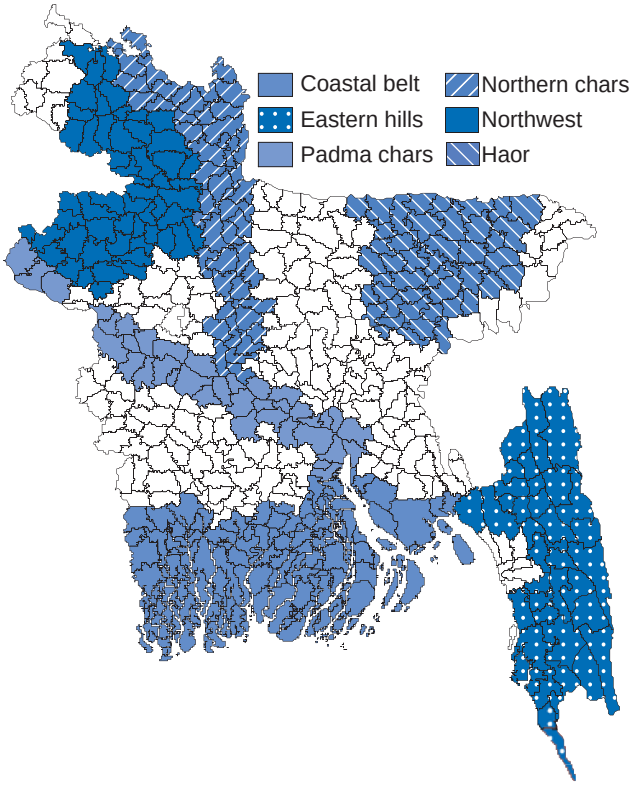
# BANGLADESH

FSNSP | Round 10

## The Food Security Nutritional Surveillance Project Results from Round 10 February to April 2013

The Food Security Nutritional Surveillance Project (FSNSP) provides up-to-date, seasonal information on the food and nutrition security of six surveillance zones in Bangladesh, depicted in Figure 1, as well as for the nation as a whole. In each surveyed household, multiple members are interviewed to obtain commonly referenced and standardized indicators of food security, women's care and nutrition, as well as children's care and nutrition.

*Figure 1: FSNSP surveillance zones*




FSNSP estimates levels of food insecurity from household coping and food consumption patterns, because food insecurity – no matter if it is due to low availability of food stocks, low household access to foods, or biased utilization of a household's food stocks – results in a similar range of experiences and observables for households and individuals. All food security questions are asked to the person identified in as primarily responsible for managing the kitchen.

In each household, one non-pregnant woman or adolescent girl, aged 10 to 49 years, is randomly selected to be interviewed about her diet and to have her height, weight, and mid-upper arm circumference (MUAC) measured. In addition, all pregnant women are

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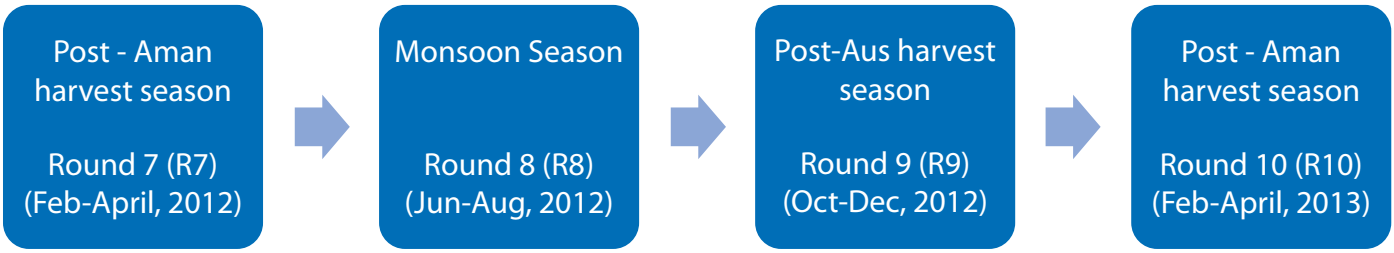
interviewed about their diet and the care they have received during their pregnancy, and their MUAC measurement is recorded. In addition, if the youngest child in the household is less than six months of age, that child's mother is asked about the care she received during her pregnancy with this child.

In each household with a child less than five years of age, child caregivers are asked about the care and feeding practices for the youngest child in the household. Caregivers also provide information about recent childhood illnesses, and, if the child is reported to have been ill, additional questions about care during illness are asked. The height, weight, and MUAC of all children under five years of age in the household are recorded.

***Figure 2: Time period of surveillance rounds included in this bulletin***




This bulletin presents selected results from the tenth round of surveillance which took place from February to April 2013. This bulletin also presents estimates from the seventh, eighth, and ninth rounds of data collection to show both seasonal variation and changes in indicators between 2012 and 2013 for the Post-Aman harvest season. The tenth round included 4,600 children less than five years of age and 9,158 women and adolescent girls aged 10 to 49 years in 9,024 households.

In this report, percentages given at the end of bars in each graph are for the overall prevalence estimates for that particular indicator (regardless of severity) and may differ from the sum of its sub-categories due to rounding. Adjusted Wald tests were used to determine the statistical significance of changes in indicators between surveillance rounds. In the graphs, rounds of data collection are indicated by the letter R and the number of the round of data collection (For example, Round 7 is indicated by R7). Additional details about the terms used in each graph can be found in the endnotes.

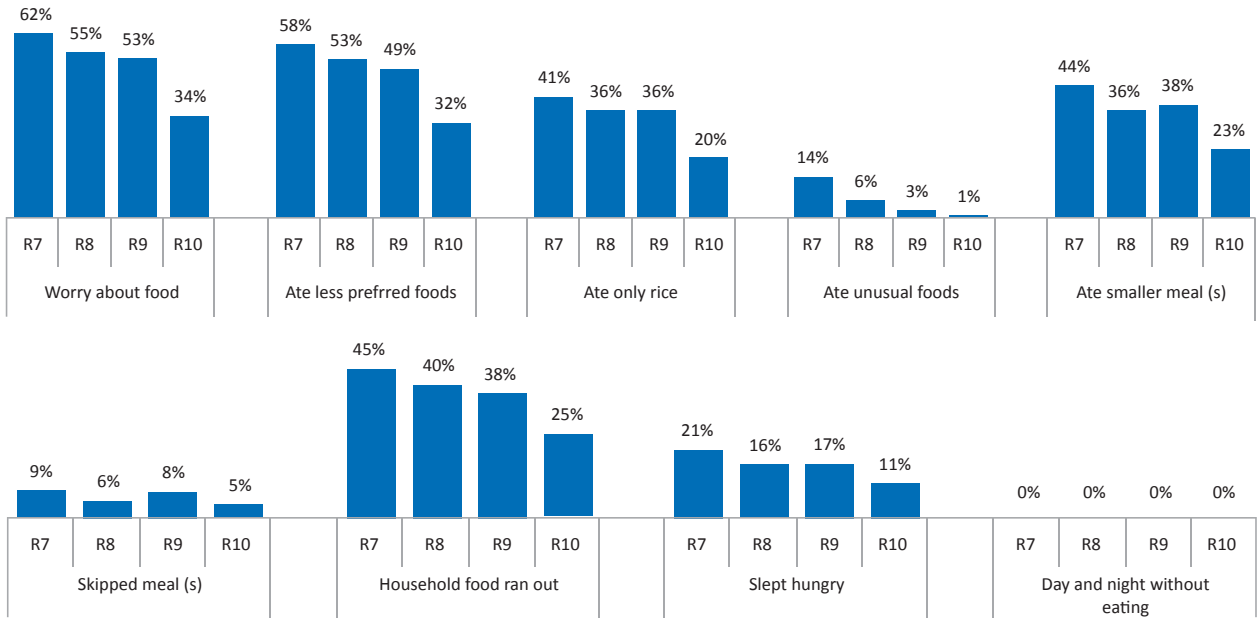
## Food Security

The proportion of households reporting individual and composite indicators of food insecurity declined sharply and significantly between Round 7 and Round 10, falling by over a third between Round 9 and Round 10. Food insecurity as measured by Household Food Insecurity Access Scale (HFIAS) and food deficit as measured by Food Deficit Scale (FDS) was the lowest during Round 10 (34% and 10%, respectively) than at any stage in the prior years of FSNSP (since 2010). Specifically, this level was markedly lower than the period October to December 2012 (Round 9) indicating a significant reduction in the proportion of food insecure households in Post-Aman harvest season (Round 10). In line with this finding the proportion of households with inadequate dietary diversity (consisting of households with poor, borderline, and acceptable low FCS values) decreased significantly in Round 10 (28%) compared to Round 9 (34%).

Among zones, by all measures, food insecurity was highest in Eastern hills (50%) followed by Northern chars (47%) and Coastal belt (43%). For most zones, food insecurity (HFIAS) and food deficit (FDS) were lower in Round 10 compared with Round 9. The highest prevalence of households with inadequate dietary diversity was in Northern chars and Northwest (47% and 42%, respectively) which may affect the health status of women and children of these regions.

## *Figure 3: Households experiencing food insecure conditions at least once in the month prior to the interview*

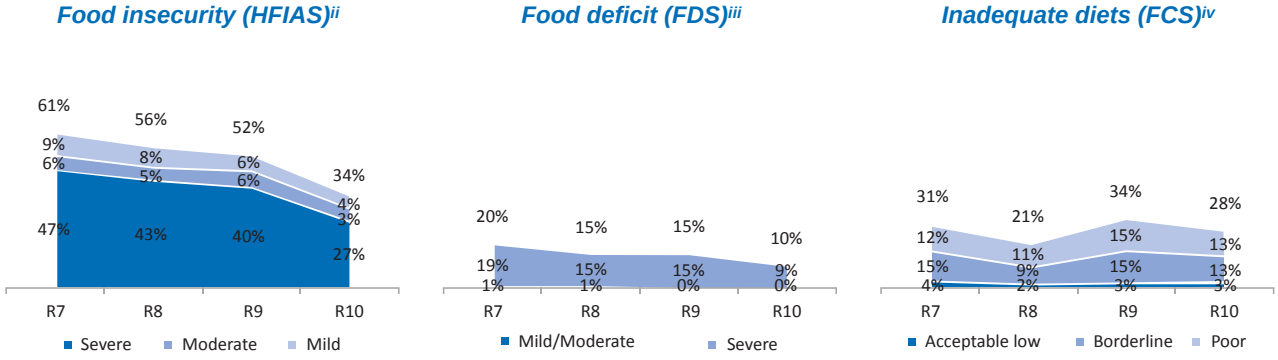
The proportion of households nationally in which the kitchen manager reported that the household had ever experienced the listed conditions related to food insecurity in the month prior to the interview (presented from least to most severe, according to HFIAS) by surveillance round.[i] These estimates are derived from self-reported perceptions of the food security situation (1).




Note: Responses to the indicators given in Figure 3 are grouped into a two scales utilizing internationally standardized methodology in Figure 4.

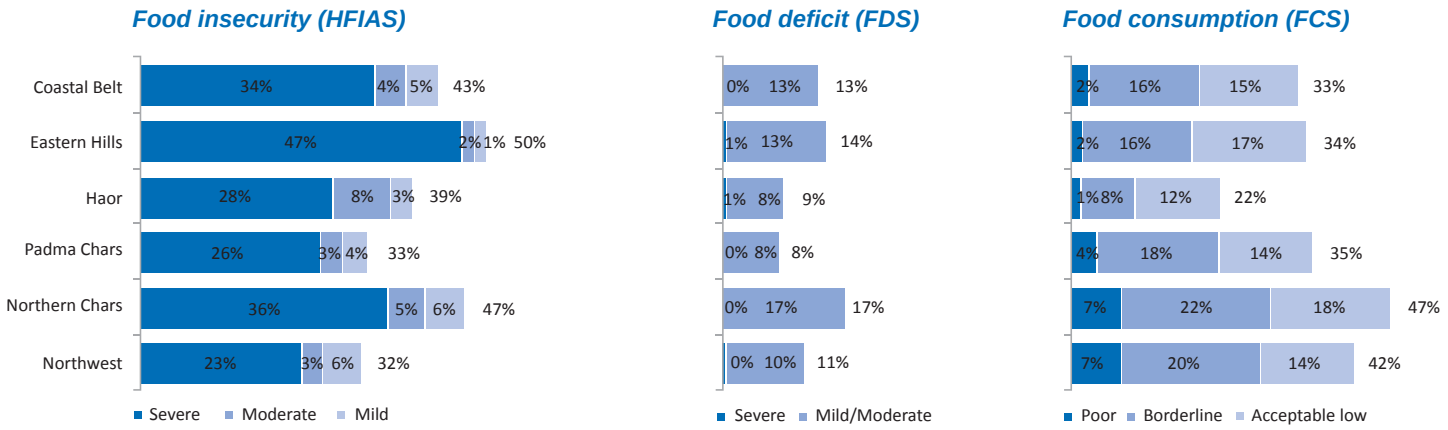
## *Figure 4: National prevalence of internationally standardized food security indicators by severity and round*

The proportion of households in Bangladesh which fit internationally standardized categorizes of food insecurity by surveillance round (1; 2; 3; 4).




## *Figure 5: Prevalence of internationally standardized food security indicators during Round 9 by surveillance zone*

The proportion of households which fit internationally standardized categorizes of food insecurity by surveillance zone during February to April 2013(1; 2; 3; 4).



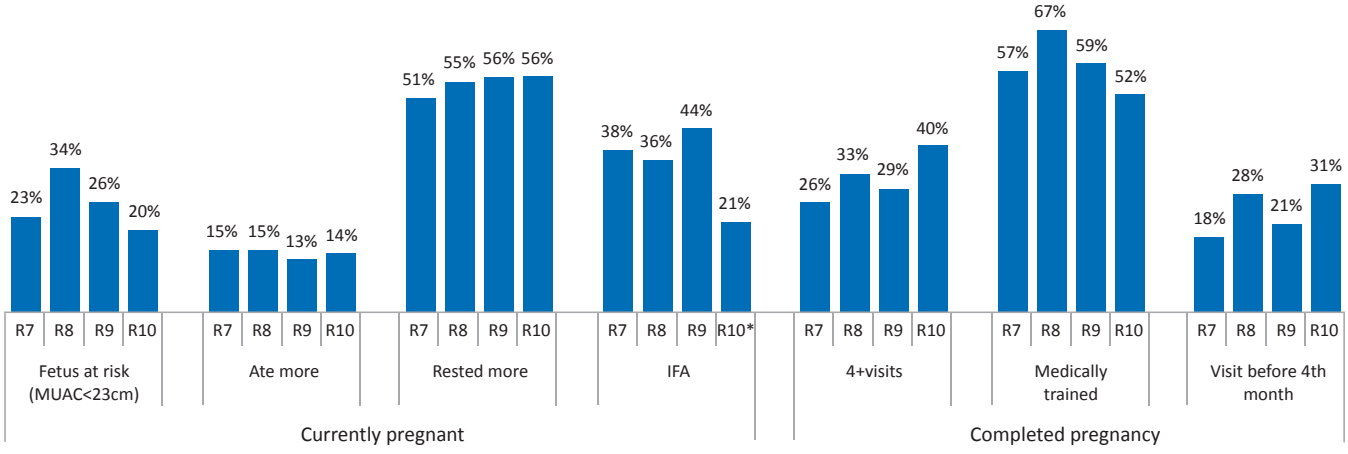
# Care and nutrition for pregnant women and children

The proportion of pregnant women whose fetus was at increased risk of growth retardation gradually decreased from Rounds 8 to 10 and it was lowest (20%) in Round 10. This change is in line with normal seasonal trends. The proportion of pregnant women who received iron folic acid (IFA) tablets decreased significantly in Round 10 (21%) compared to Round 9 (44%). The reason behind this decline was likely a change in the way the question was asked. In earlier rounds women were asked how often the consume IFA tablets usually, while in Round 10 they were asked the actual number of tablets consumed in the last 7 days. Adequate antenatal care (ANC) visits (more than four times and at least once before the 4th month of pregnancy) increased significantly between Rounds 9 and 10. None of the other indicators for care of pregnant women changed considerably between Rounds 7 and 10.

There was little change in infant and young child feeding indicators. The proportion of children who were suffering from fever decreased significantly in Round 10 compared to Round 9 and was also the lowest among last 4 rounds. The proportion children with diarrhea and who sought care for diarrhea increased slightly between Rounds 9 and 10. A higher proportion (77%) of children were treated with oral rehydration solution (ORS) and received proper feeding at home for diarrhea in Round 10 compared to Round 9. Underweight, wasting and acute MUAC z-score peaked during the monsoon season (middle of the year) in both 2011 and 2012 and gradually decreased from Rounds 8 to 10. The decrease in the proportion of underweight was significant in Round 10 compared to Round 9. Among zones, the prevalence of wasting was equally high in the Northwest and Coastal belt (10%) followed by the Eastern hills and Padma chars (9% each) but none of the differences were statistically significant.

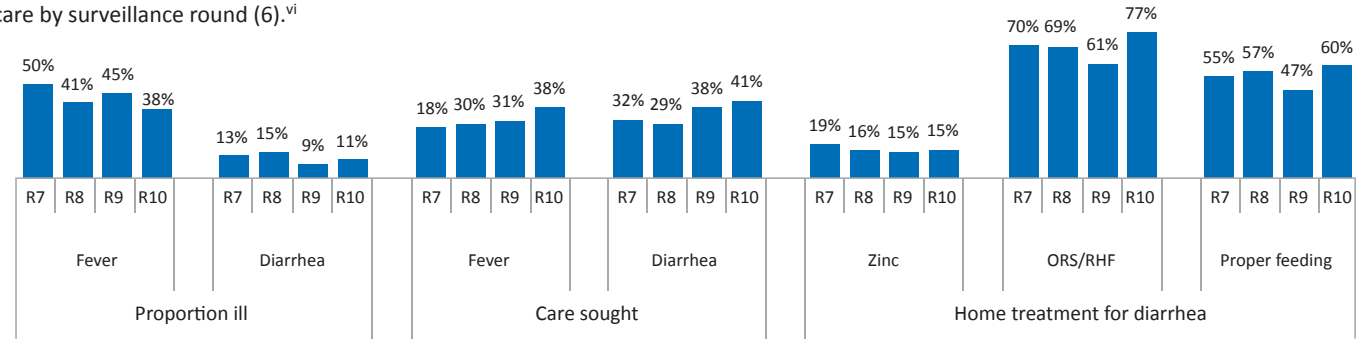
### *Figure 6: Care during pregnancy by round*

The proportion of women pregnant during interview or with recent deliveries in Bangladesh who received the listed standards of care during their pregnancy and who are malnourished (based on MUAC) by surveillance round (5; 6).[v] A woman included in the recently completed pregnancy estimates had a child less than 6 months of age at the time of the interview.



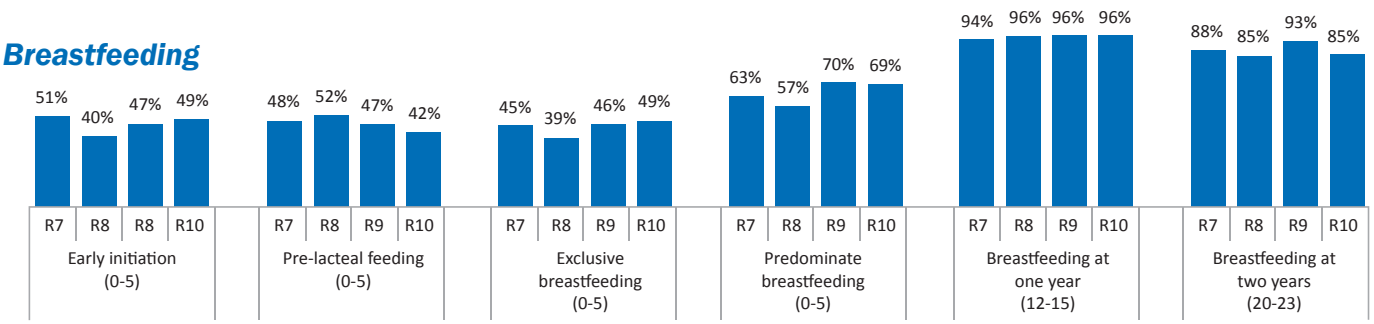

### *Figure 7: Child illness and care for sick children by round*

The proportion of children in Bangladesh who were sick with the respective illness and who were reported to receive the listed standards of care by surveillance round (6).[vi]



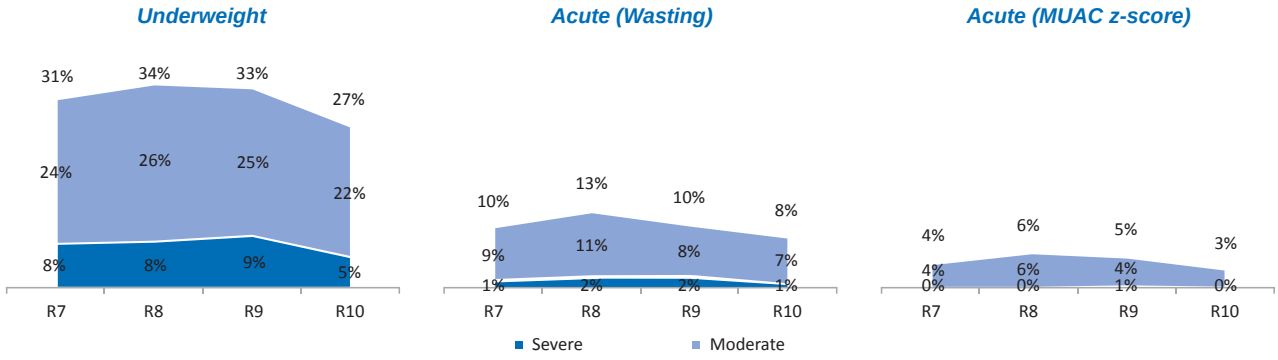
## *Figure 8: Infant and young child feeding practices by round*

The proportion of children fed in line with the listed practices nationally.[vii] The age group in completed months is given in parenthesis. These indicators of infant and young child feeding practices of children are estimated using methodology from the World Health Organization (7; 8).



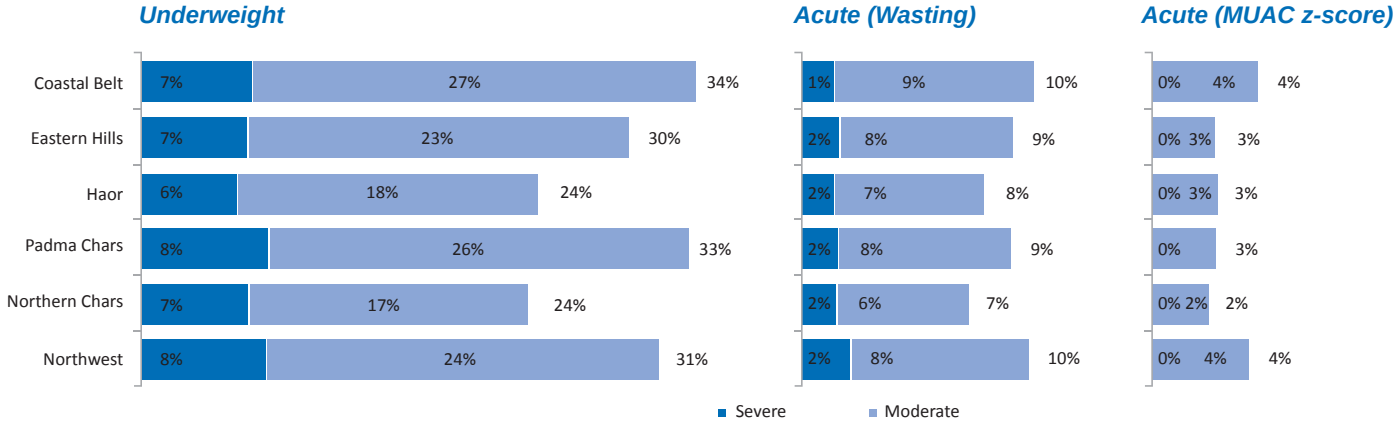

## *Figure 9: National prevalence of child under nutrition by severity and round*

The proportion of children under five years of age in Bangladesh who were wasted and underweight and had MUAC z-scores < -2 S.D. by surveillance round. The proportion of children 0 to 59 months of age who were classified as malnourished based on age, weight, and height measurements as assessed with reference to the World Health Organization's 2006 growth standards (9). The overall or total prevalence indicates global malnutrition of children.[viii]




## *Figure 10: Prevalence of child under nutrition during Round 10 by severity and zone*

Proportion of children under five years of age who were wasted and underweight and had acute MUAC z-scores by surveillance zone during February to April 2013. The proportion of children 0 to 59 months of age who were classified as malnourished based on age, weight, and height measurements as assessed with reference to the World Health Organization's 2006 growth standards (9).[ix]



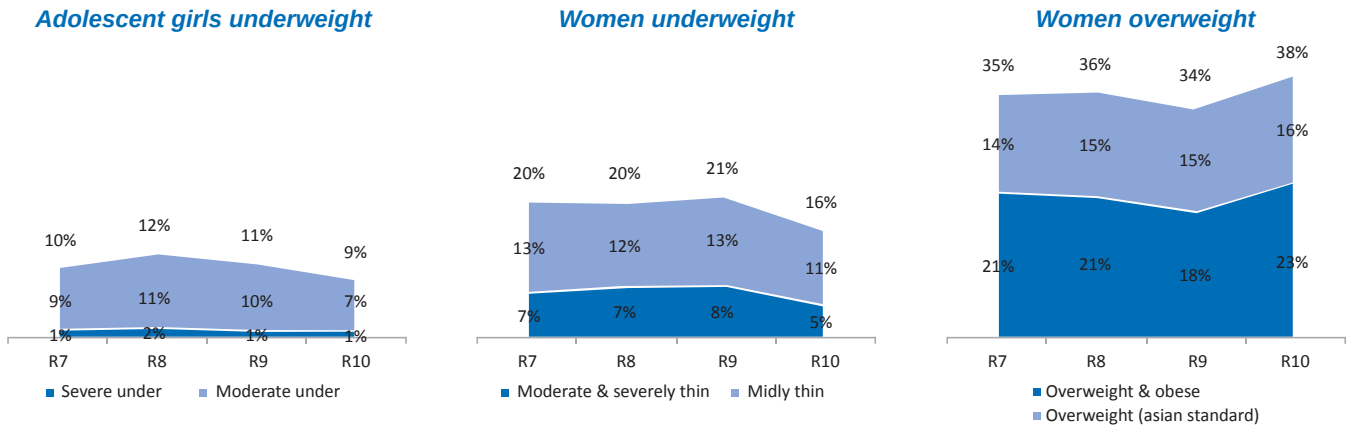
# Nutritional status of women and adolescent girls

There was notable change in the nutritional status of adolescent girls and women between Round 9 and Round 10. While there was only a slight variation in chronic energy deficiency (CED, BMI<18.5) among women from Rounds 7 to 9, the proportion of underweight women decreased significantly from 21% in Round 9 to 16% in Round 10. In contrast, the proportion of women overweight continued to increase during this period and peaked (38%) at Round 10.

The proportion of women underweight in the Eastern hills fell dramatically between Round 9 and Round 10 (18% and 9%, respectively). Among surveillance zones, the proportion of overweight women was the highest in the Padma chars (39%) which differs significantly than in the Northern chars and Haor regions (27% and 29%, respectively). This is the fourth round in a row (from Rounds 7-10) when the highest prevalence of chronic energy deficiency among women was found in the Haor and the highest prevalence of overweight women was found in the Padma chars. Twenty-five percent women in Haor region were chronically energy deficient. In contrast, the proportion of underweight among adolescent girls showed no significant difference between Round 9 and Round 10 except in the Padma chars and Northwest regions. An equally high prevalence of underweight was observed both in Rounds 9 and 10 (10%) among adolescent girls from the Coastal belt.

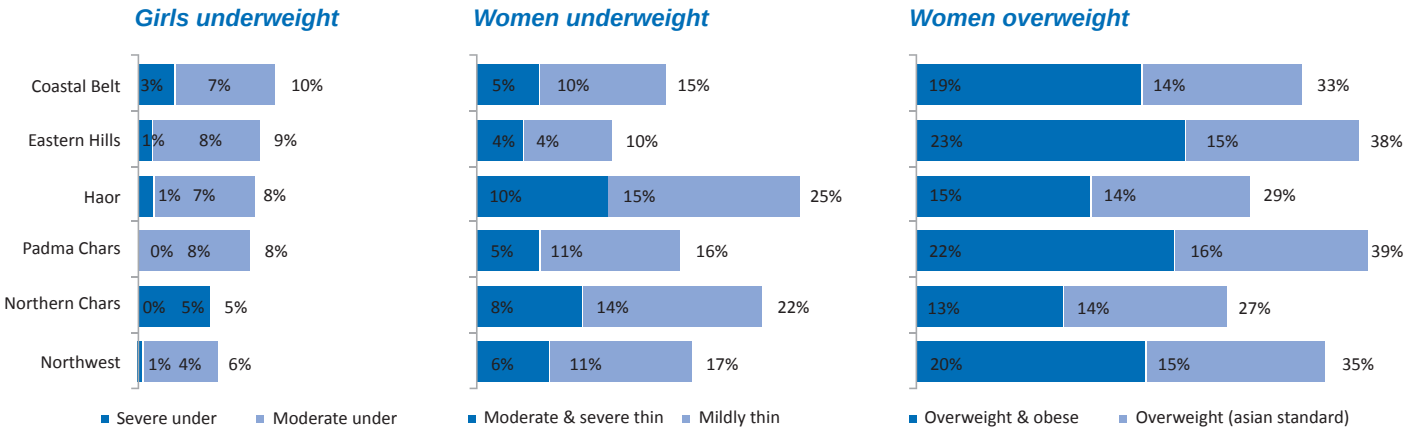
### *Figure 11: Nutritional status of women and adolescent girls*

The proportion of adolescent girls and women who fell into categories of nutritional status based on BMI (6; 10; 11). The overall prevalence indicates global underweight for adolescent girls underweight (BMI for age z-score<-2S.D.), chronic energy deficiency (CED) for women underweight (BMI<18.5), and overweight and obese by the Asian cutoff for women overweight (BMI>23) (6; 10; 11).[ix]




### *Figure 12: Nutritional status of women and adolescent girls during Round 10 by zone*

The proportion of adolescent girls and women who fell into categories of nutritional status based on BMI during February to April 2013 by surveillance zone (6; 10; 11).[ix]



[i] These indicators are ordered by severity as given in the Household Food Insecurity Access Scale (HFIAS) scale. Households and household members who practiced any of these behaviors for a reason other than difficulties obtaining food are not included (for example, skipping a meal due to illness).
***Worry about food:*** Proportion of kitchen managers who report worrying about obtaining food for their household in the past month
***Ate less preferred foods:*** Proportion of households in which any member had to eat food they felt was inferior, i.e. broken rice instead of whole rice
***Ate only rice:*** Proportion of households in which any member ate only rice or rice and spices for a meal
***Ate unusual foods:*** Proportion of households in which any member ate unusual or scavenged foods, i.e. water lily
***Ate smaller meals:*** Proportion of households in which any member ate a smaller meal than they felt they needed
***Skipped meals:*** Proportion of households in which any member skipped a meal
***Food ran out:*** Proportion of kitchen managers who report that any food stored in the household ran out for the day and there was no money to buy more
***Slept hungry:*** Proportion of households in which any member slept hungry at night, even if this individual did so after eating an inadequate meal
***Day and night without eating:*** Proportion of households in which any member was unable to eat for 24 hours

[ii] All nine indicators listed in Figure 3 are used in HFIAS. Based around the premise that some coping responses are more serious than others and indicate a household is more food insecure, HFIAS categorizes households into three degrees of food insecurity based on the most "severe" coping mechanism they have employed (1), and a household is categorized as food insecure if worry about providing food occurred more than twice in the month before the interview.

[iii] Only the three most severe indicators depicted in Figure 3 – household food stores running out, sleeping hungry, or going day and night without eating – are included in the Food Deficit Scale (FDS). FDS, identical to the internationally standardized indicator the Household Hunger Score, uses the reported frequency of experience of these three conditions to categorize households into categories of household food scarcity. A household is categorized as having a food deficit if any one of these three experiences occurred at least three times or if more than two of these conditions were experienced in the month before the interview.

[iv] FSNSP asks household kitchen managers about the frequency with which their household has eaten foods from eight standardized food groups in the week prior to the interview. These frequency scores are weighted in line with the Food Consumption Score (FCS) guidelines laid out by the World Food Program (3). Households are then grouped into food consumption categories using cut-offs designed for Bangladesh (4).

[v] The following indicators of care during pregnancy were asked to women who were pregnant at the time of interview.
**Nutritional status:** Based on MUAC: fetus at moderate risk – MUAC<23.0cm (5).
**Ate more:** Proportion of women who report eating more during their pregnancy than they did prior to their pregnancy
**Rested more:** Proportion of women who report resting more during their pregnancy than they did prior to their pregnancy
**Took IFA at least weekly:** During rounds 4 through 9, the woman was asked the number of tablets she usually takes in a week. Starting with Round 10, the woman was asked to state the exact number of tablets she had taken in the last seven days.
The following indicators of care during pregnancy were asked to women who gave birth in the six months prior to the interview (recently completed pregnancy)
**4+ visits:** Proportion of women who received at least four ANC visits from any provider
**Medically trained:** Proportion of women who obtained any ANC from a medically trained provider as defined by DHS (6)
**Visit before the fourth month:** Proportion of women who obtained their first ANC before their fourth month of pregnancy

[vi] The following indicators were estimated for children who were reported ill with the respective symptoms in the two weeks preceding the interview:
***Fever:*** Proportion of children 0 to 59 months of age whose caregiver reported that he/she had had fever
***Diarrhea:*** Proportion of children 0 to 59 months of age whose caregiver reported that he/she had had diarrhea
***Care sought:*** Proportion of children 0 to 59 months of age reported to have been sick with the listed illness who sought treatment from any provider except apharmacy or traditional healer
***Zinc:*** Proportion of children 6 to 59 months of age with a diarrheal episode who were reported to have received zinc during the illness
***ORS/RHF:*** Proportion of children 6 to 59 months of age with a diarrheal episode who were reported to have received oral rehydration solution (ORS) and/or recommended home fluids (RHF), such as sugar-salt-water, or fluid from special saline (rice) during the episode
***Adequate home care for diarrhea (proper feeding):*** Proportion of children 6 to 59 months of age with a diarrheal episode in who were reported to have received increased fluids and/or ORS and ate the same or more food during the episode

[vii] All indicators, except early initiation and pre-lacteal feeding are based on feeding practices the day before the interview (7; 8). Any cases where the respondent could not answer the question were excluded from the analysis.
***Early initiation:*** Proportion of children born in the last 24 months who were reported to have been put to the breast within one hour of birth.
***Pre-lacteal feeding:*** Proportion of children born in the last 24 months who were given anything other than breast milk in the first three days after delivery
***Exclusive breastfeeding:*** Proportion of infants 0-5 months of age who are fed only breast milk (vitamins and medicines are also permitted)
***Predominant breastfeeding:*** Proportion of infants 0 to 5 months of age who receive breast milk exclusively or breast milk and other non-milk based liquids (such as water, water-based drinks, fruit juice, and ritual fluids)
***Continued breastfeeding at 1 year:*** Proportion of children 12 to 15 months of age who are fed breast milk
***Continued breastfeeding at 2 years:*** Proportion of children 20 to 23 months of age who are fed breast milk
Introduction of solid, semi-solid or soft food: Proportion of infants 6 to 8 months of age who receive solid, semi-solid or soft foods the day before the interview
***Minimum dietary diversity:*** Proportion of children 6 to 23 months of age who receive foods from 4 or more food groups the day before the interview
***Minimum meal frequency:*** Proportion of children aged 6 to 23 months who receive solid or semi-solid foods the minimum number of times or more the day before the interview. Minimum is defined as: 2 times for breastfed infants 6 to 8 months; 3 times for breastfed children 9 to 23 months; and 4 times for non-breastfed children 6 to 23 months.
***Minimum acceptable diet:*** Proportion of children aged 6 to 23 months whose diet met both the minimum diversity and minimum frequency standards
***Iron rich foods:*** Proportion of children aged 6 to 23 months who ate an iron-rich food, an iron-fortified food, or an iron supplement day before the interview
***Bottle feeding:*** Proportion of children 0 to 23 months of age who are fed with a bottle the day before the interview

[viii] Children whose measurements (z-score) indicate that they are between negative two standard deviations (-2 SD) and negative three standard deviation (-3 SD) from the mean of the reference population are classified as moderately malnourished for any given measure. Children who are below -3 SD are classified as severely malnourished. All children whose z-score falls below -2 SD are classified as globally malnourished (9).
***Underweight:*** Proportion of children with low weight for their age
***Acute (wasting):*** Proportion of children with low weight for their height
***Acute (MUAC):*** Proportion of children with low MUAC for their age

[ix] The nutritional status of non-pregnant women who have not recently given birth (no child less than 2 months of age, in line with DHS guidelines) is ascertained using body mass index (BMI, ($BMI, weight_{kg}/height_{m^2}$) (6). For women, 19 to 49 years of age, nutritional status is calculated through the use of BMI cutoffs while for adolescents, 10 to 18 years of age, BMI-for-age z-scores are used (6; 10; 11).
***Girls underweight:*** Severe underweight – BMI z-score < -3 SD; Moderate underweight – BMI z-score greater than or equal to -3 SD but less than -2 SD
***Women underweight:*** Moderate and severe thin – BMI less than 17; Mildly thin – BMI greater than or equal to 17 but less than 18.5
***Women overweight:*** Overweight – BMI greater than 23 but less than 25; Overweight and obese – BMI greater than or equal to 25

## Highlights

- The proportion of households with food insecurity significantly decreased in first season of 2013 (Round 10).
- A high level (50%) of food insecurity persists in Eastern hills region despite overall significant reduction in Round 10.
- Breastfeeding and complementary feeding indicators did not change significantly between Rounds 9 and 10. This is fourth round in a row when no significant changes were detected.
- Prevalence of underweight, wasting and acute MUAC gradually decreased from Rounds 8 to 10 and it was lowest in round 10.
- From the last four Rounds (7-10), Haor had the highest prevalence of chronic energy deficiency (CED) among women and Padma chars had the highest proportion of overweight women.

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