Acknowledgements

- Respondents; Households; Communities
- National, division, district, Upazila, and village authorities, including MOHFW, MOFDM
- Joint Technical Committee: IPHN, UNICEF, WFP, FAO, BBS, DGHS, MOHFP, Mitra and HKI
- MITRA – sampling framework, training, data collection and data entry/cleaning
- Centre for Disease Control (CDC) Atlanta - informal technical support
Outline of Presentation

1. Background

2. Survey Methodology

3. Results:
   3.1. Demography and Gender
   3.2. Food Markets
   3.3. Household Food Security
   3.4. Nutrition, Health, Water/Sanitation
   3.5. Malnutrition and Household Food Security Linkages

4. Conclusions

5. Recommendations
1. Background Food Price Shock … and macro-econ. context
Timing: Food Price Shock…

- Inflation rising mid 2006…
  - Inflation rate… > 7%

- Food Inflation…
  - Rapid Rise begins mid 2007
Magnitude of domestic prices increases?
Long term time Series: July ’95 thru Jan. 2009
Wholesale prices of rice (Real)
Price rise causes...

- Global:
  - Crop failures, oil price rise, bio-fuels...

- Regional:
  - Trade barriers, export bans ...

- Domestic:
  - Natural disasters
    - 2007 Floods
    - 2007 Cyclone Sidr
Food Grain Imports rise dramatically…2007-08

Value of Food Grain imports as percent total imports…
2007-08 reaches 6%, vs. 3% in previous years

P= Provisional estimates up to Feb.2009
Trade barriers with India

- Rice*; “Minimum Export Price” set artificially high
  Exports later banned: April 2008

* Rice: non-Basmati Rice
Bangladesh rice price De-links from India…

Source: India Ministry of Consumer Affairs, Food and Public Distribution; modified by WFP
Background… Economic Performance…

- Moderately high GDP growth rates
  - FY 2006-07: 6.5%
  - FY 2007-08: 6.2%

- Remittances strong…
Food Availability: Cereals, rice…

- Rice… FY 2007-08 …close to rice self sufficient
  - 29.8 Million MTs of food grain
    - Up 6.1% from previous year
    - Despite major natural disasters, Floods, Cyclone
    - Bumper Boro major factor; 17.8 Million MTs
      - 18.7% increase vs. previous year
2. Survey Objectives and Methodology
Primary Survey Objectives

Food Security

- Understand the impact of the food price shock on household food security. (Household Survey)
  - Who most affected? Demographic, Livelihood characteristics
  - Coping Strategies?
  - Regional differences… Urban/Rural, Divisional level…

- Examine how food markets responded, constraints, traders perceptions etc (Market Survey)

- Recommendations re: food security and social protection, Social Safety Net/SSNs programmes…
Objectives Cont-----

Nutrition, Health, Water and Sanitation

**Nutritional Status**
- Determine prevalence of acute malnutrition, underweight and stunting in children 6-59 months
- Determine prevalence of MUAC in mothers of children < 5 years

**Infant and Young Child Feeding**
- Gain better understanding of IYCF practices for children < 24 months
Objectives Cont-----

Nutrition, Health, Water and Sanitation

Illness and Mortality
- Determine crude and U5 mortality rates in 6 months prior to the survey
- Determine prevalence of diarrhea, fever, and ARI in children 6-59 months in 2 weeks prior to the survey and health seeking

Access To Services
- Estimate proportion of children 6-59 months in past 6 months and postpartum women who received Vitamin A in first 6 weeks after delivery
- Estimate proportion of pregnant women who received iron/folate supplementation

Water and Sanitation
- Estimate the coverage of latrines and access to safe water among households
Survey Design and Data Collection

- **WFP & UNICEF** - Survey protocol and questionnaires design.

- **Technical Committee**: IPHN, UNICEF, WFP, FAO, BBS, DGHS, MOHFP, MITRA and HKI provided inputs on entire survey process.

- **Training** and **pilot-survey/pre-test** conducted around Dhaka.

- Data collection - **November 11, 2008 - January 19 2009**, during the *Aman* harvest season by MITRA Associates.

- 12 survey teams (2 supervisors, 6 interviewers, 6 quality control officers) and a **supervisory team** from IPHN and WFP field staff.

- The food security component and market analysis was led by WFP and nutrition component led by UNICEF/IPHN.
Sampling Frame

- Derived from the sample clusters of the 2007 BDHS survey

- Sampling frame - **Enumeration Areas (EA)** and **Sampling unit - Household.**

- A representative sample for the **country as a whole**, for the **urban and the rural areas separately**, and for each of the **six divisions**.

- Sample Design - **Two-stage, stratified sample**
  - **Stage One** – 361 clusters were selected randomly
  - **Stage Two** – Selection of households within a cluster – Goal - 30 HHs per cluster and about 10,000 **households in total**.

- Adequacy of HH number per indicator was checked with **CDC, Atlanta**

- Within a cluster, all **HH were selected with a fixed interval from the enumeration area list**

- Interviewer collected data from the **selected household only – No replacement** of household
Markets/Trade

- 180 Markets - every other cluster

- Markets selected randomly and proportionally to the distribution of the clusters among rural and urban areas.

- Maximum of 5 traders – systematic random selection of 2 wholesalers and 3 retailers/shop keepers.
### Assumptions used for Sample Size Calculations per division/Rural/Urban/National

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Estimated Prevalence</th>
<th>Desired Precision</th>
<th>Design Effect</th>
<th>Sample size</th>
<th>10% Non-response</th>
<th>Number of households needed 1 child/HH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GAM (&lt;-2 z score + edema)</strong></td>
<td>16%</td>
<td>± 5</td>
<td>1.5</td>
<td>310</td>
<td>344</td>
<td>344</td>
</tr>
<tr>
<td><strong>Stunting (HAZ &lt;-2)</strong></td>
<td>50</td>
<td>± 5</td>
<td>2</td>
<td>769</td>
<td>854</td>
<td>854</td>
</tr>
<tr>
<td><strong>Underweight (WAZ &lt;-2)</strong></td>
<td>50</td>
<td>± 5</td>
<td>2</td>
<td>769</td>
<td>854</td>
<td>854</td>
</tr>
<tr>
<td><strong>Vitamin A last 6 months</strong></td>
<td>95%</td>
<td>± 10</td>
<td>2</td>
<td>37</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td><strong>MUAC</strong></td>
<td>15%</td>
<td>± 5</td>
<td>2</td>
<td>392</td>
<td>435</td>
<td>435</td>
</tr>
</tbody>
</table>
### Sampling Size

<table>
<thead>
<tr>
<th>Samples:</th>
<th>Clusters</th>
<th>HHs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barisal</td>
<td>48</td>
<td>654</td>
</tr>
<tr>
<td>Chittagong</td>
<td>62</td>
<td>1859</td>
</tr>
<tr>
<td>Dhaka</td>
<td>78</td>
<td>3242</td>
</tr>
<tr>
<td>Khulna</td>
<td>57</td>
<td>1319</td>
</tr>
<tr>
<td>Rajshahi</td>
<td>69</td>
<td>2673</td>
</tr>
<tr>
<td>Sylhet</td>
<td>47</td>
<td>632</td>
</tr>
<tr>
<td>Rural</td>
<td>227</td>
<td>8089</td>
</tr>
<tr>
<td>Urban</td>
<td>134</td>
<td>2289</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>361</strong></td>
<td><strong>10378</strong></td>
</tr>
</tbody>
</table>

For Market/Trade survey, **180 markets** and **900 traders** were interviewed.
3. Results
3.1. Demography and Gender
Demography and Gender

- Average household size: 5 persons
- % of households with dependents: 40%
- % of female-headed households: 8%
- % of heads of household that never attended school: 43%

(Dependency is the ratio between the active population and inactive (below 15-years and 60+ years) population, i.e. those that are not working)
3.2. Results/Highlights
Food Markets Survey
Traders Perceptions, Market constraints: Low consumer purchasing power, a major constraint

35% of traders: “low purchasing power” the major constraint

Source: survey, HHFSNA 2008
Traders Perceptions: Main Causes High Food Prices

Source: survey, HHFSNA 2008
Traders identify more customers requesting credit

95% of traders extend credit to compensate for low demand…

Source: survey, HHFSNA 2008
3.3. Results/Highlights
Household Food Security
Households more dependant on the market…

- Number of market participants grows
  - “Net food buyers” group expands most (+28%)
    - Urban (+35%)
    - Female headed HHs (+68%)
  - Livelihood Groups becoming more dependant…
    - Wage laborers (Non-Ag) +59%
    - Casual Workers +55%
    - Remittance earners +53%
Impact on household income...

- Real Income per HH drops by 12%
  - HIES 2005: 4533 (BDT)
  - HHFSN 2008: 4000 (BDT)

- Nominal income, 2008 vs. 2007
  - 2008 increases by 11%
Purchasing power fell due to rising food prices...

A day’s worth of labor bought less rice...

March 2007:
1 day’s wage = 5 to 7 kg of coarse rice.

June 2008:
1 day’s wage = 3.7 to 5 kg of coarse rice.

The amount (need specific; i.e. 4 kgs.) is enough to feed a household of 5 in a day.

However larger percentage share food expenditures … compromised expenditures on other non-food basic needs
Households spend more on food...

- **Cause for concern**
  - Less money for other basic needs
  - Potential impact on development, and MDGs
Households spend more on food…

• Highest shares… by Division
  • Sylhet 67.7%, Chittagong (64%) and Dhaka (62.2%)

• Female-headed households 64 %
  • Vs. 62% MHH

• Unlike past expenditure patterns …
  • not much difference between rural urban food expenditures
Coping by Taking on debt, and reducing health expenditures

Most common coping strategies last 12 months

- **34%** Borrow Money from Family, Friends
- **33%** Borrow Money from Banks, Micro-credit
- **22%** Reduce health expenditures

Source: survey, HHFSNA 2008
Female Headed Households Struggling to Cope

Coping Strategies Index; Results

On average...Female headed hhs had comparatively much higher; 64% higher... CSI scores vs. HHs headed by males.
One in four (25%) of households are food insecure.
## Who are the most affected households?

<table>
<thead>
<tr>
<th></th>
<th>% Food Insecure (Food Consumption Scores)</th>
<th>% Spent on food</th>
<th>Coping Strategies Index Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-agric. labourers</td>
<td>38%</td>
<td>69%</td>
<td>23</td>
</tr>
<tr>
<td>Agric. labourers</td>
<td>45%</td>
<td>69%</td>
<td>27</td>
</tr>
<tr>
<td>Casual workers</td>
<td>56%</td>
<td>76%</td>
<td>26</td>
</tr>
<tr>
<td>Average</td>
<td>25%</td>
<td>62%</td>
<td>14</td>
</tr>
</tbody>
</table>
3.4. Nutrition, Health, Water and Sanitation
Child Nutrition
### 2009 National Estimates: Child Malnutrition, Wasting, Stunting, Underweight 6 – 59 months (WHO standards)

<table>
<thead>
<tr>
<th>Children 6 – 59 months</th>
<th>Wasting (WHZ)</th>
<th>Stunting (HAZ)</th>
<th>Underweight (WAZ)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Malnutrition:</strong></td>
<td>13.5% (CI 12.1-15.0)</td>
<td>48.6% (CI 46.5-50.6)</td>
<td>37.4% (CI 35.4-39.5)</td>
</tr>
<tr>
<td><strong>Severe Malnutrition:</strong></td>
<td>3.4% (CI 2.8-4.2)</td>
<td>20.1% (CI 18.4-21.8)</td>
<td>12.3% (CI 10.9-13.8)</td>
</tr>
</tbody>
</table>
Wasting is worse in Barisal and Rajshahi divisions. These findings are consistent with Food Security findings – the most food insecure [poor /borderline food consumption groups] divisions are in these the same divisions
More children aged 6-23 months are malnourished than children aged 24-59 months and this is closely linked to the poor feeding practices.
Overall, stunting remains high across all divisions. Sylhet has the highest stunting rate while Dhaka, Barisal and CHT are higher than the national average. Sylhet has a high increase of food expenditures and it is also one of the divisions affected by price transmissions.
Levels of underweight are all above the 30% WHO threshold with exception of Khulna division. Barisal and Sylhet have shown high rates of underweight which are consistent with the food security situation in those two divisions.
Levels of acute malnutrition has decreased – compared to BDHS 2007. However, since this survey was conducted during the best period of the year, **GAM rate of 13.5% (which is just below the emergency threshold)** indicates a serious nutritional situation.
National Estimates:
Child Malnutrition, Stunting
2005 - 2009 (WHO standards)

Stunting levels have increased – but remain stable in comparison to 2005. This is in harmony with the analysis of the food consumption groups and dietary intake.
Underweight has decreased a little, but it still remains above the WHO thresholds – however, survey conducted during the harvest season, thus this explains the “improvement”
Poor infant and young child feeding practices with limited practice of exclusive breastfeeding to 6 months.
Infant & Young Child Feeding Practices

Percentage of children 6 - 23.9 months that received a minimum diet diversity
Min. 4 food groups/day from 7 different food groups

Over 60% of the children age 6-24 months did not received the minimum diet of at least 4 food groups a day
About 50% of the children 6-24 months did not receive a minimum meal frequency - Barisal, Chittagong and Sylhet are the worst.
Maternal Nutrition
Stunting is closely correlated with poor maternal nutrition status

(Note: Maternal nutrition status based on low MUAC of <221 mm)
Both wasted and underweight children are more likely to be illness than stunted children.
Maternal Nutrition

- **MUAC**: 18.2% < 221 mm GAM and 8.9% < 214 mm SAM (WHO cut-off)

- **Vitamin A** coverage in mothers 6-weeks post-partum: 34%

- **Iron/folate** supplementation of pregnant women: 50.3%
Child Health

• **48.6%** of children were ill in the 2-weeks before the survey (49% rural, 47.5% urban)

• **85%** of children were brought to health facilities. Lack of money was the major reason (**45.5%**) for those children not brought for health care.
General Health: (household)

• 50.8% reported illness in the previous 2-weeks (51.1% rural, 50% urban)

• 85% of the households surveyed sought healthcare treatment. Of those that did not, 65.6% stated that lack of money was the major reason.
## General Mortality and Child Mortality, Under-5 Years

<table>
<thead>
<tr>
<th>Area</th>
<th>U5 Mortality Rate: total U5 deaths/10,000 U5 children/day (alert threshold: &gt;2.0/10,000/day)</th>
<th>Crude Mortality Rate: total deaths/10,000 persons/day (alert threshold: &gt;1.0/10,000/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>0.66 (CI 0.64-0.68)</td>
<td>0.22 (CI 0.21-0.23)</td>
</tr>
<tr>
<td>Barisal</td>
<td>0.66 (CI 0.61-0.71)</td>
<td>0.10 (CI 0.09-0.11)</td>
</tr>
<tr>
<td>Chittagong</td>
<td>0.72 (CI 0.69-0.74)</td>
<td>0.22 (CI 0.21-0.23)</td>
</tr>
<tr>
<td>Dhaka</td>
<td>0.71 (CI 0.69-0.73)</td>
<td>0.34 (CI 0.33-0.35)</td>
</tr>
<tr>
<td>Khulna</td>
<td>0.60 (CI 0.56-0.64)</td>
<td>0.17 (CI 0.16-0.18)</td>
</tr>
<tr>
<td>Rajshahi</td>
<td>0.58 (CI 0.55-0.61)</td>
<td>0.30 (CI 0.29-0.31)</td>
</tr>
<tr>
<td>Sylhet</td>
<td>0.61 (CI 0.56-0.66)</td>
<td>0.08 (CI 0.07-0.09)</td>
</tr>
<tr>
<td>Rural</td>
<td>0.65 (CI 0.64-0.66)</td>
<td>0.26 (CI 0.25-0.27)</td>
</tr>
<tr>
<td>Urban</td>
<td>0.71 (CI 0.68-0.74)</td>
<td>0.14 (CI 0.13-0.15)</td>
</tr>
</tbody>
</table>

**Mortality rates well below alert and emergency thresholds**, both nationally, and within divisions. There is no statistical difference between urban and rural.
89.3% of the population have as a main source of drinking water, a tubewell or borehole at the moment of the survey, but only 7.5% of households treat their drinking water at the moment (no change from 12 months ago)
51.4% of the population used an improved toilet facility, usage of improved latrine more in urban area compared to rural area.
3.5. Malnutrition and Household Food Security Linkages
FOOD SECURITY and NUTRITION LINKAGES

Statistical Linkages (Significant)

- Children within households with **Poor and borderline household food consumption scores** are more likely to be malnourished (wasting, stunting, underweight).

- Household with high percent share of **food expenditures** were more likely to have malnourished children (wasting, stunting, underweight).

- Households having higher **Coping Strategy Index (CSI) scores** are more likely to have malnourished children (wasting, stunting, underweight).

- Households with seasonal or irregular income (**agriculture wage, non-agriculture wage and casual work**) are more likely to have malnourished children (stunting / underweight).
4. Conclusions
Household Food Security and Markets

- Trade barriers were a major contributing factor re: food price rise.
- Food traders identify main constraints; low capital for investment in food storage facilities.
- Households heavy reliance on debt to cope with food access problems.
- Households spent a greater percent of their total expenditures on food
- Households compromise health care expenditures to cope; implications for MDGs etc.
- Social protection and Social Safety Net expansion needs to be faster, more agile, and better targeted
Nutrition, Health, Water and Sanitation

- Overall, wasting and underweight levels remains high while there is a slight increase in stunting levels.

- The youngest children present higher rates of malnutrition, especially acute malnutrition.

- Diet quality does not meet acceptable levels for children, thus young children less than two years of age do not eat the minimum acceptable diet.

- Child malnutrition is strongly associated with the two main indicators for food security (i.e. children from poor and borderline food consumption groups or/and from households with increase % of expenditure on food are more likely to be malnourished).

- Prevalence of illness among other household members and among children under five years old is high. Lack of money is an important reason for not seeking medical care, while fever, respiratory illness and diarrhoea are significantly associated with acute malnutrition (wasting).

- Mortality rates remain below alert and emergency thresholds.

- Overall, water and sanitation indicators are stable but quality of water and water treatment are not necessarily good.
5. Recommendations
Recommendations

1. Enhance the efficiency and effectiveness of the Social Safety Net system; expand coverage in areas of high malnutrition and food insecurity.

2. Targeted supplementary feeding w/ micronutrients for vulnerable groups, Children Under 5’s, Under 2’s, Pregnant and/or Lactating Women

3. Cash interventions when food abundant, accounting for seasonality, and market availability; otherwise targeted food assistance.

4. Support investment in food marketing and storage infrastructure, e.g. warehouses for larger stocks.

5. Promote open trade policies within region, avoid policies that result in trade barriers.
Recommendations

6. Invest more and build on existing information systems for monitoring and surveillance, early warning for early actions

7. Address the large numbers of acutely malnourished children with management of acute malnutrition at both facility and community levels

8. Improve optimal infant and young child feeding - emphasizing maternal and community participation

9. Emphasize micronutrient-enriched foods and diet diversity in food assistance interventions, food security and nutritional programmes

10. Strengthen health and hygiene promotion to prevent and treat diarrhoeal disease, respiratory infections and fever

11. Harmonized and develop and standardized national survey guidelines to enable data quality and comparability.