

Unique study looks at global population projections up to 2100

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Scientific research into climate change tends to look at the impact it will have in the future, and how it will affect the Earth's physical system. Very few studies have focused on how climate change will affect future societies. This gap is being addressed with a study aiming to produce the first comprehensive science-based projections of population by age, sex and level of education worldwide, up to 2100. This will form the basis for the study of climate change impacts on human well-being.

This ambitious research project, FUTURESOC ('Forecasting Societies Adaptive Capacities to Climate Change'), is supported by the EU. The coordinator of the project, Professor Wolfgang Lutz from the Wittgenstein Centre for Demography and Global Human Capital

(IIASA, VID/ÖAW, WU) in Austria, has devised various analytical scenarios to match future climate conditions. He will also assess the future societal capabilities in different countries at comparable points in time.

Historical events studied have included the Sahelian drought in North Africa, Hurricane Mitch in Central America, and the Asian tsunami. Forward looking case studies have also assessed the future adaptive capacity of the PhangNga/Phuket region of Thailand and the island of Mauritius in the southwest Indian Ocean.

Professor Lutz believes that forecasting future human capital trends for all countries with a multidimensional demographic projection can provide a powerful analytical tool for forecasting societies adaptive capacities. By analysing the populations by age and level of education today, projections can be made over decades. The uneducated 15 year olds of today will be the uneducated 65 year olds 2060. Assumptions on future fertility, mortality and migration have been defined using a global expert inquiry with over 500 participants.

Lutz says: 'When trying to understand how dangerous [climate change](#) will be to human well-being in the future, frequently the mistake is to relate the forecasted [climate conditions](#) (for example 2060) to the societal conditions and adaptive capabilities of today. This makes little sense since we know that societies will be different in the future.'

He adds: 'When looking back in most societies such capabilities were very different in the 1960s compared to today and we have reason to assume that they will also be very different in 2060. The challenge thus is to find a meaningful scientific model that can help build scenarios of long-term changes in societal capabilities to deal with changing climatic conditions.'

However, the biggest problem has been in finding data based on the different levels of education from people who were affected by natural disasters. 'In post-disaster surveys people measured and asked all kinds of things but not the level of education,' notes Professor Lutz. The hypothesis that education could matter was not on the table, he suggests, and therefore people did not think of asking the question. 'This way, sometimes the most important aspects get no attention, and if no data is collected, this factor does not appear in the analysis.'

FUTURESOC's new population scenarios by age, sex and level of education have recently been chosen as the 'human core' of the new set of SSPs (Shared Socioeconomic Pathways), which will be a common point of reference for modeling groups in the field of Integrated Assessment (IA) as well as Vulnerability, Risk and Adaptation (VRA) around the world.

Forecasting market potentials is the theme of another ERC-funded project (with EUR 150,000) called FUTURE MARKETS ('Demography-Based Market Forecasting Tools'). Also led by Prof Lutz, the FUTURE MARKETS Proof of Concept project aims to test commercial potential with a new quantitative science-based tool for forecasting future consumer preferences and demands, which was conceived through methodological advancements in the FUTURESOC project.

The FUTURE MARKETS project combines in a novel fashion empirically estimated age and cohort effects with expert-assessed future period trends. It has the potential to provide a powerful tool for social and economic forecasting in general and forecasting the market potential on certain goods and services in particular. Detecting [future](#) shifts in customer preferences, being 'ahead of the trend', is key in marketing and could make the success of this market forecasting tool.

The results from both projects will be published in 2014.

More information: cordis.europa.eu/projects/rcn/90065_en.html

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