



The Food Security and Nutrition Surveillance Project Round 4: February-May 2011

Preliminary Results

The Food Security and Nutrition Surveillance Project (FSNSP) provides up-to-date, seasonal information on the food and nutrition security situation in Bangladesh. This bulletin presents the preliminary results of the fourth round of surveillance which took place from the 12th of February to the 8th of May 2011 and covered 8,431 households. Preliminary results from the fourth round will be compared to the first round of FSNSP which was administered in the same season one year prior.¹

Between round three and round four of FSNSP, the sampling frame was revised so that the system could include all households in Bangladesh, provide estimates for six surveillance zones which are based on eight of the major agro

-ecological zones of Bangladesh, and provide national estimates in each subsequent round of surveillance. Round four is the initial surveillance round with the revised sampling frame.

The revised surveillance zones were developed based on the thirty agro-ecological zones listed and mapped by the Bangladesh Agricultural Research Council (BARC). The selection of zones was finalized through a consultative process that included staff from the Bangladesh Bureau of Statistics, Helen Keller International, the World Food Program, and BRAC University. Upazilas not included in these zones are sampled to enable national estimates to be determined, however, only estimates calculated for areas in surveillance zones and for the nation as a whole will be tracked from round to round.

The revised surveillance areas are depicted in Figure 1 and a brief description of each zone is given below (a list of the upazilas included in each

¹ Round one was administered to 10,980 households in all districts in the country except those in the Chittagong Hill Tracts from the 21st of January to 26th of April 2010. Because the sample in the first round was limited to households with children under the age of five, comparative results from the fourth round only includes households with a child under the age of five.

surveillance zone is at the end of this bulletin.

Active Floodplain – Lower (AL): This zone consists of all upazilas in which any land area is in the “Active Ganges Floodplain” agro-ecological zone – excluding the statistical metropolitan area (SMA) of Rajshahi. These 38 upazilas bordering the slower moving Padma and lower Brahmaputra Rivers contain active floodplains including char areas that are highly erosion prone and offer only seasonal livelihoods.

Active Floodplain – Upper (AU): This zone consists of all upazilas in which any land is in the “Active Tista Floodplain” or “Active Brahmanputra-Jamuna Floodplain” agro-ecological zones, the two northernmost major rivers of Bangladesh. These 47 upazilas bordering the fast-moving Tista and upper Brahmaputra Rivers contain char areas that are highly erosion prone and offer only seasonal livelihoods.

Coastal Belt (CB): This zone consists of the 62 upazilas in which at least 33% of the land area is in the “Ganges Tidal Floodplain” or “Young Meghna Estuarine Floodplain” agro-ecological zones – excluding Khulna SMA. These are the two marine areas are highly prone to sudden natural disasters such as cyclones and tidal surges.

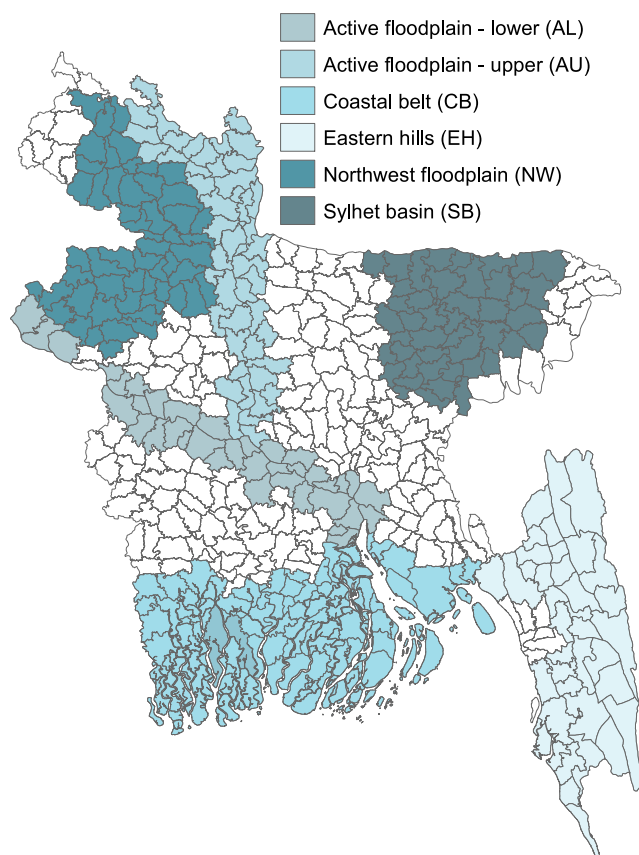
Eastern Hills (EH): This zone consists of the 38 upazilas in Chittagong division in which at least 33% of the land area is in the “Northern and Eastern Hills” agroecological zone – excluding Chittagong SMA. This area is hilly, unlike the majority of Bangladesh, and contains a greater proportion of minority ethnic groups and households which lack legal access to cultivable land.

Northwest floodplain and adjacent areas (NW): This zone includes 54 upazilas: all upazilas in which any percentage of the land area is in the “Tista Meander Floodplain” agro-ecological zone along with 13 additional upazilas that were immediately adjacent and listed as food insecure in the WFP/BBS Food Security Atlas.

Sylhet Basin and adjacent areas (SB): This zone consists of all upazilas in which any land area is in the “Sylhet Basin” agro-ecological zone as well as 14 additional upazilas that were immediately adjacent and listed as food insecure in the WFP/BBS Food Security Atlas. These 35 upazilas of the Sylhet basin / Haor area have dramatic seasonal

changes in standing water levels. Rainfall in this area cuts off communities from access to income earning opportunities and health care.

Figure 1: FSNSP surveillance zones



In this bulletin, the results are presented as bar graphs in which the zones will be referred to by the two letter acronym included in parenthesis in the descriptions above. Percentages given within the bars of each graph are for the overall prevalence estimates for that particular indicator (regardless of severity), and the error bars indicate the corresponding 95% confidence interval.

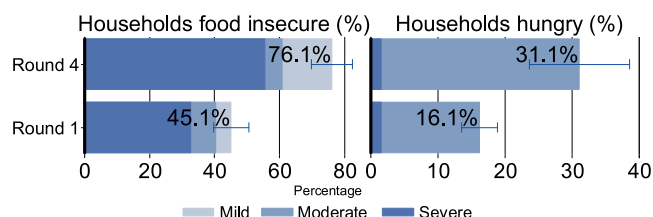
Food Security in Bangladesh

Round four results indicate that there has been a sharp increase in food insecurity in Bangladesh since the first half of 2010. Estimates from the first round of FSNSP indicated that a little less than half (45%) of the population was food insecure based on the Household Food Insecurity Access Scale (HFIAS). In contrast the fourth round of surveillance found that over 75% of households with children under the age of five were food insecure, an increase of 69%.²

² Results presented here only include households with a child under the age of five. From round four 4,148 households fit this criteria.

In addition, reanalyzing the first round data using the Households Hunger Scale indicates a similar trend;³ during the first round of surveillance only 16% of households exhibited behaviors that indicated hunger while during the fourth round the proportion nearly doubled to 31%. A comparison of these two data points is shown in Figure 2 below.

Figure 2: Food security indicators by surveillance round⁴



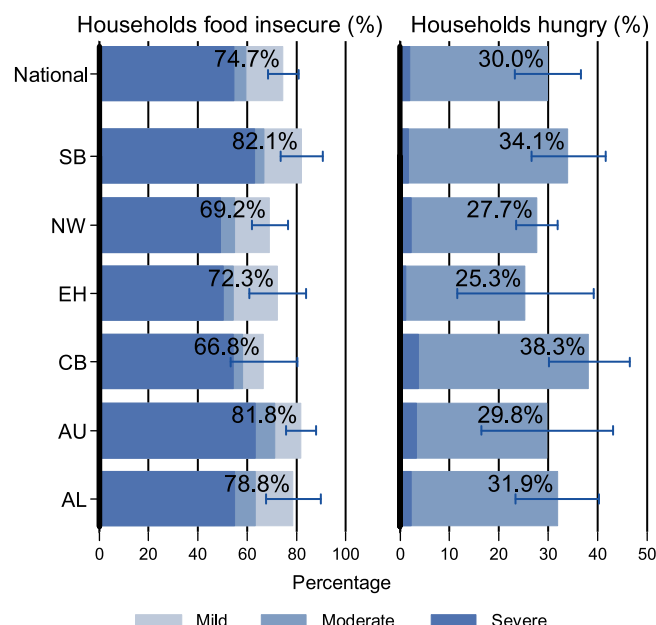
Pairing the two indicators together can give a picture of both the breadth and depth of food insecurity. Between the first quarter of 2010 and 2011 the prevalence of food security increased (as illustrated by HFIAS) and the proportion of the household which were food insecure and also hungry increased (as illustrated by HHS) from 36% to 41%, indicating an increase in both overall prevalence for food insecurity and the depth of food insecurity for those food insecure.

Figure 3 presents the fourth round results for all households in Bangladesh, not just those with children under the age of five, by FSNSP surveillance zone. During round four the rates of food insecurity and households hunger are roughly equivalent between households with children and households in general (with children 76% & 31%; in general 75% & 30% respectively). There is limited variation in food security and household hunger across surveillance zones; both indicators are high in all zones as well as nationally.

Estimates of food insecurity are highest in both active floodplains as well as in the Sylhet basin. Notably, the Northwest floodplain has significantly less food insecurity than the Upper Active floodplain in spite the fact that the two zones are geographically adjacent. This difference is no doubt at least partially attributable to the aman rice harvest that occurred shortly before round four which is the most important yearly crop for most of the Northwest floodplain.

Pairing the indicators together can give a slightly different picture of the breadth and depth of food insecurity in these areas. The Northwest floodplain has greater food security in the post aman season than other areas; In addition it has one of the lowest estimates of household hunger and the lowest estimate of household food insecurity. In contrast, while the Coastal belt has a below average estimate of food insecurity those who are food insecure suffer from household hunger in a higher proportion than households in other zones. Even more severe is the situation in the Sylhet basin where both a large proportion of the population suffers from food insecurity and household hunger.

Figure 3: Food security results for round 4 by zone⁵



A possible reason for the large increase in the number of food insecure households between this year and last is the rapid increase in food prices that occurred during mid/late 2010 and early 2011. Figure 4 illustrates both the change in the price of an average person's daily diet between early 2010 and early 2011 and the variation between surveillance zone.⁶ Over the country as a whole, the average cost of food increased 19% in the past year.

³ The household Hunger Scale was developed by FANTA-2 as a tool to measure household food deprivation, allowing for valid comparisons across cultures.

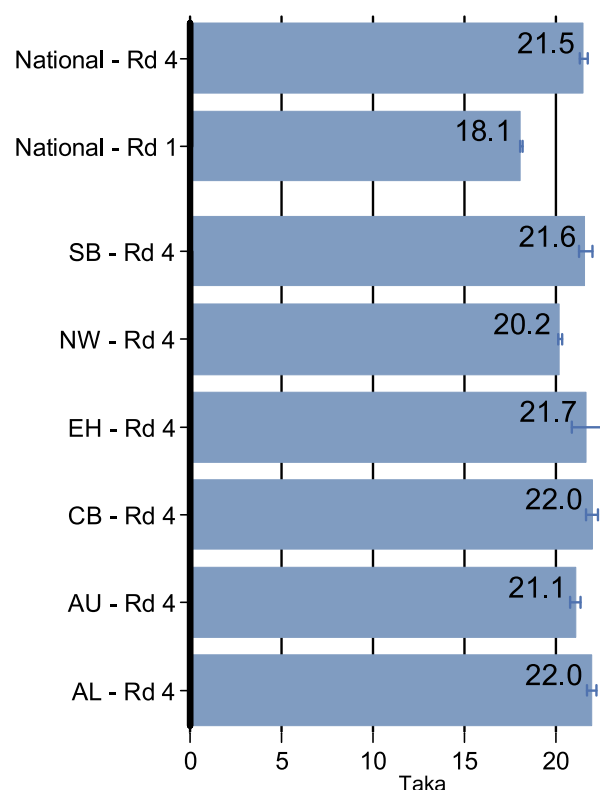
⁴ Food insecurity measured by HFIAS. Household Hunger measured by HHS. Estimates only include households with children.

⁵ Food insecurity measured by HFIAS. Household Hunger measured by HHS. Estimates include both households with and without children.

⁶ FSNSP records the prices of common food commodities in every community it visits. For the measure graphed above, the cost of the average daily per capita amount of each item (in grams, as in the HIES report 2005) was added together. The measure of food cost graphed

Overall, food costs appear to be the lowest in the Northwest and the Upper Active floodplain, probably due to proximity to areas of rice production. These are the only two areas where food cost estimates are lower than the country as a whole.

Figure 4: Average food costs by round and zone



Nutritional status of women

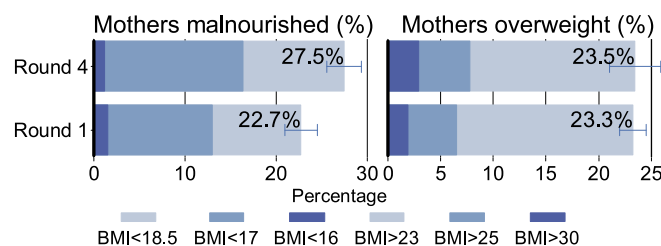
Round four results indicate that there has been a small but statistically significant increase in the proportion of mothers who are mildly and moderately malnourished in the past year. First round BMI results indicated that 23% of non-pregnant mothers 15 to 49 years of age who had not delivered a living child in the past two months had a BMI of less than 18.5, indicating that they are chronically energy deficient (CED). During round four this estimate increased to 28%.⁷

Figure 5 also illustrated that there was no change in the overall prevalence of mothers who were at risk of overweight, overweight, and obese however the proportion of mothers who were overweight and obese fell slightly from 16% in round 1 to 13% in round 4. The observed increase maternal CED and decrease in the severity of maternal overweight is no doubt at least partially attributable to the increase in food security in households.

above only contains information on major commodities: beef, egg, rice, atta, potato, dal, and oil.

⁷ Comparison results represented here only include mothers of a living child under the age of five. In round four, 3,412 mothers were able to be included in the analysis.

Figure 5: Maternal BMI status by surveillance round⁸



The fourth round of surveillance measured the BMI from one randomly chosen woman, aged 10 to 49 years, from each household visited. This modification to selection was made to enable the analysis of the nutritional status of women, and not limit analysis to the nutritional status of mothers.

Figure 6: Woman's BMI status for round 4 by zone

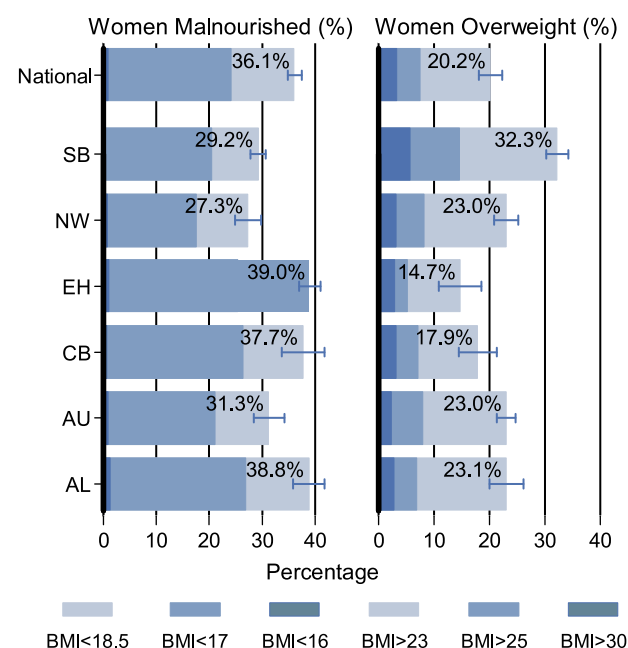


Figure 6 presents information about the nutritional status of women 15 to 49 years of age disaggregated by surveillance zone. National level estimates indicate that over 35% of women are classified as chronically energy deficient (CED) and slightly over 20% of women are above the Asian cut-off for risk of overweight (BMI > 23). A greater percentage of women are CED in the Eastern hills, Coastal belt, and Lower active floodplain than in the nation as a whole. Adult female under nutrition is lowest the Northwest. The proportion of overweight women in the Sylhet basin surveillance zone is much larger than

⁸ Only women with living children under the age of 5 years are included.

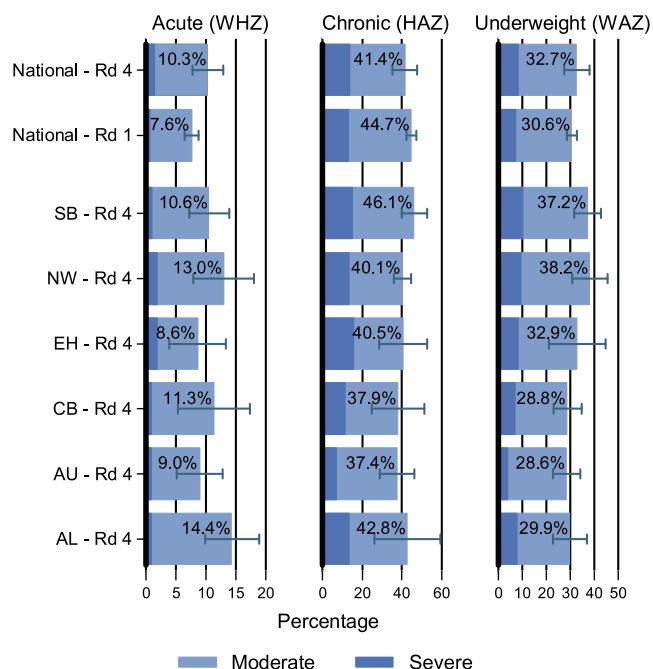
that found in any other zone. Conversely the proportion of overweight women in the Eastern hills and Coastal belt is much lower than the average for Bangladesh.

Nutritional status of children

Unlike the prevalence of maternal malnutrition, the prevalence of childhood malnutrition did not change greatly between the post aman harvest periods of 2010 to 2011. The prevalence of global acute child malnutrition as measured using weight for height z-scores has risen slightly, from 8% to 10%. In addition there was a slight increase in the percentage of children who are underweight for their age; this indicator rose from 31% in early 2010 to 33% in early 2011. The prevalence of global chronic child malnutrition as measured using height for age z-scores has decreased slightly from 45% to 41%.

From zone to zone there is limited variation in estimates of all indicators of childhood malnutrition. Acute malnutrition is highest in the Lower active floodplain and the Northwest and lowest in the Eastern hills and Upper active floodplain, while chronic malnutrition is greatest in the Sylhet basin, and child underweight is greatest in the Northwest and in the Sylhet basin.

Figure 7: Childhood malnutrition by round and zone



Discussion

Food prices and levels of household food insecurity between the first quarter of 2010 and the first quarter of 2011 have increased dramatically. While the immediate impact of these increases on the growth and weight outcomes of women and children in Bangladesh has been limited, the long and medium term effects of these increased levels of food insecurity are yet to be determined. Future analysis of multiple rounds of surveillance will be a vital tool for ascertaining how food insecurity in one season impacts child and women's nutrition status in the next season.

The upazila included in each agro-ecological zone are listed below organized by district. All other upazila are sampled by division.

Active Floodplain – Lower : Chandpur (Chandpur Sadar, Matlab); Chapai Nawabganj (Nawabganj Sadar, Shibganj); Dhaka (Dohar, Nawabganj); Faridpur (Char Bhadrasan, Faridpur Sadar, Nagarkanda, Sadarpur); Kushtia (Bheramara, Daulatpur, Khoksa, Kumarkhali, Kushtia Sadar, Mirpur); Madaripur (Shib Char); Manikgonj (Harirampur); Munshigonj (Lohajang, Munshigonj Sadar, Sreenagar, Tongibari); Natore (Lalpur); Pabna (Ishwardi, Pabna, Sujanagar); Rajbari (Baliakandi, Goalandaghat, Pangsha, Rajbari Sadar); Rajshahi (Bagha, Charchat, Godagari); Shariatpur (Bhedarganj, Damudya, Gosairhat, Naria, Zanjira)

Active Floodplain – Upper : Bogra (Dhunat, Sariakandi, Sonatola); Gaibandha (Fulchari, Gaibandha Sadar, Saghatta, Sundarganj); Jamalpur (Bakshiganj, Dewanganj, Islampur, Madarganj, Melandaha, Sarishabari); Kurigram (Bhurungamari, Char Rajibpur, Chilmari, Fulbari, Kurigram Sadar, Nageshwari, Rajarhat, Raumari, Ulipur); Lalmonirhat (Aditmari, Hatibandha, Kaliganj, Lalmonirhat Sadar, Patgram); Manikgonj (Daulatpur, Shibhalaya); Nilphamari (Dimla, Jaldhaka, Kishoreganj); Pabna (Bera); Rangpur (Gangachara, Kaunia, Pirgachha); Sirajganj (Belkuchi, Chauhali, Kazipur, Shahjadpur, Sirajganj Sadar); Tangail (Bhuapur, Delduar, Gopalpur, Kalihati, Nagarpur, Tangail Sadar)

Coastal Belt : Bagerhat (Bagerhat Sadar, Kachua, Mongla, Morrelganj, Rampal, Sarankhola); Barguna (Amtali, Bamna, Barguna Sadar, Betagi, Patharghata); Barisal (Babuganj, Bakerganj, Banaripara, Barisal Sadar, Hizla, Mehendiganj, Muladi); Bhola (Bhola Sadar, Burhanuddin, Char Fasson, Daulatkhan, Lalmohan, Manpura, Tazumuddin); Chandpur (Haimchar); Chittagong (Sandwip); Feni (Sonagazi); Jhalakhati (Jhalokati Sadar, Kanthalia); Jhalakhati (Nalchity, Rajapur); Khulna (Batiaghata, Dacope, Dumuria, Koyra, Paikgachha); Lakshmipur (Lakshmipur Sd, Ramgati, Roypur); Noakhali (Companiganj, Hatiya, Noakhali Sadar); Patuakhali (Bauphal, Dashmina, Dumki, Galachipa, Kalapara, Mirzaganj, Patuakhali Sadar); Pirojpur (Bhandaria, Kawkhali, Mathbaria, Nazirpur, Nesarabad, Pirojpur Sadar); Satkhira (Assasuni, Debhata, Kaliganj, Satkhira Sadar, Shyamnagar, Tala)

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Eastern Hills : Bandarban (Alikadam, Bandarban Sadar, Lama, Naikhongchhar, Rowangchhari, Ruma, Thanchi); Chittagong (Banshkhali, Chandanaish, Fatikchhari, Lohagara, Mirsharai, Rangunia, Satkania); Cox's Bazar (Chakaria, Cox's Bazar Sadar, Maheshkhali, Ramu, Teknaf, Ukhia); Khagrachhari (Dighinala, Khagrachhari, Lakshmichhari, Mahalchhari, Manikchhari, Matiranga, Panchhari, Ramgarh); Rangamati (Baghaichhari, Barkal, Belaichhari, Juraichhari, Kaptai, Kawkhali, Langadu, Naniarchar, Rajasthali, Rangamati Sadar)

Northwest Floodplain : Bogra (Adamdighi, Bogra Sadar, Dhupchanchia, Gabtali, Kahaloo, Shibganj); Chapai Nawabgonj (Bholahat, Gomastapur, Nachole); Dinajpur (Biral, Birampur, Birganj, Chirirbandar, Dinajpur Sadar, Fulbari, Ghoraghat, Hakimpur, Kaharole, Khansama, Nowabganj, Parbatipur); Gaibandha (Gobindaganj, Palashbari, Sadullapur); Joypurhat (Akkelpur, Joypurhat Sadar, Kalai, Khetlal, Panchbibi); Naogaon (Atrai, Badalgachhi, Dhamoirhat, Mahadebpur, Manda, Naogaon Sadar, Niamatpur, Patnitala, Porsha, Raninagar, Sapahar); Nilphamari (Domar, Nilphamari, Saidpur); Panchagarh (Boda, Debiganj); Rajshahi (Baghmara, Durgapur, Mohanpur, Tanore); Rangpur (Badarganj, Mitha Pukur, Pirganj, Rangpur Sadar, Taraganj)

Sylhet Basin : Brahmanbaria (Bijoynagar, Nasirna gar, Sarail); Habiganj (Ajmiriganj, Bahubal, Baniachong, Habiganj, Lakhai, Madhabpur, Nabiganj); Kishoreganj (Austagram, Bajitpur, Itna, Karimganj, Katiadi, Kishoreganj Sadar, Kuliar Char, Mithamain, Nikli, Tarail); Maulvibazar (Maulvibazar Sad, Rajnagar); Netrokona (Atpara, Barhatta, Durgapur, Kalmakanda, Kendua, Khaliajuri, Madan, Mohanganj); Sunamganj (Bishwambarpur, Chhatak, Derai, Dharmapasha, Dwarabazar, Jagannathpur, Jamalganj, Sulla, Sunamganj Sadar, Tahirpur); Sylhet (Balaganj, Bishwanath, Companiganj, Gowainghat, Sylhet Sadar)

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