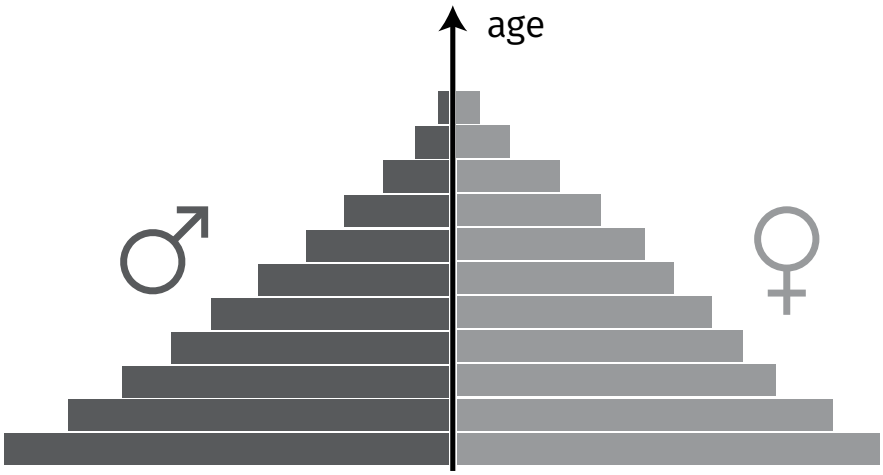
Population age structures

What is an age structure diagram? How does age structure affect population growth? Why is this important in food production?

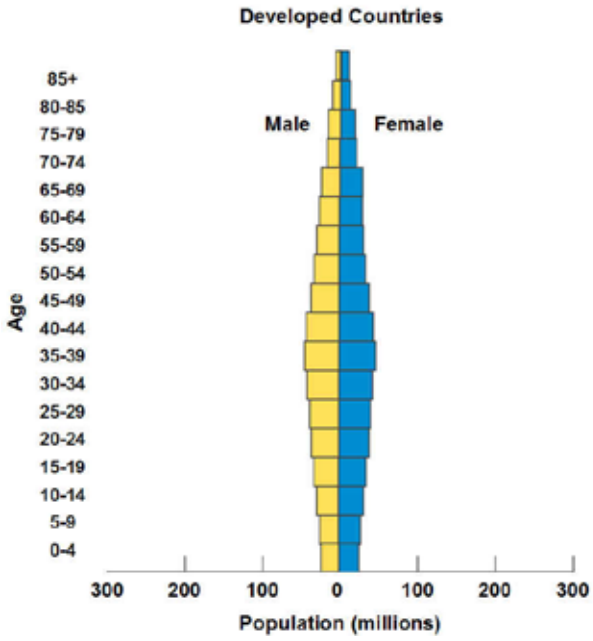
A population age structure diagram is the proportion of the population (or of each sex) at each age level.

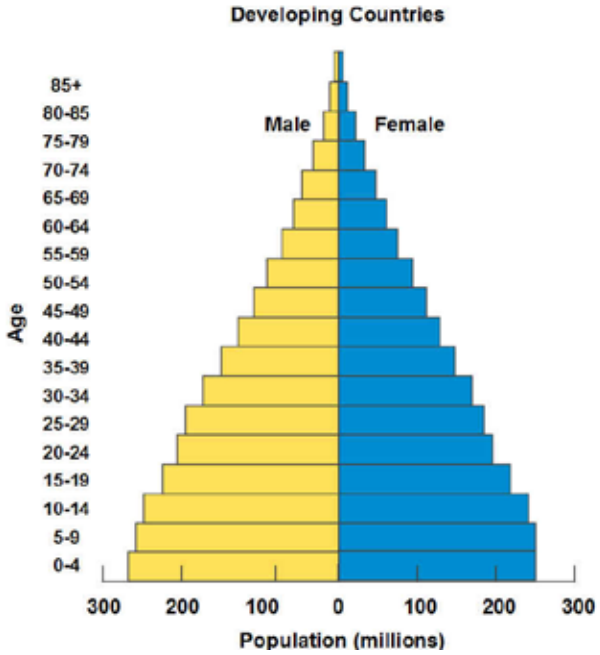
(Each level in the above graphic represents an age group in increasing order, youngest at the bottom and oldest at the top.)



1. Draw two lines on the pyramid above.
   a. The first line should be drawn above the third level of the pyramid which encompasses the pre-reproductive age group, 0–14.
   b. The second line includes the next six levels, so draw above the ninth level of the pyramid and is the reproductive age group (15–44).
   c. Above the line drawn in b is the post-reproductive age group (44–85+).

   These diagrams help to determine how a country's population will grow.
   Take a look at the two structures below:





2. Which of the structures above show imminent population growth?

   The percentage of the population that is of reproductive age is the percentage that will be responsible for increasing population, in addition to the percentage that will be reaching reproductive age in the following years. In the diagram to the right, the reproductive population is much smaller and there are fewer children in the age categories below the reproductive age groups.

   As you might think, the populations of less developed countries are increasing at a greater rate than those of developed countries. In addition, the larger number of malnourished people also live in those developing countries.

   > Almost all the hungry people, 780 million, live in developing countries, representing 12.9 percent, or one in eight, of the population of developing countries. There are 11 million people undernourished in developed countries *(FAO 2015; for individual country estimates, see Annex 1)*.

3. What are the implications of rapidly growing populations and more malnourished people in developing countries? What might a country do to decrease population growth? What has been done (i.e. China, Thailand, United States policies)?

   In 1798, Thomas Robert Malthus predicted that short-term gains in living standards would be undermined as human population growth outstripped food production, and create a population crash. However, we have not seen this to be the case.

   > Over the last half-century, world population doubled while food supply tripled, even as land under cultivation grew by only 12% (FAO, 2012). It is by raising productivity, or getting more output from existing resources, that has been driving growth in global agriculture, and what has proven Malthus wrong. In fact, at the global level, the long-run trend since at least 1900 has been one of increasing food abundance—in inflation-adjusted dollars, food prices fell by an average of 1% per year over the course of the 20th Century - See more at: http://www.choicesmagazine.org/choices-magazine/submitted-articles/productivity-growth-in-global-agriculture-shifting-to-developing-countries#sthash.G3Uw6q0Z.dpuf

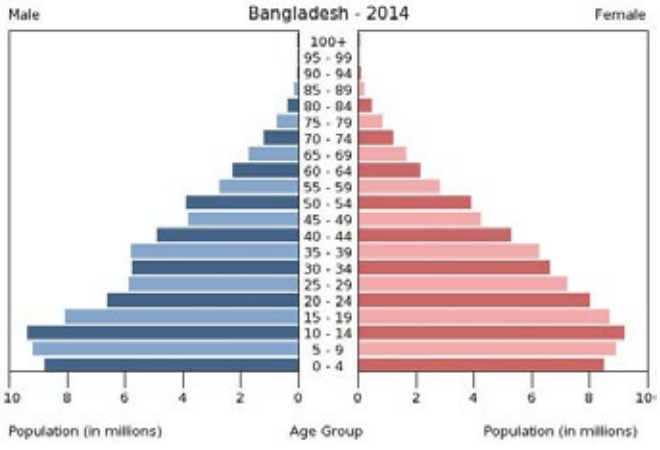
   Read the three statements below:

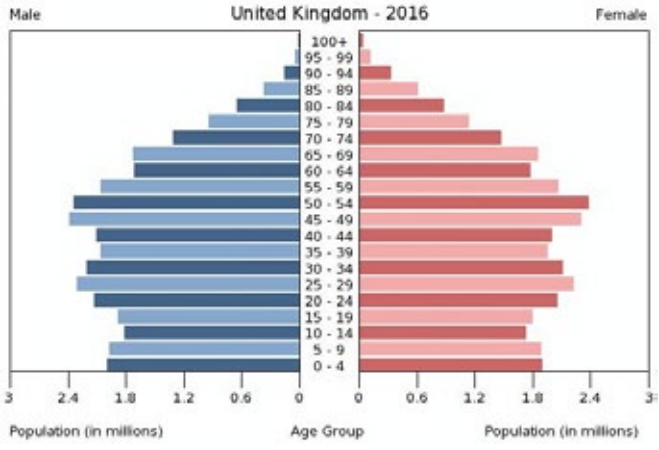
   a. Agriculture employs over 1.3 billion people throughout the world, or close to 40 percent of the global workforce.
   b. In about 50 countries, agriculture employs half of the population, and even 75 percent in the poorer nations.
   c. Agriculture is the world's largest provider of jobs.

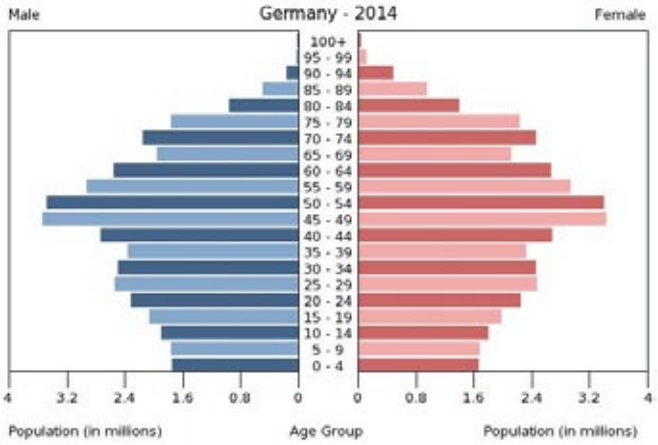
   http://www.momagri.org/UK/agriculture-s-key-figures/With-close-to-40-%25-of-the-global-workforce-agriculture-is-the-world-s-largest-provider-of-jobs-_1066.html

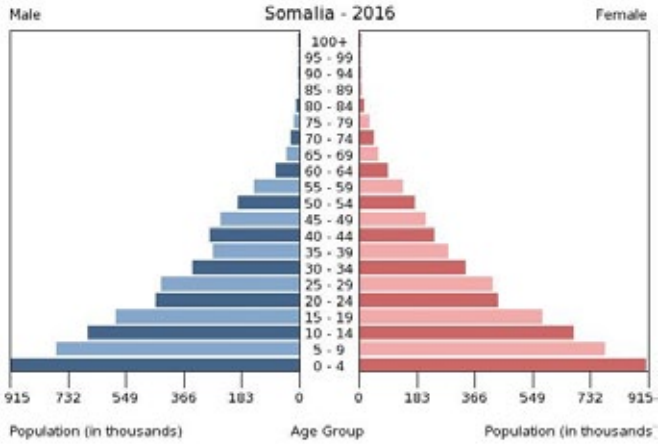
4. In light of the predictions of Malthus, the realities of food production since 1900, including the Green Revolution and new technologies which include genetic modification of various types, and precision agriculture techniques, what is your prediction about food production in the next 30 years? What strategies can we continue to use, or develop, to meet the needs of growing populations and changing demographics?

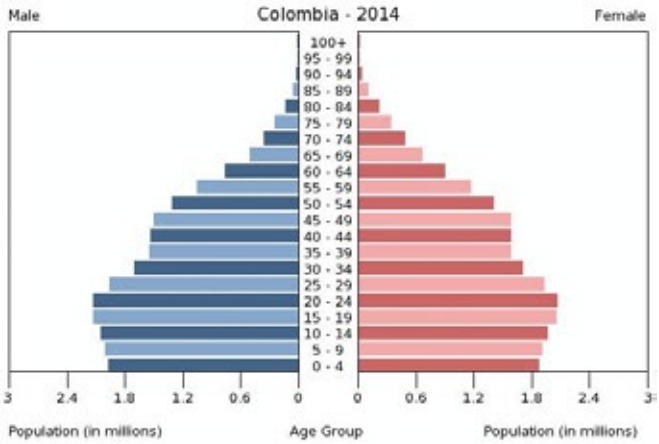
Looking at the age structure diagrams of the countries from the Demographic Transition activity that appear below, try to match the structure to the stage of transition.

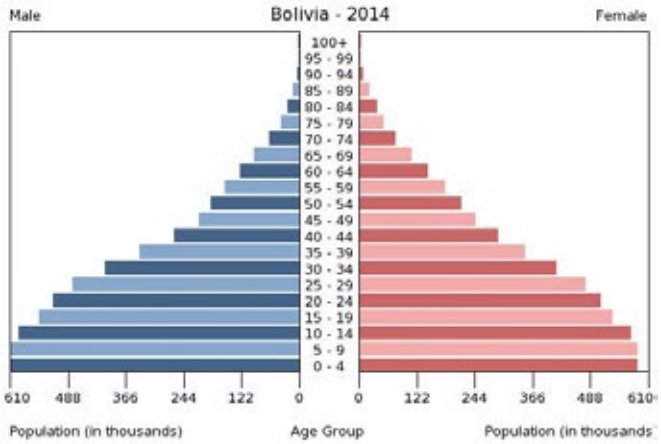












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