# Sustainable Development Goals lead to lower population growth

November 29 2016



SDG scenarios (in blue) lead to lower population growth than other population projection scenarios. Credit: Abel et al. 2016

Achieving the Sustainable Development Goals (SDGs) set by the UN in 2015 for the period up to 2030 would lead to a global population of between 8.2 to 8.7 billion by 2100, according to a new study from the International Institute for Applied Systems Analysis (IIASA) and the Asian Demographic Research Institute (ADRI) at Shanghai University. According to the study published in the journal *PNAS*, achieving the SDGs would lead to population growth below even the lower bound of recent UN probabilistic population projections.

The SDGs include 17 goals with 169 different targets, aimed at fighting poverty, reducing inequality, and addressing climate change, while leaving nobody behind. They include goals such as quality primary and secondary education for all children, gender equality, and reduced child mortality, which all have direct and indirect impacts on population growth.

"In the context of the SDGs population is sometimes called the elephant in the room. It is not mentioned in any of the 169 targets, yet many people think it is a decisive factor for global environmental change and future human wellbeing," says IIASA World Population Program Director Wolfgang Lutz, a study coauthor.

The study is the first to assess how successful implementation of the SDGs would affect population growth. Assuming that for the period 2015-2030 the goals will serve as a turbo boost for development, it finds that achieving the SDGs would lead to global population peaking by 2060, and declining to between 8.2 and 8.7 billion by 2100.

"The key factors are the effects of increasing female education on lowering birth rates in developing countries, and the health target that includes universal access to reproductive health services," says IIASA population researcher Samir KC, who also worked on the study. Achieving these two goals, the study showed, would lead to reduced

fertility rates in much of the developing world. The researchers note that achieving the SDGs would also lead to reduced mortality, which would tend to increase population, but that in the longer term, decreased mortality rates also contributes to lower birth rates.

Even if the goals were only partly achieved, the study finds potentially significant decrease in population growth. KC says, "We also calculated some variants that made more cautious assumptions with respect to the achievements of universal secondary education and the expansion of reproductive health services. In general we find that if the international community fails to reach the SDGs then world population growth will be higher, people will be poorer and in worse health, and this larger world population will be more vulnerable to environmental change."

The new projections fall outside of the 95% confidence range of 2015 UN probabilistic projections, which range from 9.5 to 13 billion in 2100. The study provides sensitivity analyses of key model assumptions and starting data uncertainty, indicating that the UN projections may have too small a range of uncertainty.

Lutz says: "The future of world population growth matters for our efforts to improve the human lot and our impacts on the natural environment. The sizable effect on global population growth provides an additional rationale for vigorously pursuing the implementation of the SDGs."

**More information:** Abel G, Barakat B, KC S, Lutz W (2016). Meeting the Sustainable Development Goals leads to Lower World Population Growth. *PNAS*. 29 November 2016. DOI: 10.1073/pnas.1611386113 , www.pnas.org/content/early/2016/11/28/1611386113