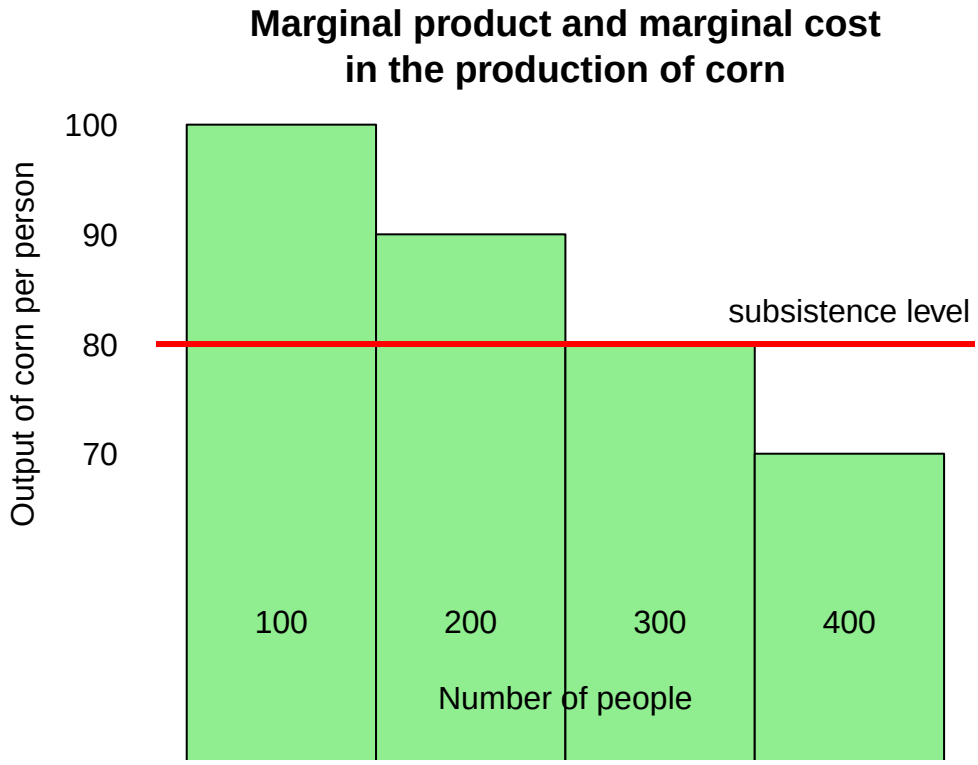
Malthus, Ricardo, and Economic Growth

Economics for Everyone, The Graduate Center, CUNY

Consider the picture below entitled "Marginal product and marginal cost in the production of corn", which depicts two relationships.

First, there are a series of green vertical bars that step to lower levels, starting at a height of 100 and gradually falling to a height of 70 units of corn per person, as the number of people increases in successive blocks of 100 from a total of 100 to a total of 400. The width of each bar represents 100 people, and the numbers in the horizontal direction on the graph give the total number of people.

Second there is a horizontal red line labelled "subsistence level."



1. Explain what each of the relationships is meant to represent, and explain why they display the patterns they do. As a part of your discussion be certain to explain which variables are endogenous and which are considered to be exogenous.

2. Use economic reasoning to explain how the model reaches an equilibrium. What is the total production of corn in equilibrium? How is that output distributed between the two groups in this society?

3. Complete the following table and use marginal reasoning to explain at what point the total surplus is maximized and why. Use the information in the table to draw the "production function" that is associated with Figure 1.

Number of Workers	Marginal Benefit	Marginal Cost	Total Production	Total Cost	Surplus
100					
200					
300					
400					

4. Examine the implications (predictions) of the model in response to each of the following policies. In all cases be certain to show how you would change the diagram, and to fully discuss the intuition of how the new equilibrium is reached.
   - a change in technology that increases the productivity of the land
   - a program of aid to the poor in which some of the surplus is transferred from landlords to workers
   - a government imposed and fully enforced regulation that permits families to have only one child