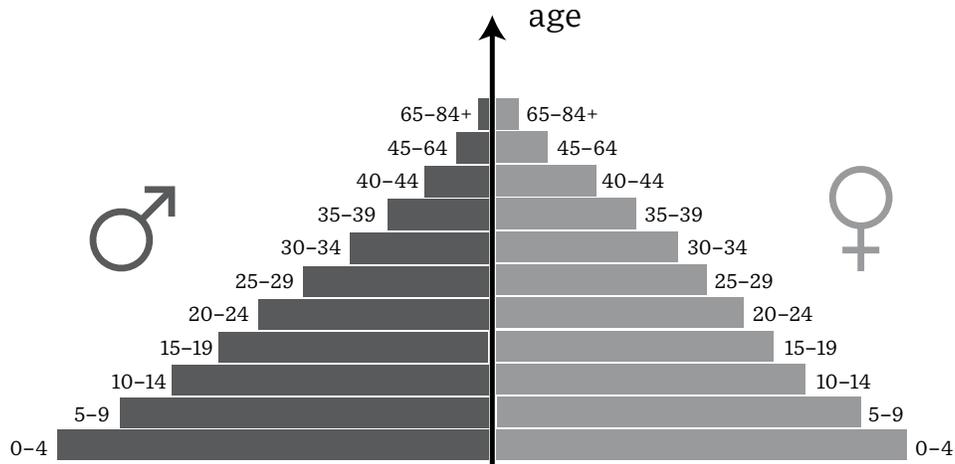


Population age structures

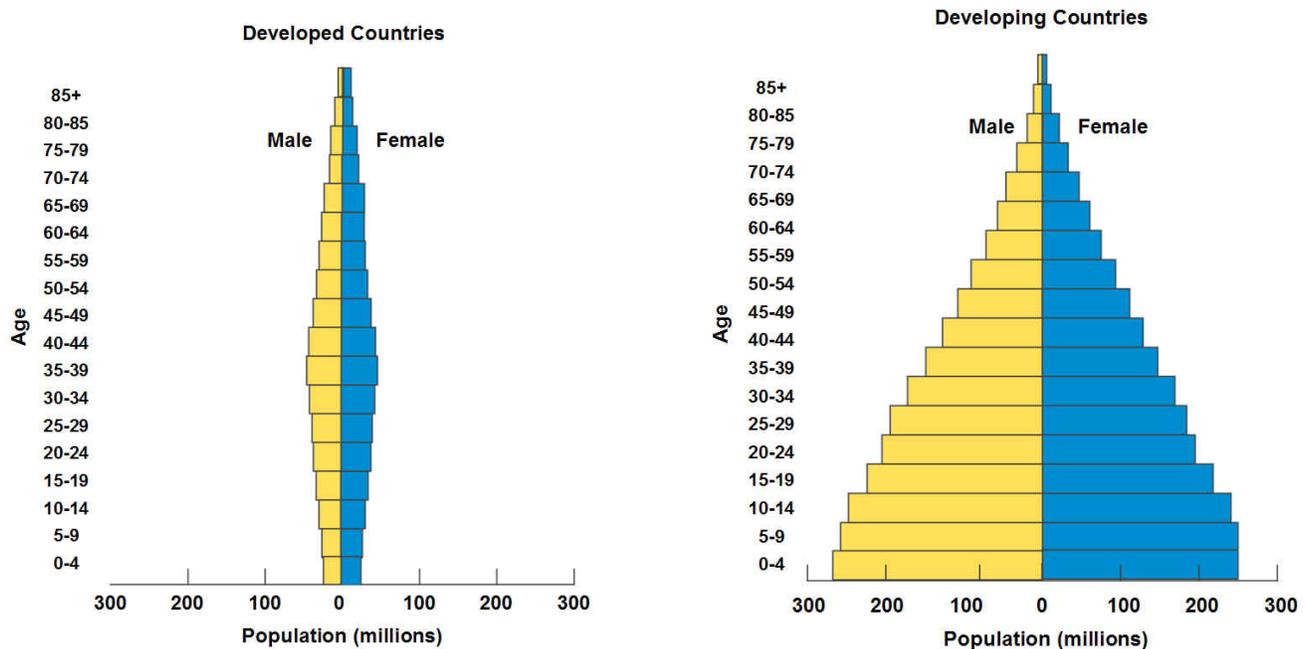
What is an age structure diagram? How does age structure affect population growth? Why is this important in food production?

A population age structure diagram is the proportion of the population (or of each sex) at each age level. (Each level in the graphic below 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. These diagrams help to determine how a country's population will grow. Take a look at the two structures above. Label the 3 categories in these diagrams as you did above.

a. Calculate approximately how much the population could increase if each female of reproductive age from a developed country has only 1 child in her lifetime.

Answer: There are approximately 230 million women of reproductive age in the diagram. If each has one child, the population would increase 230 million.

b. Calculate approximately how much the population could increase if each female of reproductive age from a developing country has 2 or more children in her lifetime.

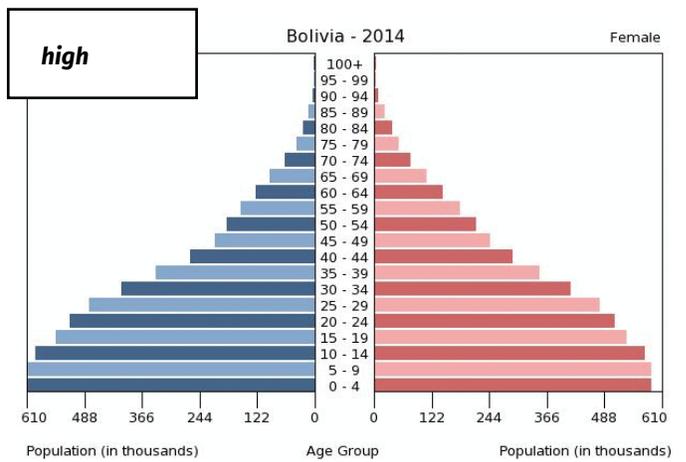
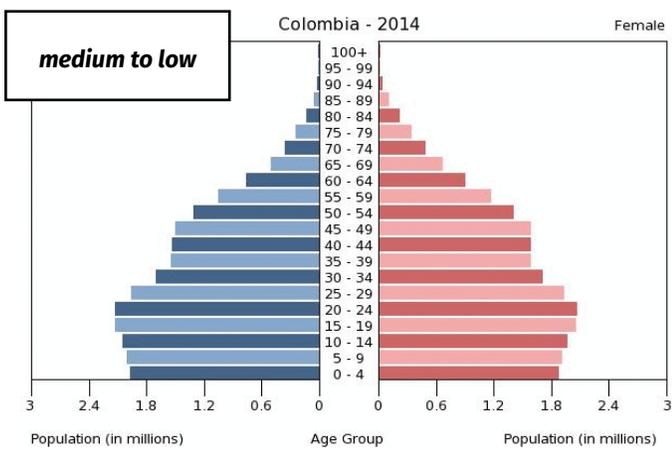
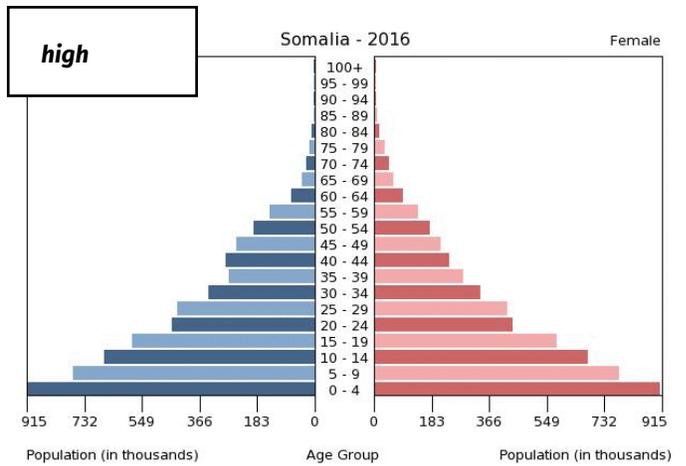
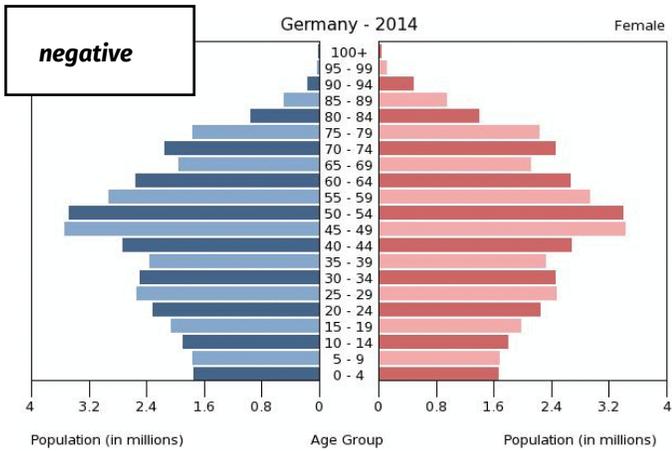
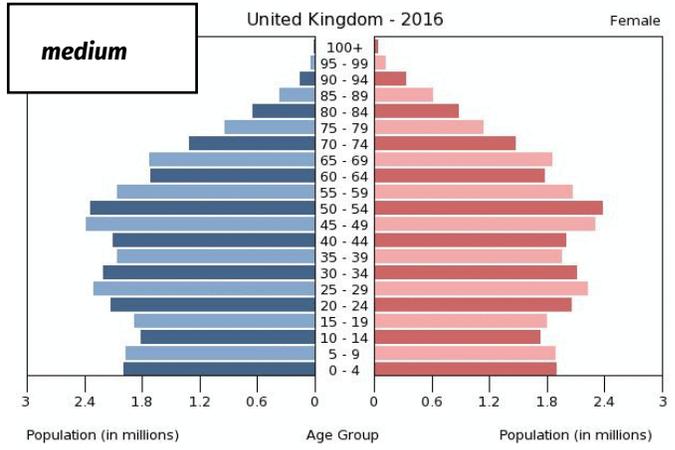
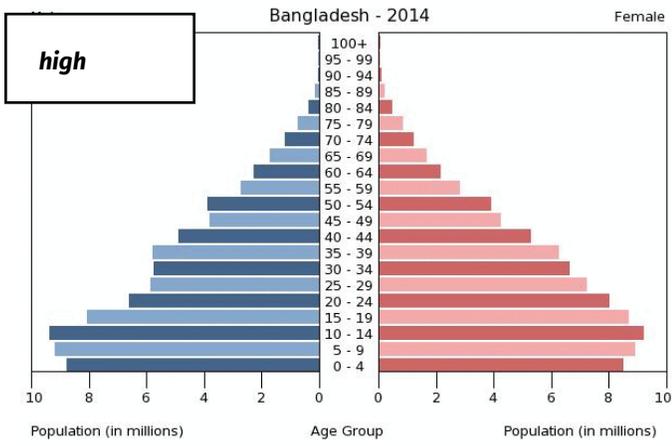
Answer: There are approximately 1,205 million (or 1.2 billion) women in the diagram. If each has 2 children, the population would increase by 2.4 billion.

c. Which of the structures above shows imminent population growth?

Answer: The one labeled Developing countries

3. Look at the age structures below. Predict the growth of the populations in each country as high, medium, low, or negative. Write your answers next to each country. (Visit indexmundi.com to compare the actual numbers of individuals in each age group.)

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.



All population age structures on this page from indexmundi.com/factbook/

Reflection

1. Looking at the countries that have the largest potential for population growth, what are the causes of their large population growth?

Possible answers: more people in the reproductive age groups, lack of education of women, infant and child mortality, lack of access to contraception

2. Are these causes related to resource availability? Why do you think this?

Possible answers: Yes, not just natural resources but economic resources including health care, education, technology

3. What might a country do to decrease population growth? What has been done (i.e. policies in China, Thailand, India)?

Possible answers: China had a one-child policy; Thailand offered incentives to people who used birth control (but government workers also received incentives and it led to coercion); India instituted forced sterilizations.

4. What is meant by ecosystem limits?

Possible answers: We may not know until it is too late (Collapse by Jared Diamond: “Twilight at Easter”); it is difficult to predict because we have not exceeded the limits but we can see the signs of overgrazing, soil salinization, desertification.

5. What innovations have humans introduced to alter ecosystem boundaries and limits?

Possible answers: student responses will vary; may include: agriculture innovations that allow for higher yields with less land and water use.

6. What additional actions might humans take to address those limitations?