Food Security and Nutrition

Mali Delegation Visit
April 19, 2010

Global Undernutrition Trends

Chronic Undernutrition 1990-2008
Global Undernutrition

- Non-communicable diseases
- Pneumonia
- Diarrhoea
- Malaria
- Measles
- Other infections
- Nutritional deficiencies
- Severe neonatal infections
- Prematurity
- Birth asphyxia and trauma
- Injuries

Shaded area indicates contribution of undernutrition to each cause of death.

West Africa Undernutrition

<table>
<thead>
<tr>
<th>Country</th>
<th>% of children underweight</th>
<th>% of children stunted</th>
<th>% of children wasted</th>
<th>% of women with BMI &lt;18.5</th>
<th>% of women with Anemia</th>
<th>% of Children with Anemia</th>
<th>% of infants exclusively breastfed &lt;6 months</th>
<th>% of children fed according to three Infant &amp; Young Child Feeding Practices (6-23 months)</th>
<th>% of children (6-59 months) who received Vitamin A</th>
<th>% of households consuming adequately iodized salt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>13</td>
<td>22</td>
<td>5</td>
<td>9</td>
<td>65</td>
<td>76</td>
<td>54</td>
<td>23</td>
<td>78</td>
<td>32</td>
</tr>
<tr>
<td>Liberia</td>
<td>19</td>
<td>39</td>
<td>8</td>
<td>10</td>
<td>87</td>
<td>29</td>
<td>25</td>
<td>43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mali</td>
<td>27</td>
<td>34</td>
<td>13</td>
<td>11</td>
<td>73</td>
<td>83</td>
<td>38</td>
<td>7</td>
<td>89</td>
<td>79</td>
</tr>
<tr>
<td>Nigeria</td>
<td>24</td>
<td>38</td>
<td>9</td>
<td>14</td>
<td>67</td>
<td>76</td>
<td>17</td>
<td>23</td>
<td>33</td>
<td>97</td>
</tr>
<tr>
<td>Senegal</td>
<td>14</td>
<td>16</td>
<td>8</td>
<td>12</td>
<td>58</td>
<td>70</td>
<td>34</td>
<td>75</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>Global AVERAGE</td>
<td>24</td>
<td>38</td>
<td>11</td>
<td>15</td>
<td>56</td>
<td>68</td>
<td>43</td>
<td>26</td>
<td>68</td>
<td>62</td>
</tr>
</tbody>
</table>
### Mali Undernutrition Trends

<table>
<thead>
<tr>
<th>Location</th>
<th>Height-for-age below -2 SD 2006</th>
<th>Height-for-age below -2 SD 2001</th>
<th>Weight-for-height below -2 SD 2006</th>
<th>Weight-for-height below -2 SD 2001</th>
<th>Weight-for-age below -2 SD 2006</th>
<th>Weight-for-age below -2 SD 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kayes, Koulikoro</td>
<td>31.7</td>
<td>36.5</td>
<td>13.8</td>
<td>10.6</td>
<td>30.4</td>
<td>32.2</td>
</tr>
<tr>
<td>_Kayes</td>
<td>27.7</td>
<td>38</td>
<td>13</td>
<td>10.2</td>
<td>27.6</td>
<td>32</td>
</tr>
<tr>
<td>_Koulikoro</td>
<td>34.9</td>
<td>35.3</td>
<td>14.3</td>
<td>11</td>
<td>32.6</td>
<td>32.4</td>
</tr>
<tr>
<td>Sikasso, S'gou</td>
<td>37.9</td>
<td>44.2</td>
<td>14</td>
<td>11.7</td>
<td>34.5</td>
<td>38.9</td>
</tr>
<tr>
<td>_Sikasso</td>
<td>40.3</td>
<td>47.4</td>
<td>14.2</td>
<td>9.5</td>
<td>36.9</td>
<td>40.7</td>
</tr>
<tr>
<td>_S'gou</td>
<td>35.3</td>
<td>39.9</td>
<td>13.7</td>
<td>14.5</td>
<td>31.9</td>
<td>36.5</td>
</tr>
<tr>
<td>Mopti, Tombouctou/Gao, Kidal</td>
<td>38.1</td>
<td>39</td>
<td>13.7</td>
<td>11.8</td>
<td>34.9</td>
<td>34.4</td>
</tr>
<tr>
<td>_Mopti</td>
<td>39</td>
<td>38.8</td>
<td>12.3</td>
<td>10.4</td>
<td>33.3</td>
<td>33.7</td>
</tr>
<tr>
<td>_Kidal/Gao/Tombouctou (2001)</td>
<td>37</td>
<td>39.5</td>
<td>15.4</td>
<td>15.8</td>
<td>36.9</td>
<td>36.2</td>
</tr>
<tr>
<td>Bamako</td>
<td>19.4</td>
<td>15.8</td>
<td>12.7</td>
<td>6.1</td>
<td>23.2</td>
<td>15.3</td>
</tr>
<tr>
<td><strong>Total National</strong></td>
<td><strong>33.9</strong></td>
<td><strong>37.6</strong></td>
<td><strong>13.7</strong></td>
<td><strong>10.7</strong></td>
<td><strong>32</strong></td>
<td><strong>33.3</strong></td>
</tr>
</tbody>
</table>

### Food Security Framework

**Food security** = all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life.

**AVAILABILITY:**
sufficient quantities of food from household production, other domestic output, commercial imports or food assistance

**ACCESS:**
adequate resources to obtain appropriate foods for a nutritious diet, which depends on income available to the household, on the distribution of income within the household and on the price of food

**UTILIZATION/CONSUMPTION:**
proper biological use of food, requiring a diet providing **sufficient energy and essential nutrients**, potable water and adequate sanitation, as well as knowledge within the household of food storage and processing techniques, **principles of nutrition** and **proper child care and illness management**
Why focus on agriculture-nutrition linkages?

- Agriculture production is necessary but not sufficient to address food insecurity (both access and utilization components)
- Who earns the income is often as important as income itself
- Food is not always equitably distributed within the households
- Food without attention to health, care and environment is not enough to achieve food security

Nutrition Framework

Economic growth and agricultural production alone are not enough to improve nutrition everywhere and for everyone...

- 2002-2008 average annual economic growth of 4.03%
- Agriculture sector one of largest and most important activities
- Chronic undernutrition in 1999: 53%
- Chronic undernutrition in 2002: 54%

Guatemala

Percentage of children under five who are stunted by household wealth quintile
Improved Nutrition

**Agriculture**
- Production for household’s own consumption
- Income-oriented production for sale in markets
- Reduction in real food prices associated with increased agricultural production

**Social and Behavioral**
- Intra-household food distribution
- Empowerment of women as instrumental to household food security and health outcomes
- Knowledge of nutrition at the community level

**Social Protection**
- Secure basic consumption and reduce fluctuations in consumption (seasonal, shocks)
- Enable savings and investments through reduction in risk and income variation
- Build, diversify, and enhance use of assets

**Health**
- Access to health care services
- Family planning and reproductive health
- Water, sanitation, and hygiene

**Nutrition Framework**

**The window of opportunity: -9 to 24 months**

**Mild and moderate undernutrition**
Guiding principles for nutrition interventions:

- Focus on utilization/consumption
- Focus on the chronically hungry
- The window of opportunity is from pregnancy to 24 months
- Quality of foods and utilization within the household are crucial elements of food security
- Prevention of malnutrition is ultimately the most sustainable approach
- Programs should be country-owned and designed based on the country-specific determinants of malnutrition and food insecurity

USAID STRATEGIC APPROACH

**PREVENTION OF UNDERNUTRITION**

- The development window of opportunity
  - Maternal nutrition
  - Early initiation, exclusive, and continued breastfeeding
  - Infant and young child feeding practices
  - Adequate water, sanitation and hygiene
- Diet quality and diversification
  - Community and home food production
  - Post-harvest food preservation and processing
  - Food fortification

**Consensus and capacity building**

**Private sector engagement**

**Community-oriented platforms**

**Country Ownership and Enabling Environment**

**Nutrition and food security policy**

**Monitoring and evaluation**

**Advance new tools and approaches**

**NUTRITION SERVICE DELIVERY**

- Micronutrient supplementation
  - Targeted micronutrient supplementation for pregnant women and young children
- Community Management of Acute Undernutrition
  - Management of moderate undernutrition
  - Treatment of severe acute undernutrition with ready-to-use therapeutic foods
• Community-based education and counseling programs to promote maternal nutrition, exclusive breastfeeding under six months, and the introduction of appropriate locally available complementary foods for children 6 to 23 months
• Innovative food supplements for young children and in partnership with the private sector, including ready-to-use lipid-based food supplements
• Increasing access to and consumption of diverse and high-quality foods by linking with agriculture and economic growth programs
• Micronutrient interventions for the most vulnerable, including vitamin A for children under five, iron for women and children, and iodized salt
• Fortification programs as part of value-chain development with the private sector, including biofortification
• Community Management of Acute Malnutrition (CMAM) that is integrated into national health services and community outreach

Identify needs:
• Who and where are the undernourished?
• What are the causes of undernutrition?
• What are the potential impediments to progress?
• Is national data available and accurate? What information gaps exist?
• Is there a need for national or community advocacy?
• What institutional capacity exists and is needed at the local, national, and regional levels?

Identify opportunities:
• What are the existing national food and nutrition policies and strategies?
• What is the government coordination mechanism for nutrition?
• Who are the main actors, and what are their strengths and weaknesses?
• Are there existing successful programs that could be scaled-up?

1. What critical analytical, capacity, or strategic gaps need to be filled in FY10?
2. What is USAID’s strategic niche and comparative advantage?
3. How will these investments build a strong foundation for a large-scale country-owned program with impact of undernutrition?
Nutrition Framework: Research

Pregnancy (-9 to 0)
- Maternal anemia packages with iron folic acid supplementation
- Lipid nutrient supplements

Infancy (0 to 6)
- Newborn Vitamin A supplementation
- Lipid nutrient supplements

Early Childhood (6 to 23 months)
- Micronutrient powders
- Community Management of Acute Malnutrition

Childhood (6 to 59 months)
- Staple food fortification
- Biofortification

Population-based
- Biofortification

New technology development and breaking barriers to scale of existing technologies

POTENTIAL IMPACT
- Improves measurement of household food insecurity and dietary diversity
- Improves timeliness of survey data and facilitates a better response
- Promote trade of quality foods and regional market development
- Improves targeting of FFP programs and achieves better impact on nutritional status for the most vulnerable
- Improves quality of food aid commodities and achieves better impact on nutritional status for the most vulnerable
- Strengthens food security, nutrition, and food assistance response to the HIV pandemic
- Improves nutrition outcomes of humanitarian assistance programs and builds capacity for sustainable nutrition development programs
### The role of population

<table>
<thead>
<tr>
<th>Country</th>
<th>Early 1990s</th>
<th>Mid-1990s</th>
<th>Late 1990s</th>
<th>Early 2000s</th>
<th>Mid 2000s</th>
<th>Late 2000s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benin</td>
<td>5.8</td>
<td></td>
<td>5.5</td>
<td>5.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>6.3</td>
<td>6.3</td>
<td>5.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>6.1</td>
<td>5.0</td>
<td>4.4</td>
<td>4.3</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Liberia</td>
<td>6.4</td>
<td></td>
<td></td>
<td></td>
<td>5.1</td>
<td></td>
</tr>
<tr>
<td>Mali</td>
<td>6.9</td>
<td>6.6</td>
<td>6.6</td>
<td>6.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Niger</td>
<td>6.8</td>
<td>7.0</td>
<td>6.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>5.7</td>
<td>4.6</td>
<td>5.6</td>
<td></td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>Senegal</td>
<td>6.2</td>
<td>5.9</td>
<td>5.5</td>
<td></td>
<td>5.2</td>
<td></td>
</tr>
</tbody>
</table>

### US Programs

- Food Stamp Program: 62%
- National School Lunch Program: 15%
- Child and Adult Care Food Program: 4%
- School Breakfast Program: 4%
- WIC: 10%
- All other programs: 5%

Note: USDA expenditures for food and nutrition assistance totaled $60.7 billion in FY 2008. Source: USDA, 2008b.
Special Supplemental Nutrition Program for Women, Infants and Children (WIC):

- Provides supplemental food, nutrition education, and referrals to health care and other social services to low-income women, infants, and children ages 1-4
- Established in 1972
- 100% federally funded
- Food package revisions in 2007
- Nutrition Services and Administration provide nutrition education and breastfeeding promotion and support
- Prices for food at home in the US rose 6% in 2008 (largest single-year increase since 1990)

WIC Eligibility:

- Categorical: pregnant women, nonbreastfeeding women up to 6 months postpartum, breastfeeding women up to 1 year postpartum, an infant up to his/her first birthday, or a child up to his/her fifth birthday
- Residential: Must reside in the state where they establish eligibility
- Income: 185% of the Federal poverty guidelines based on family size
- Nutritional Risk:
  - Conditions detectable by biochemical or anthropometric measurements (anemia, underweight, overweight)
  - Documented nutritionally-related medical conditions (micronutrient deficiencies, metabolic disorders)
  - Dietary deficiencies that impair or endanger health (inadequate dietary patterns)
  - Conditions that directly affect the nutritional health of a person (alcoholism, drug abuse)
  - Conditions that predispose a person to inadequate nutritional patterns or nutritionally-related medical conditions (migrancy, homelessness)
WIC Participant Benefits:

- **Supplemental Food Package:** Unique package based on age and individuals consisting of milk, juice, eggs, fruits, vegetables, infant formula, whole-grain products, iron-fortified cereal and more.
  - Retail: participants obtain supplemental food by exchanging a check/voucher at authorized retail outlets
  - Home delivery: supplemental food delivered to participant’s home
  - Direct distribution: participants pick up supplemental food from storage facilities operated by the State or local agency
- **Nutrition Education:** 2 sessions during each 6 month period
- **Referrals to health care and social services:** Local WIC agencies assist participants in obtaining health care and social services including immunizations, food stamps, and Medicaid
- **Farmers’ Market Nutrition Program:** WIC participants issued FMNP coupons in addition to regular WIC food instruments to purchase fruits, vegetables, and herbs from farmers or markets that are approved (coupons redeemed through FMNP resulted in over $20 million in revenue to farmers)