When will the 7 billionth human be born?

ON 31 October, a newborn baby somewhere in the world will become the 7 billionth member of the human race. Or so says the UN - alternatively, this date could be at least a year too early.

Behind the UN's patina of certainty may lie outdated and unreliable census data. The suspicion is that millions of births and deaths have not been counted and there is huge uncertainty about the rate at which women are giving birth.

The precise "day of 7 billion" may not matter much. But the inaccuracies make it harder to answer a more important question: is human population set to peak within the next few decades or will it carry on growing beyond that?

Wolfgang Lutz of the Vienna Institute of Demography says the UN is "under political pressure to disregard uncertainty and name a date" for 7 billion. But he and colleague Sergei Scherbov estimate that the world probably won't reach 7 billion until early in 2013, though it could be as late as 2020.

The director of the UN population division Hania Zlotnik defends her data but agrees that "an interval of a few months or even a year would be a reasonable range of uncertainty".

One problem for demographers is undercounting. Even developed countries reckon their censuses miss up to 3 per cent of people. Up-to-date figures have to adjust for both this and the changes since the last census, which could be decades in the case of some African countries. So adjusting for extra people is routine.

The big danger, Scherbov says, may be overadjusting. The world has seen a dramatic decline in fertility in recent years, with the average woman now having only 2.5 children, half as many as
her grandmother 50 years ago. So there may be far fewer new arrivals than demographers assume.

Take China, the world's largest country. Raw census data suggest that the average woman has 1.2 children, but this hides a multitude of problems. State demographers believe people are hiding tens of millions of babies to evade the one-child policy, and so estimate that the rate is 1.8. But Zhongwei Zhao of the Australian National University in Canberra says other figures in the 2010 census suggest the raw data may be nearer the truth. The UN currently plumps for 1.5 children per woman.

Discrepancies in estimating populations are amplified in long-term projections. Zhao says China's recent overadjusting of its fertility rate will turn into an overestimation of as much as 100 million by 2030.

India's demographic future is even more uncertain. The UN estimates that the country's population will grow from 1.2 billion to 1.7 billion by 2050, making it substantially bigger than China. But Scherbov and Lutz predict 1.4 billion, with a possible range from 1.1 to 1.7 billion.

All this is of huge importance for the planet. Earlier this year, the UN unexpectedly raised its estimates of future population, suggesting that the world would have more than 10 billion people by 2100. But Scherbov says there is no demographic evidence to justify this gloomier prediction. It arose from "a new set of assumptions about future fertility". For instance, following what Zlotnik calls "a major change in methodology", the UN upped its estimate of the number of children Nigerian women will be having in 2050 from 2.41 to 3.41.

The UN says world population will still be rising in 2100. Scherbov says there is an 85-percent chance it will have peaked by then. But nobody knows for sure.