III: How Can Developing Countries Increase Their Food Production?

Modernizing Agriculture
CGIAR, “Who We Are”
1. What are the 5 priorities of CGIAR research?

2. What are 5 examples, “among the outcomes of that (the CGIAR’s) research”?

Hazel, “Green Revolution: Blessing or Curse?”
1. In the mid-1960s, what problem did Asia face and how did the Rockefeller & Ford Foundations respond to this crisis?

2. To achieve higher yields for rice & wheat, what were 3 things that scientists needed to do (i.e., plant traits needed)?

3. What impact did the rice & wheat HYVs have on farmer adoption, yields, production, and caloric availability in Asia?

4. How did the Green Revolution stimulate the rural economy and improve nutrition (i.e., social impacts) in Asia?

5. According to critics, what were 3 shortcomings of the Green Revolution?

Clayton, “Earth’s Growing Nitrogen Threat”
1. What are 3 sources of the nitrogen pollution that is threatening the global environment?

2. Where can the most dramatic impacts of excessive nutrients (nitrogen) in water be seen and how does this affect the environment?
Emerging Technologies and Strategies
FAO, “FAO Initiatives Help Small Farmers Increase food Production”
1. According to FAO’s Assistant Director-General Jose Maria Sumpsi, why has agriculture fallen to the wayside in some countries and what illness is the sudden sharp jump (in prices) this year a symptom of?

2. What are the 4 areas that FAO’s Initiative on Soaring Food Prices identifies, where action must be taken to increase food supplies?

Montero, “Insecurity Drives Farm Purchases Abroad”
1. What does the race for farmland in Cambodia underscore?

2) What are 2 concerns that many in Cambodia—as elsewhere--have about poor countries selling their land to rich countries?

Elton, “Peru's Potatoes Saved by Science”
1. What is the new process developed by CIP and how is it helping potato farmers in Peru?

Spott, “Rice Genes Offer Grains of Hope for Hungry”
1. What have plant scientists in the US, China, Switzerland accomplished and what is this expected to enable scientist to do?

2. Why are Asian & African nations reluctant to embrace food crops modified through gene-spicing and what are the implications of this reluctance for plant breeding?

Spotts, “Plant Scientists Build a ‘Sear’s Catalogue’ for Corn Genome”
1. What did plant scientists announce last week and what do researchers say breeders could do (3 examples), armed with more precise genetic information?

Avery, “Hope for Sustainable Farming in Gene-altered Crops”
1. Why is the development of a gene-altered tomato that is salt-tolerant such an important breakthrough?

Avery, “Feed the World’s Hungry While Protecting Wildlife”
1. According to the World Conservation Union, what is the cause of current wildlife extinctions?
2. Why is Avery critical of some environmental groups?

Schwarz, “New Irrigation Project a Boon for Senegalese Farmers”
1. What has the Israeli Embassy, in partnership with local and international NGOs, developed to drastically increase food production in Senegal and what can Senegal’s farmers do with this new technology?

2. In the past, many NGO-funded irrigation projects have been abandoned. According to Mr. Toumieux, how is this project organized differently (e.g., which will make it succeed)?

Smith, “A Water Pump for the People”
1. What has Martin Fisher developed to help farmers in developing countries?

2. What appears to be gaining traction among development groups and hi-tech companies?

LaFranchi, “U.S.-Africa Alliance to Help Small Farmer”
1. According to Mr. Annan, what will addressing Africa’s “silent hunger” require?

2. What are 3 examples (i.e., US government, World Bank, EU) of a broader global recognition of a need for new ideas for addressing the food crisis?

3. According to some experts, what (2 examples) is likely to hamper to some degree the new international initiative?

Montlake, “Indonesia's Answer to Rising Food Prices”
1. What are 4 things (i.e., incentives, new policies) that the Indonesian government is doing to increase rice production?

2. Economists are asking Indonesia and other countries to put their trust in global markets to deliver rice at a reasonable price when their stocks run low. After the recent run up in (rice) prices, what lesson may governments draw?
Editorial, “Plant a Second Green Revolution”
1. What does the second green revolution need to go beyond? As a first step, what needs to be recognized (i.e., mistakes of the green revolution) and on what does a smarter green revolution need to focus?

2. Countries that need higher crop yields will need to adjust to new types of assistance. What’s different now (2 examples)?

Lamb, “How Science Could Spark a Second Green Revolution”
1. What type of crops are Prof. Lynch and his colleagues trying to develop that will spark a second Green Revolution?

2. According to Prof. Juma, in the medium to long run what type of crops will be an essential part of increasing yields in Africa and what concerns have led to a slow rate of adoption in Europe and parts of Africa?

Hanes, “Taking the Fire Out of Farming in Africa”
1. What methods have farmers in rural Africa used for generations and what has caused this system to break down?

2. What do some local governments and international donors say is the answer (to increasing good production in Africa)? What do other development groups and researchers say is the answer?

Llana, “Farming Superpower Brazil Spreads its Knowledge”
1. What is Embrapa and what did its scientists (“such as Lobato”) at the Embrapa Cerrado center learn/do that made it possible to grow soybeans on Brazil’s cerrado soils?

2. According to Elisio Contini (heads of Embrapa’s Office of International Affairs), during the 1970s, 1980s, and 1990s, what helped to turn Brazil into the agricultural powerhouse that it is today and what does he think it’s time to do now?

3. But research alone could not have transformed Brazil’s vast savanna. What else did the military government of the 1970s do (to develop/inhabit the region)?

Pflanz, “Principal Helps Village Feed Itself”
1. After taking over the school as principal in 2004, what was the scheme that Joseph Mbindyo introduce to harvest water and what crops did he grow/why didn't he grow maize and beans?

2. What new (farming) techniques (2 examples) did the schoolchildren learn that they could take home to their family's farms?
AGRA, “Fair Play or African Farmers”
1. What does the developed world—along with progressive countries in Latin America and Asia—continue to do to boost agricultural productivity and ensure cheap food; and why has this happened in every region of the world—except Africa?

2. Some say that higher prices for food means higher income for poor farmers. Why does Dr. Poulisse (FAO) say “unfortunately, it doesn’t work that way”?

3. AGRA argues that it’s time to offer African farmers a Comprehensive Farm Support Package. What is the “balanced mix” that this support package should include?

Hanes, “Urban Farmers Empower Africa”
1. How are urban gardening projects—started by UN agencies in collaboration with local organizations/NGOs—benefitting children in many cities in developing countries? How has urban gardening benefitted some people, such as Mulopo Wally?

Chauvin, “In Peru, a Project to Get Farmers to Trade in Fish Rather than Cocoa”
1. What is Mr. Honostroza's research center, in partnership with the Ucayali state government (Peru) and with funding from USAID, doing to save the paiche population—an endangered species—and create an alternative to growing cocoa?

2. What are 2 obstacles to the success of the piaches project?

Marquand, “Food Crisis Softens Resistance to Genetically Modified (GM) Food”
1. In what countries are GM foods commonplace and where is there strong opposition/concerns/ban against growing them?

2. What do GM crops mean for advocates? What do they mean for skeptics?

3. What is the difference between conventional plant breeding and genetic engineering?

Geithner & Gates, “A New Initiative to Feed the World”
1. What is being launched by the US, Canada, South Korea, Spain, and the Gates Foundation and in what will the funds’ public sector account be invested (3 examples)?

2. Why should we not be facing this challenge (i.e., an increase in the number of hungry people) today? What did the world understand in the 1960s & ’70s and what happened during the past three decades?