III. How Can Developing Countries Increase Their Food Production?

1) In the mid-1960s, what problem did Asia face? What were 2 ways that the Green Revolution benefitted Asian farmers, consumers, and/or the economy? (2 pts.)

   Answers
   Problem Asia faced (Any of the following, 1 pt.)
   O Widespread hunger/malnutrition
   O Was dependent on food aid

   Ways the GR benefitted Asian farmers, consumers, and/or the economy (Any 2 of the following, ½ pt. each)
   O Increased farmers’ yields/production/profits
   O Crops took less time from planting to harvest/crops matured earlier
   O Enabled farmers to plant more crops/year
   O Enabled farmers to grow the rice/wheat anytime of the year
   O Crops were more disease-resistant,
   O Resulted in lower consumer prices (rice/wheat), which especially benefitted the non-urban poor
   O Increased the availability of calories
   O Increased farmers’ incomes, so farmers could buy more consumer goods/more inputs like fertilizer/diversify their diets
   O Improved nutrition (rice/wheat became less expensive, so people could afford to buy more)
   O With greater income, farmer could buy more inputs/consumer goods, which stimulated the rural economy/created more jobs

2) What are 2 areas that FAO’s Initiative on Soaring Food Prices identifies, where action must be taken to increase food supplies?

   Answers
   Actions (Any 2 of the following, 1 pt. each)
   O Provide seed, fertilizer, good advice
   O Work to improve infrastructure—irrigation systems, market infrastructure, roads
   O Add value to farmers’ products by raising crop varieties that are higher quality & higher yielding
   O Add value to farmers’ products by using processing techniques to diversify products/facilitate supply contracts with agricultural companies
   O Reduce losses through better handling, milling, storage
   O Defending/protecting crops/animals against pests, sickness, disease

3. What did scientists announce last week and what do researchers say breeders could do, armed with more precise genetic information?

   Answer
   Announced (Any of the following answers, 1 pt.):
   O Built the foundations for a complete catalogue for corn genes

   What breeders can do (Any of the following answers, 1 pt.):
   O Develop varieties that withstand drought/heat
   O Develop varieties that use nitrogen more efficiently
   O Develop varieties that pack more nutrition per kernel
   O Take less time to develop varieties than is currently required

4. What type of crops is Dr. Lynch and his colleagues trying to develop that will spark a second green Revolution?

   Answer (Any of the following answers, 2 pt.):
   O Crops whose root systems can resist drought
   O Crops that take up nutrients from the soil more efficiently
   O Plants that grow productively with less water/fertilizer
5. What methods have farmers in rural Africa used for generations and what has caused this system to breakdown? (2 pts.)

Answer

Method (Any of the following answers, 1 pt.):
- Slash and burn system
- Farmers clear land, burn it, plant their crop, and then move to a new area

Cause it to breakdown (Any of the following, 1 pt.):
- Population growth
- Not enough land for the growing number of small-scale farmers to constantly clear new land

6. What do GM crops mean for advocates? What do GM crops mean for skeptics? (2 pts)

Answers

Advocates (Any 1 of the following, 1 pt.):
- Fewer harmful pesticides sprayed
- Greater yield
- No ill health effects

Skeptics (Any of the following, 1 pt.):
- Mixing genes of unlike species is usurping nature/wrong
- Creating Frankenstein foods in the food chain
- A concession to agribusiness
- Will have unknown/untested effects on people/other living things
- Can harm the soil/friendly insects/other crops