Demographic transition

What demographics change as economies develop? How does demographic transition affect the kinds of foods and resources demanded?

Background

By 2050 the world's population will reach 9.1 billion, 34 percent higher than today. Nearly all of this population increase will occur in developing countries. Urbanization will continue at an accelerated pace, and about 70 percent of the world's population will be urban (compared to 49 percent today). In order to feed this larger, more urban population, food production must increase by 60-70 percent.

Urbanization brings with it changes in lifestyles and consumption patterns. In combination with income growth it may accelerate changes in the diets of people in developing countries. Currently, these populations depend heavily on grains: maize, wheat and rice. While the shares of grains and other staple crops will be declining, those of vegetables, fruits, meat, dairy, and fish will increase. In response to this change, these groups will be increasingly buying food from markets where there is more of a concentration on secondary consumers (animals that eat the grains). However, rural areas will still be home to the majority of the poor and hungry for quite some time. Currently, one billion people cannot even satisfy their basic needs in terms of food energy.

http://www.fao.org/fileadmin/templates/wsfs/docs/expert_paper/How_to_Feed_the_World_in_2050.pdf

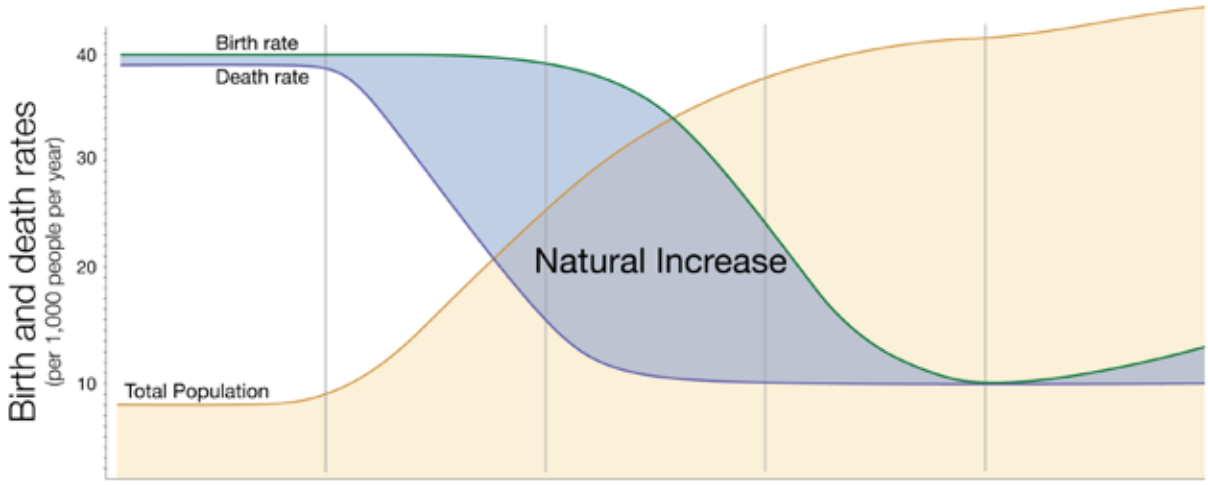
Feeding these additional billions by 2050 is a formidable challenge, with tighter resource constraints (land, water, soil), the demand to limit agriculture's ecological footprint and the impact of climate change. Many have argued that distribution is the problem and if we could solve that, there is enough production to feed the world population now (http://pdf.wri.org/great_balancing_act.pdf). Current global food availability is not sufficient to feed the world in 2050, even if all the food calories available in the world today were equally distributed across the projected population in 2050. With the changes that will be demanded by a growing urban population (as described above), this idea is not feasible. Boosting farm productivity is an essential instrument to alleviating poverty and reducing hunger.

Reducing food waste and encouraging less resource-intensive diets in developed countries (particularly lower meat consumption) are desirable goals. But they do not reduce the need to invest in increasing agricultural production and improving agricultural productivity in both developed and developing countries.

http://www.iiea.com/blogosphere/global-population-projections-and-food-demand

Once a country begins to industrialize or as its economy develops, there are changes that occur in the demographics or statistics of the country. These statistics include birth rate, death rate, infant mortality and average income.

The Demographic Transition (DT) model is pictured below. Take a few moments to make observations about what is happening during each phase of the model.



	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Birth rate	High	High	Falling	Low	Rising again
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Very rapid increase	Increase slows down	Falling and then stable	Stable or slow increase

Choose one of the countries below to graph. Estimate what stage of transition the country is in on the DT model. Use evidence when explaining the position on the model.

		Bangladesh	UK	Germany	Somalia	Columbia	Bolivia
Birth rate	1990	35/1000	14/1000	11/1000	48/1000	26/1000	35/1000
	2010	21/1000	12/1000	8/1000	45/1000	17/1000	25/1000
Death rate	1990	10/1000	11/1000	12/1000	20/1000	6/1000	13/1000
	2010	6/1000	9/1000	10/1000	13/1000	6/1000	8/1000
Natural increase*	1990	2.5%	0.3%	negative rate of growth	2.8%	2%	1.2%
	2010	1.5%	0.3%	negative rate of growth	3.2%	1.1%	1.7%

* Natural increase = $\frac{BR - DR}{10}$ (expressed as a percent)

Reflection

1. As a country develops, according to this model, what trends do you see in population statistics?

2. As a country develops, what happens to the kinds of foods people eat?

3. What effects might those eating habits have on the environment, the economy, food production?