II: WHAT IS THE FOOD PROBLEM?
F-2010

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I. The Crops that Feed the World

A. Major World Food Crops (FAO data)
   - Grains: corn/maize, rice, wheat, sorghum, millet
   - Tubers: potato, cassava, sweet potato, yam
   - Legumes: soybeans, groundnuts/peanuts, beans, cowpeas
   (Note: Importance in diet varies by region/country)

B. The Diffusion of the World’s Major Crops
   1. Where Did These Crops Originate?
      Today’s crops grown far from “centers of origin” (Origins)
      - C. America/Mexico: corn, tomato, cotton, cacao
      - South America: cassava, potato, peanuts
      - Africa: millet, sorghum, coffee, cowpea, yam
      - Europe: oats, rye
      - Near East: wheat, barley, apples
      - Asia: rice, soybean
2. How were these crops diffused? (What we eat)
   - Explorers
   - Migrants
   - Systematic introductions
     - Rice: US, 1700s
     - Soybeans: Brazil, 1940s, now world’s largest producer

3. Why have these crops been adopted throughout the world?
   - Met preferences of:
     - Consumers:
       - Taste/variety
       - Cheaper source of calories
     - Farmers:
       - Market potential (e.g., soybeans in Brazil)
       - Growing advantages (e.g., cassava in Africa)

4. Why are the “centers of origin” important to us? (maize, beans)

II. What Factors Affect World Food Demand?

A. What Factors Cause Food Demand To Change?
   1. 
   2. 
   3. 

B. What Factors Determine Consumers’ Tastes & Preferences?
   1. Price
   2. Culture (Photo)
   3. Income/changes in income

   Note: Food’s share of HH expenditures: rich (10%), middle income (30-40%), poor countries (50-60%)

   Engel’s law (mid-1800s):
   - As Y increases, families spend smaller % on food;
   - As Y increases, individual’s food preferences change
Examples:
- Old Europe: rye & wheat > meat, fruits, vegetables
- China today: wheat & rice > pork

3. Income elasticity (e) of demand show impact of income change
   **Def.** change in demand (%) associated with 1% change in income (Y)
   - Y elasticity of a food varies between countries, due to cultural & income differences
     (Table 3.4)

Examples
- Rich countries: High? Low?
- Poor countries: High? Low?

C. How Can Countries Predict Future National Demand?
Future food demand = Pop. Change (%) + [(Y Change (%)) x (e)]

<table>
<thead>
<tr>
<th>Type</th>
<th>Change in Demand (%)</th>
<th>Income (Y)</th>
<th>Elasticity (e)</th>
<th>Demand (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor LDC</td>
<td>(3.5%)</td>
<td>(2%)</td>
<td>(0.8)</td>
<td>5.1%</td>
</tr>
<tr>
<td>Mid-income LDC</td>
<td>(2.0%)</td>
<td>(2%)</td>
<td>(0.4)</td>
<td>2.8%</td>
</tr>
<tr>
<td>Wealthy DC</td>
<td>(1.0%)</td>
<td>(2%)</td>
<td>(0.1)</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

III. How “Food Secure” Is the World?

A. The “right to food”
   - A traditional right (Sierra Leone, Indonesia) (Photo)
     - Guaranteeing the “right to be free of hunger” is considered a human right, an obligation of governments (UDHR, 1948)

B. Types of Food Security
   **Def.**: all citizens have enough food to meet their nutritional needs
   1. How is food insecurity/hunger measured?
   2. National vs. household food security
      - National: (Photo)
      - Household: (Photo)
      - How do nations/households achieve food security? (Figure)

   **Note**: national food security doesn’t insure HH food security! Why?
C. Degrees of food insecurity (chronic hunger vs acute hunger)

1. “Chronic” hunger/food insecurity (hunger that leads to malnutrition)
   
   **Def.:** a deficit of 100-400 calories/day (2,100 calories recommended)

   - **Extent:** 923 million people in LDCs, 1/6th of world population
   - **Little progress in reducing # of hungry people** (Trends, 1965-2010)
   - **Hunger**, the main #1 risk to health worldwide
   - **Country:** status, WFP programs (WFP)
   - **Regions most affected:**
     - 98% in LDCs—16% of the population
     - **Most people?** Asia & Pacific: 578 million (63%, <17%)
     - **Highest incidence?** SS Africa: 265 million (26%, 30%)
   - **Most vulnerable groups—Who are the hungry?**
     - Rural poor (majority)
     - Urban poor
     - Disaster Victims
     - Children: 25%
     - Women: 60%

   - **Consequences?**
     - Reduces kids intellectual development (PEM)
     - Reduces adults’ ability to work
     - Increases everyone’s vulnerability to diseases/mortality
     - Slows economic growth/development

   - **Underlying Causes (complex of interrelated human ills)?**
     - Poverty (1.4 billion people earn < $1.25/day) (Figure)
     - Rapid population growth
     - Environmental degradation (e.g., soil erosion)
     - Conflict, civil war refugees
     - Lack of access (e.g., education, land)
     - Natural disasters that cause crop losses

   - **Success in reducing chronic hunger?**
     - Greatest success: Asia (esp. East Asia/China) (Figure)
       due to success in increasing food production/ag. productivity
     - Brazil—“Zero Hunger” program
     - Least success: SS Africa (Kids, Fig. Amt, Change)
     - Why? (Figure)
     - School feeding programs can make a big difference!!

   - **Why limited success?**
     - Problem is so extensive
     - Chronic hunger is hidden, not highly visible
     - Many factors contribute to the problem
     - Lack of political will to allocate needed resources
2. “Acute” hunger/food insecurity (food emergencies)—new food crisis!!

   - [Link](http://www.fao.org/waicent/faoinfo/economic/giews/english/fo/index.htm)
   - **Def.** extreme food shortage that may cause famine

   - **Extent**
     - In 2009 30 countries faced acute food shortages (FAO)

   - **Regions most affected in 2009?** (parts of 20 countries)

   - **Current/recent causes (triggers of acute food shortages?)**
     - **Table**
     - **Political-related**
       - Civil conflict, wars, insecurity, refugees, displaced persons
     - **Weather/natural disaster-related**
       - Drought (Niger) declining ground water table (India)
       - Floods (Pakistan, Mozambique, 2000), cyclones, tsunamis, earthquakes (Haiti)
       - Pest/disease outbreaks (West Africa) (Photo)
       - Crop failure

   - **Social-related**
     - HIV/AIDS

   - **Economic (several new causes, most severe in 2009)**
     - Government policies/economic crisis (Zimbabwe, N. Korea)
     - High oil prices → high fertilizer price (Fig.), high transport costs
     - High international commodity prices (Fig.)
     - Reduction in cropland (US corn diverted to produce ethanol)
     - Export embargos imposed by some countries
     - Global financial crisis (credit crunch, less $ for food aid & investing in infrastructure/agricultural development)

   - **Long-Term trends that have contributed to chronic & acute food insecurity**
     - Growing demand for food in prospering China/India (grain, meat)
     - Decline in funding for agricultural research (now being reversed)
     - Conversion of farmland to urban uses

   - **Today**, food shortages are affecting low income groups in all LDCs
     - Threat to stability/government
Past success in reducing acute hunger?

- Considerable success, few deaths in recent years (Figure)
- Famines have been prevented by:
  - Improved ability to predict: Global Information & Early Warning System (FAO & USAID/FEWS) [http://www.fews.net/]
  - First line of defense is local sharing/coping strategies
  - Then, UN's World Food Program & Western donors have provided food aid as the crisis deepened (Photo) [http://www.wfp.org/ WFP Zimbabwe Niger]
- Criticisms of US/international response to current crises?

3. Famine

   Def. Extreme/acute food shortage that if not addressed, result in acute hunger, emaciation, & death—especially affects kids (Photo)

- Regions—Typically only affects a part/region of a country

Causes of famine?

- Natural factors (drought, flooding, earthquakes, tsunamis, crop pests) are often the trigger/agent
- But human factors are the major cause of famine, government failure to respond magnifies the impact of the natural triggers

Examples of acute food shortages that resulted in deaths

- Colonial India (British neglect)
- Sudan, civil war (government has used food as a weapon)
- N. Korea (govt. restricted NGO food distribution)
- Zimbabwe (govt. prevented NGO access to some regions)

Solutions?

- Immediate: targeted food aid programs to the most vulnerable
- Short term: international pressure on governments (Sudan, Zimbabwe, N. Korea)
- Long term: peace, democracy, agricultural development (Examples?)
- Natural disasters: better preparation & response mechanisms
IV. Ending World Hunger?

A. Can We Meet the Food Needs Future Generations?

1. Optimist’s Arguments until 2008: past successes shows its possible!
   - More food is available worldwide that ever before
   - Food production has increased faster than population
   - Grain yields have doubled in past 30 years
   - Grain prices have declined for decades
   - If prices increase, farmers will grow more grain
   - New technology (esp. biotechnology) is on the horizon
   - Other?

2. Pessimist’s Arguments: predict massive food shortages, more malnutrition! Are these predictions coming true? (“Limits to Growth”)
   - Declining rate of yield increase for cereal crops
   - Declining cropland—due to urbanization, industrialization, soil erosion—will reduce future food supply (Philippines=Honda)
   - Declining supply of groundwater—will reduce water for crop irrigation (unexpected consequence India’s green Revolution)
   - Increasing income—will increased demand for grain & meat, world will need more grain (e.g., China/India)
   - Climate change—1 degree C rise will reduce grain yields 10%
     - IFPRI 2050 price projections: Wheat +40/196%; Corn +60/150%
   - Declining foreign aid for agriculture & agricultural research
   - Population growth & rapid urbanization—will increase demand
   - Rising energy prices—will increase cost of fertilizer, transport
   - Rising corn prices due to ethanol production
   - Other?
B. What’s Needed to Insure Food Security/Reduce Hunger & Poverty?

1. Some proposed supply-related solutions:
   o Increase agricultural productivity/need a 2nd Green Revolution, esp. Africa (e.g. new technologies to increase yields)
   o Promote sustainable natural resource use to reduce environmental degradation (e.g., soil erosion, salinization)
   o Improve rural infrastructure (dams, roads) & market access
   o Increase water use productivity/efficiency
   o Increase funding for agricultural development

   **Note:** Recent donor recognition of the need to invest in improving agricultural, strengthening research systems

   o Other?

2. Some proposed demand-related solutions:
   o Reduce population growth (promote family planning)
   o Enhance food access/safety nets for the most needy (food aid)
   o Other?

3. Some proposed policy-related solutions (US & other DCs)
   o Provide greater debt relief to the poorest LDCs
   o Reduce agricultural subsidies in DCs ($1 billion/day) *(CD)*
   o Reduce corn-based biofuel subsidies ($0.54/gal.)/production
   o Increase assistance to combat the HIV/AIDS crisis in Africa
   o Support multinational efforts to resolve civil conflicts
   o Implement initiatives to reduce global warming
   o Other?
C. Do we (the global community) have the political will to end hunger?

- Minimal progress since early 1990s in reducing world hunger
  - World Food Summit (1994) goal—reduce number of hungry by 50% (from 850 million in 1990-92 to 424 million in 2015)
  - Millennium Development (2000) goal—reduce the percent of hungry by 50% between 1990 and 2015

- FAO estimates poor countries need an additional $44 billion/year of agricultural aid to increase food output as world population increases from 6.7 billion to 9.1 billion (2050)

- Will ending world hunger be given higher priority in the future? Is the current food crisis a wake up call?

- As hunger threatens social & political stability and creates a fertile environment for anti-western hostility, how can we not respond?

V. The Food Crisis in Sub-Saharan Africa

   Many interrelated causes—some generalizations

A. Today’s focus is on Africa, not Asia (1974 food crisis);

What’s the problem in huge (very diverse) Africa? (Figure)

1. Farmers face harsh growing environment (Figures)
   - 2/3 continent has low rainfall (desert or semi-arid), droughts occur frequently
   - Soils are very old, poor in quality (Photo)
   - Tsetse fly reduces the agricultural area (20% of land uninhabitable) & use of animal traction (Figure)
   - Hot climate results in rapid water evaporation
2. Farmers lack access to improve food crop technology
   - Farmers grow many different crops, utilizing many types of cropping systems—Implications? (Figure)
   - Farms are typically small, subsistence oriented—Implications?
   - Little irrigation (compared to Asia), so crop production is risky
   - Poor farmers can’t afford to buy modern inputs (improved varieties, fertilizer), since credit is seldom available
   - Farmers have limited formal education—Implications?
   - Colonial governments neglected food crop research (Figure)
   - Countries have few agricultural scientists/small agricultural research budgets

3. Rapid population growth absorbs growth in food production
   - Total food production up but per capita food production down (Figure)

4. Many governments have neglected agriculture
   - Limited funding for agricultural research
   - Weak extension services, have excluded women (Photo)
   - Government policies have discriminated against agriculture (e.g., forced farmers to sell crops at low prices to keep urban prices low)

5. HIV/AIDS crisis
   - Reduces resources that governments & farmers have available to invest in agriculture
   - Creates farm labor shortages

6. Several countries are plagued by civil war

7. Global Warming (2080)?
   - 5% decline in food production
   - 25-40% loss of natural habitat

   No quick fix is possible

B. Africa has great potential to meet its future food needs. Success stories include Ghana, Mali, Uganda & previously Zimbabwe
<table>
<thead>
<tr>
<th>Crop</th>
<th>Million MT</th>
<th>Percent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize (Corn)</td>
<td>638,043,432</td>
<td>19.3%</td>
<td>19.3%</td>
</tr>
<tr>
<td>Rice</td>
<td>589,125,843</td>
<td>17.9%</td>
<td>37.2%</td>
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<tr>
<td>Wheat</td>
<td>556,348,627</td>
<td>16.9%</td>
<td>54.1%</td>
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<tr>
<td>Potatoes</td>
<td>310,810,336</td>
<td>9.4%</td>
<td>63.5%</td>
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<tr>
<td>Soybeans</td>
<td>189,233,748</td>
<td>5.7%</td>
<td>69.2%</td>
</tr>
<tr>
<td>Cassava</td>
<td>189,099,633</td>
<td>5.7%</td>
<td>75.0%</td>
</tr>
<tr>
<td>Barley</td>
<td>141,503,090</td>
<td>4.3%</td>
<td>79.3%</td>
</tr>
<tr>
<td>Sweet Potatoes</td>
<td>121,852,841</td>
<td>3.7%</td>
<td>83.0%</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>113,308,298</td>
<td>3.4%</td>
<td>86.4%</td>
</tr>
<tr>
<td>Bananas</td>
<td>69,286,046</td>
<td>2.1%</td>
<td>88.5%</td>
</tr>
<tr>
<td>Sorghum</td>
<td>59,584,108</td>
<td>1.8%</td>
<td>90.3%</td>
</tr>
<tr>
<td>Coconuts</td>
<td>52,940,408</td>
<td>1.6%</td>
<td>91.9%</td>
</tr>
<tr>
<td>Yams</td>
<td>39,913,347</td>
<td>1.2%</td>
<td>93.1%</td>
</tr>
<tr>
<td>Groundnuts</td>
<td>35,658,427</td>
<td>1.1%</td>
<td>94.2%</td>
</tr>
<tr>
<td>Plantains</td>
<td>32,974,330</td>
<td>1.0%</td>
<td>95.2%</td>
</tr>
<tr>
<td>Millet</td>
<td>29,805,914</td>
<td>0.9%</td>
<td>96.1%</td>
</tr>
<tr>
<td>Sunflower Seed</td>
<td>27,740,270</td>
<td>0.8%</td>
<td>97.0%</td>
</tr>
<tr>
<td>Oats</td>
<td>26,268,713</td>
<td>0.8%</td>
<td>97.8%</td>
</tr>
<tr>
<td>Beans, Dry</td>
<td>19,038,458</td>
<td>0.6%</td>
<td>98.3%</td>
</tr>
<tr>
<td>Rye</td>
<td>14,850,509</td>
<td>0.5%</td>
<td>98.8%</td>
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<tr>
<td>Peas, Dry</td>
<td>10,248,008</td>
<td>0.3%</td>
<td>99.1%</td>
</tr>
<tr>
<td>Taro (Coco Yam)</td>
<td>8,039,083</td>
<td>0.3%</td>
<td>99.4%</td>
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<td>Chick-Pos</td>
<td>7,122,650</td>
<td>0.2%</td>
<td>99.6%</td>
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<tr>
<td>Broad Beans, Dr</td>
<td>4,033,346</td>
<td>0.1%</td>
<td>99.7%</td>
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<tr>
<td>Cow Peas, Dry</td>
<td>3,721,850</td>
<td>0.1%</td>
<td>99.8%</td>
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<tr>
<td>Lentils</td>
<td>3,093,465</td>
<td>0.1%</td>
<td>99.9%</td>
</tr>
<tr>
<td>Pigeon Peas</td>
<td>3,053,230</td>
<td>0.1%</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,297,598,010</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
### TABLE 3-2

SELECTED INCOME ELASTICITIES OF DEMAND FOR CEREALS AND LIVESTOCK PRODUCTS IN VARIOUS COUNTRIES

<table>
<thead>
<tr>
<th>Country</th>
<th>Cereals</th>
<th>Beef</th>
<th>Pork</th>
<th>Poultry</th>
<th>Cow's milk</th>
<th>Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>0.15</td>
<td>0.58</td>
<td>0.20</td>
<td>0.64</td>
<td>0.45</td>
<td>0.55</td>
</tr>
<tr>
<td>Egypt</td>
<td>0.04</td>
<td>0.80</td>
<td>0.70</td>
<td>1.20</td>
<td>1.00</td>
<td>0.70</td>
</tr>
<tr>
<td>India</td>
<td>0.25</td>
<td>1.00</td>
<td>0.80</td>
<td>1.50</td>
<td>0.80</td>
<td>1.00</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.29</td>
<td>1.50</td>
<td>0.80</td>
<td>1.50</td>
<td>0.20</td>
<td>1.20</td>
</tr>
<tr>
<td>Kenya</td>
<td>0.35</td>
<td>1.00</td>
<td>0.70</td>
<td>1.20</td>
<td>0.59</td>
<td>1.30</td>
</tr>
<tr>
<td>South Korea</td>
<td>0.09</td>
<td>0.80</td>
<td>0.73</td>
<td>1.00</td>
<td>0.49</td>
<td>0.80</td>
</tr>
<tr>
<td>Malaysia</td>
<td>0.14</td>
<td>0.49</td>
<td>0.41</td>
<td>0.87</td>
<td>0.57</td>
<td>0.73</td>
</tr>
<tr>
<td>Mexico</td>
<td>-0.10</td>
<td>0.50</td>
<td>0.49</td>
<td>0.93</td>
<td>0.68</td>
<td>0.59</td>
</tr>
<tr>
<td>Nigeria</td>
<td>0.17</td>
<td>1.20</td>
<td>1.00</td>
<td>1.00</td>
<td>1.23</td>
<td>1.20</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.22</td>
<td>1.20</td>
<td>0.53</td>
<td>1.00</td>
<td>1.50</td>
<td>1.00</td>
</tr>
<tr>
<td>Thailand</td>
<td>0.06</td>
<td>0.56</td>
<td>0.47</td>
<td>0.50</td>
<td>0.20</td>
<td>0.50</td>
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<tr>
<td>Turkey</td>
<td>-0.05</td>
<td>0.80</td>
<td>0.50</td>
<td>1.20</td>
<td>0.80</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Poverty
Global Hunger – widespread, persistent, unacceptable

If decisive action is not taken, the number of chronically undernourished persons will be substantially the same in 15 years time. The greatest suffering will be in sub-Saharan Africa, where food output has not kept pace with population growth. Reversing these trends will require rapid and sustainable production gains as well as measures to make food accessible to those who need it.
Figure 1  Net Global Starvation Deaths, in Millions, per Decade

Trends in World Cereals Yields (kg/ha)
1961-2003

Rice: Annual Prices (US$/mt), 1970-2010

Wheat: Prices (US$/mt), 1970-2010

Maize: Annual Prices (US$/mt), 1970-2010


Source: IFPRI IMPACT simulations.
Figure 1. African crop zones. Source: News from CGIAR 5(1), March 1985.

Population & Food Production
Sub-Saharan Africa (1961-2001)
Figure 3—Percent change in number of under-nourished children, 2000-2005

Source: UN/SCN 2004

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## COUNTRIES IN CRISIS REQUIRING EXTERNAL ASSISTANCE (30 countries)

<table>
<thead>
<tr>
<th>Names of Food Insufficiency</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRICA (20 countries)</td>
<td></td>
</tr>
<tr>
<td>Deprived of adequate food production</td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>Low productivity, civil unrest</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Burundi</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Tanzania</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Lesotho</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Somalia</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Senegal</td>
<td>Low productivity, civil unrest, drought</td>
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<tr>
<td>Sudan</td>
<td>Low productivity, civil unrest, drought</td>
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<tr>
<td>Tanzania</td>
<td>Low productivity, civil unrest, drought</td>
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<tr>
<td>Uganda</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Zambia</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>ASIA (9 countries)</td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Low productivity</td>
</tr>
<tr>
<td>India</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Nepal</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>Low productivity, civil unrest, drought</td>
</tr>
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</table>

## Forms of Malnutrition—Quantity & Quality of Food

### Forms of Malnutrition

<table>
<thead>
<tr>
<th>Form</th>
<th>Cause</th>
<th>Extreme/Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein-energy deficiency</td>
<td>Diet lacks protein &amp; energy due to a deficiency in major macronutrients (e.g., carbohydrates, fats, proteins)</td>
<td>Kwashiorkor—swelling, moon face</td>
</tr>
<tr>
<td>Macronutrient Deficiencies</td>
<td>Diet lacks protein &amp; energy due to a deficiency in major macronutrients (e.g., carbohydrates, fats, proteins)</td>
<td>Kwashiorkor—swelling, moon face</td>
</tr>
<tr>
<td>Micronutrient Deficiencies</td>
<td>Iron, Vitamin A, Iodine, Zinc</td>
<td>Micronutrient Deficiencies</td>
</tr>
<tr>
<td>Iron</td>
<td>Lethargy/tiredness, impairs cognitive development</td>
<td>Micronutrient Deficiencies</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>Weakens immune system, increases risk of dying from diarrhea, other diseases; leading cause of child blindness</td>
<td>Micronutrient Deficiencies</td>
</tr>
<tr>
<td>Iodine</td>
<td>Swelling of the thyroid (goiter), impairs brain development</td>
<td>Micronutrient Deficiencies</td>
</tr>
<tr>
<td>Zinc</td>
<td>Affects growth, weakens immune system, linked to higher risk of dying from diarrhea &amp; pneumonia</td>
<td>Micronutrient Deficiencies</td>
</tr>
</tbody>
</table>
Selected international cereal prices

USD/tonne

<table>
<thead>
<tr>
<th>1000</th>
<th>900</th>
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<th>700</th>
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<th>500</th>
<th>400</th>
<th>300</th>
<th>200</th>
<th>100</th>
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</thead>
<tbody>
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</tr>
</tbody>
</table>

Rice

Wheat

Maize

Note: Prices refer to monthly average. For July 2008, two-week average, except rice, one-week average.

Graph by IFDC—An International Centre for Soil Fertility and Agricultural Development.
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