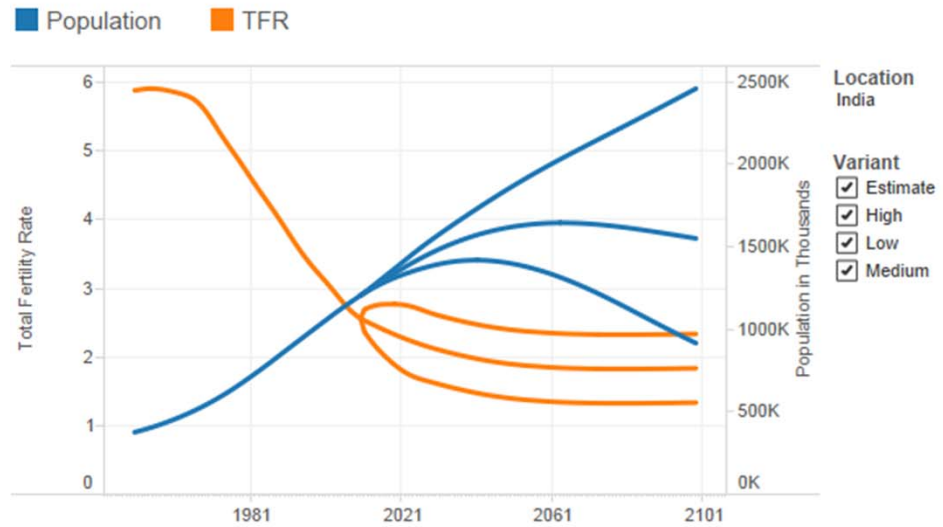
# Improvement of projections is critical but so is improving understanding





# As Fertility Changes, So Do Population Projections

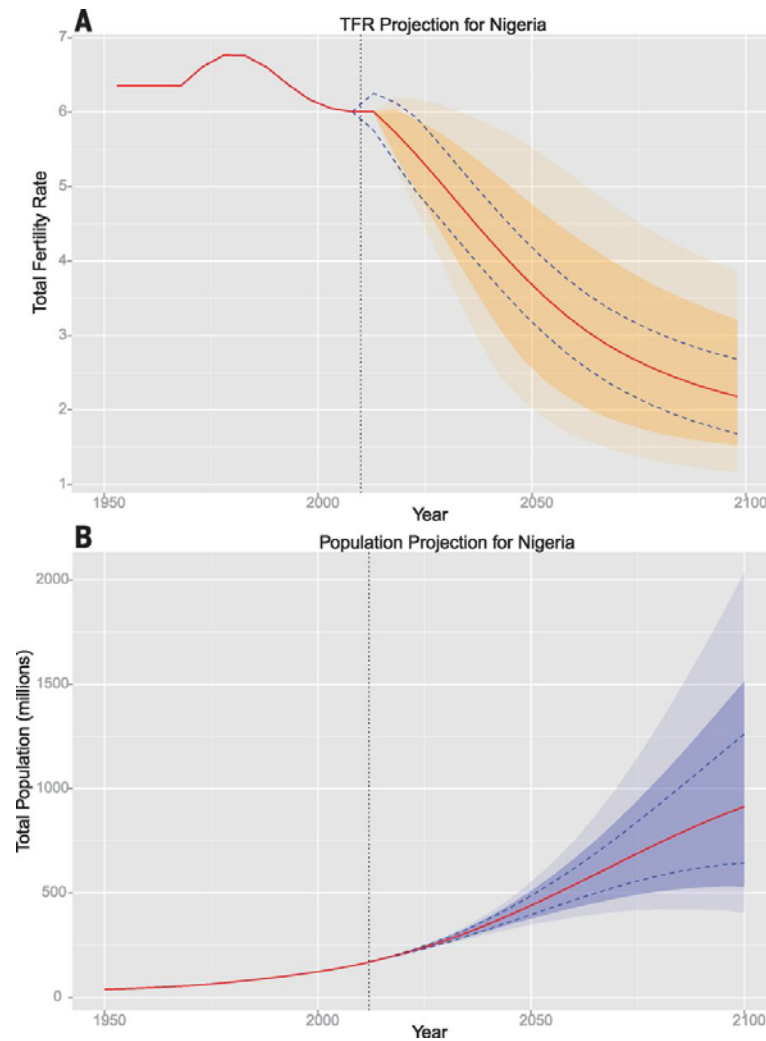
Compare Countries Using the Graphs Below



Source: United Nations Population Division, World Population Prospects: The 2012 Revision.



**Fig. 2 TFR and population projections for Nigeria. UN 2012 projection of (A) TFR and (B) total population for Nigeria (solid red lines), with 80% PI (dark shaded areas), 95% PI (light shaded areas), and traditional UN high and low variants (dashed blue lines).**



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**P Gerland et al. Science 2014;346:234-237**





Wittgenstein Centre

FOR DEMOGRAPHY AND  
GLOBAL HUMAN CAPITAL

Indicator:

Educational Attainment Distribution

Choose Future Scenario:

Rapid Development (SSP1)

Time (Data Tab):

2010 2100

Year (Map and Pyramid):

2010 2100

Choose Area:

World

Choose Region:

Choose Country:

☐ Include All Countries in Selected Area

☐ Include All Countries in Selected Region

Note: Remove selections using delete button.

Overview

Data

Map

Education Graphs

Scenario Definition

Glossary

FAQ

## Wittgenstein Centre Data Explorer

Tweet 17

The [Wittgenstein Centre](#) Data Explorer allows users to browse, select, visualize, and download the assumption and result data produced by the global population projection exercise to be released in Summer 2014 by [Lutz, Butz, and K.C. \(Eds\)](#). It also includes population projections developed for the 5th assessment report of the Intergovernmental Panel on Climate Change (IPCC) according to a set of Shared Socioeconomic Pathways (SSP) scenarios.

The new set of projections by levels of educational attainment was produced by a large team of researchers at the Wittgenstein Centre for Demography and Global Human Capital and at other institutions. There are two main areas where the new projections advance the state of the art beyond other existing global population projections (those that cover most world countries):

- They explicitly and systematically incorporate population heterogeneity by level of education, thereby illustrating how educational attainment can and should be routinely added to age and sex as a third demographic dimension.
- The assumptions about future trends in fertility, mortality, and migration include the scientific input of more than 500 population experts around the world who responded to an online questionnaire and assessed the validity of alternative arguments as well as the conclusions of intensive discussions at five meta-expert meetings.

### Short Tutorial

When entering the database, the tabs at the top indicate different outputs:

1. **Data:** The menu on the left is used for choosing the indicators (N=31), time or period (2010 to 2100), scenarios (N=7), age groups (5-year and broad age groups), area/region/countries, sex, and education categories for the data that will be displayed on the right.
2. **Map:** Shows the selected data on a map. Only one indicator can be shown at a time.
3. **Profile:** Shows two graphs and a detailed profile (PDF):
  - A population pyramid for the selected area/region/country including education categories (the user can choose between 4 or 6 categories). The play button under the year fader allows for the presentation of changing population pyramids over time.
  - A stack graph of population size by levels of education for the period 2010-2100 for the selected area/region/country. The period can be selected by scrolling the year fader.A detailed profile of each country (with main projection results and assumptions) is available for download (in PDF format).
4. **Assumptions:** Shows the detailed assumptions related to fertility, mortality, migration, and education for the different scenarios after selecting the country or group of countries.
5. **Glossary:** Shows the definition of the indicator selected in the left menu.
6. **FAQ:** Answers the frequently asked questions.

The data, maps, pyramids, and charts displayed can be downloaded by clicking the appropriate button at the bottom of the left menu.

### Citation

The suggested citation for data from this website is:

Wittgenstein Centre for Demography and Global Human Capital, (2014). *Wittgenstein Centre Data Explorer Version 1.1*. Available at: [www.wittgensteincentre.org/dataexplorer](http://www.wittgensteincentre.org/dataexplorer)

# How do we improve understanding and effective use?

- Communicate better ourselves
- Basic graphics for users with explanations
- Allow users to see and visualize all assumptions for every country

Click on the image below to launch the interactive infographic:

