

Week 1 Homework: Production Possibilities Frontiers

ECO 120: Global Macroeconomics

Homework 1: Farmland

1. Draw the production possibilities for corn (food) and ethanol. Label the parts of the graph that are attainable but not efficient, most efficient, and not attainable.
2. Compute the opportunity cost of ethanol for each level of production in the table. What happens to the opportunity cost of ethanol as the production of ethanol increases?

	Corn (food)	Ethanol
A	30	0
B	27	3
C	21	6
D	12	9
E	0	12

3. Describe and illustrate the impact on the production possibilities curve if there was a drought.
4. Describe and illustrate the impact on the production possibilities curve if governments stop encouraging the use of bio-fuels such as ethanol.

Homework 1: Mali

5. Graph a production possibilities frontier with two categories of goods. Let one good be peanut butter and all other products that are made by grinding nuts, beans, seeds, etc. Let the other category be "All other goods," which would include absolutely anything else, including other crops, clothing, electricity, education, automobiles, etc. Graph the PPF so that it follows the law of increasing opportunity costs.
6. The graph shows numerous possibilities for what Mali villages can produce. Keep in mind that Mali is an impoverished country (so people have very little "all other goods") and nearly half of the population is involved in the production of peanut butter (and similar blended products). Choose and label a *point* on the PPF above where you think they are likely producing before the invention is introduced.
7. Redraw the PPF from Question 5 and on this same graph, show how the PPF may change immediately following the introduction of the invention that allows women to grind peanuts.

Homework 1: Mali (continued)

8. After the introduction of the invention, villages in Mali were able to enjoy more goods than just more peanut butter. Name at least 3 of these goods.
9. As a result of the peanut grinding invention, do you think there was a greater increase in production of peanut butter or production of all other goods? Think about the focus of the article. Redraw your PPF graph in Question 7, by suggesting and labeling a point on the old PPF where the villages were producing before the invention, and suggest and label a point on the new PPF where you believe the villages were producing after the invention.
10. As time progressed after the introduction of the invention, many villages decided to reallocate scarce resources towards technology, capital (electricity, lights in hospitals, etc), and literacy. What distinguishes these scarce resources compared to other goods? Redraw the production possibilities frontier from Question 7 and show what happens to the PPF as a result of these additional investments.