Global Food Security and Nutrition Status: Trends and Prospects

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The race is on, but Africa & S. Asia still have far to go

Rural population growth has started to slow
(but 20 years later in Africa than it did in South Asia)

For the world as a whole, rural population growth will soon become negative, allowing more land per farm.

Annual change in rural population (% growth)


Child dependency is also falling fast
(but 20 years later in Africa than it did in South Asia)

Africa’s dependency rate is still high but now falling, reversing the earlier “demographic drag”
Development brings many simultaneous changes

- Positive trends accumulate and spread
  ...and can facilitate resilience against negative shocks
- But negative trends also arise and can spread

Amai Nickson and family at Chakuma Village, Zimbabwe (Sept. 2010)
25 years after I taught in the classroom at right (with Tadius Shumba)

Globally, are we winning?
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Demographic change | Children | Mothers

The child height - income relationship is now less steep

Mean height-for-age z score by national income level, 1991-2002 and 2003-2011
(All DHS observations, N=802,841 from 153 surveys in 70 countries)

![Graph showing mean height-for-age z score by income level from 1991-2002 and 2003-2011. The average child in very low-income countries is now taller than in the 1990s, while in middle-income countries, it's reversed, as income has grown faster than child height.]

Note: Data shown are means over all children measured in 1991-2002 (dashed line) and 2003-2011 (solid line), with 95% confidence intervals, estimated using lpolyci (bandwidth=0.75). Sample sizes are N=429,865 for 1991-2002 and N=372,976 for 2003-2011, and exclude self-reports as well as 19,038 outlier observations with z scores less than -6 or greater than +4. Source: Author's calculation, from DHS data.

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Demographic change | Children | Mothers

The child weight - income relationship is no longer clear

Mean weight-for-height z score by national income level, 1991-2002 and 2003-2011
(All DHS observations, N=802,841 from 153 surveys in 70 countries)

![Graph showing mean weight-for-height z score by income level from 1991-2002 and 2003-2011. In the poorest countries, the average child now has much less wasting than in the 1990s, while in middle-income countries, it's reversed, as income has grown faster than child weight.]

Note: Data shown are means over all children measured in 1991-2002 (dashed line) and 2003-2011 (solid line), with 95% confidence intervals, estimated using lpolyci (bandwidth=0.75). Sample sizes are N=429,865 for 1991-2002 and N=372,976 for 2003-2011, and exclude self-reports as well as 19,038 outlier observations with z scores less than -6 or greater than +4. Source: Author's calculation, from DHS data.
At each age, the average child is now (slightly) taller

Mean height-for-age z score at each age, 1991-2002 and 2003-2011

(All DHS observations, N=802,841 from 153 surveys in 70 countries)

Note: Data shown are means over all children measured in 1991-2002 (dashed line) and 2003-2011 (solid line), with 95% confidence intervals, estimated using lpolyci (bandwidth=1). Sample sizes are N=426,865 for 1991-2002 and N=372,976 for 2003-2011, and exclude self-reports as well as 19,038 outlier observations with z scores less than -6 or greater than +4.

Source: Author’s calculation, from DHS data.

The onset of stunting still occurs in the first thousand days

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Demographic change | Children | Mothers

Only the tallest children are now very thin

Mean weight-for-height at each level of height-for-age, 1991-2002 and 2003-2011

(All DHS observations, N=802,841 from 153 surveys in 70 countries)

Note: Data shown are means over all children measured in 1991-2002 (dashed line) and 2003-2011 (solid line), with 95% confidence intervals, estimated using lpolyci (bandwidth=1). Sample sizes are N=426,865 for 1991-2002 and N=372,976 for 2003-2011, and exclude self-reports as well as 19,038 outlier observations with z scores less than -6 or greater than +4.

Source: Author’s calculation, from DHS data.

There is no longer the 1990s pattern by which shorter children were also thinner (on average)

…now it’s the tallest children who are now thinner (on average)
Mothers’ weight - income relationship is also less steep

In the very poorest countries, the average mother now has a healthier BMI… ...and also in middle-income countries, as income has grown faster than mothers’ average BMI.

In poor countries, mothers’ weight distribution has widened

Increases in average BMI have been concentrated at the top of the distribution here.

Each centile line is now less steep.
In conclusion...

• The global distribution of heights and weights has improved
  • The poorest countries have taller, bigger children
  • ...and also bigger mothers

• Time lags and compositional changes make changes hard to see
  • We need careful disaggregation
  • ...without losing sight of the aggregate shift

• A large and growing literature uses the DHS treasure-trove
  • Often combining countries to expand variance
  • Often merging with other kinds of data to explain trends