



A Follow Up Rapid Food Security Assessment in Satkhira in the Context of August 2011 Flood and Water Logging

December
2011

The assessment was jointly conducted by the World Food Programme (WFP), Food and Agricultural Organization (FAO) and Shushilan



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1. Context of the Assessment

Heavy rainfall during end of July and early August 2011 caused severe localized flooding in southern districts of Bangladesh namely Satkhira, Jessore, Khulna and Cox's Bazar. In some areas flood water receded, however some upazilas of Satkhira and Jessore remained under water, a situation referred to as prolonged water logging. This caused displacement of the affected population, disruption of livelihoods, and damage of agricultural crops as well as houses. Following this shock the World Food Programme (WFP), the Food and Agricultural Organization (FAO) and Shushilan, a Satkhira based local NGO, conducted a rapid Emergency Food Security Assessment (EFSA) in August 2011. The findings of the assessment revealed a serious situation in terms of displacement, livelihoods, food consumption and damage of crop and household assets. The assessment estimated that approximately 65,000 of the worst affected and extreme poor households were in dire need of assistance. Food was raised as the prime and immediate need of the affected population.

The Government, WFP and International and National non-government organizations (NGOs) responded to the crisis with an array of support. By 25 August 2011 an estimated 64,000 households had been assisted by WFP and NGOs, mostly with food and non-food items (NFIs). In real terms the number of households assisted may be less, as some have received both food and NFI support. WFP is continuing its assistance to 30,000 affected and poor households with a food basket constituting of rice, pulses, oil and wheat soya blend (WSB+).

The August 2011 assessment reports indicated that the receding of floodwaters in Satkhira would be very slow and the inundation would persist until November 2011. The prolonged water logging is due to silted river beds, obstruction of runoff to the adjoining rivers and sea caused by shrimp farms and irrigation dams/barrages, and tidal effects. During the August 2011 assessment, the need for another follow up assessment to check the speed of recovery sometime in November/December 2011 was also flagged. In September 2011, WFP's Vulnerability Analysis and Mapping (VAM) unit made a rapid tour in the Tala Union of Satkhira and observed that the level of inundation was still severe. This was particularly apparent in the crop fields where it was evident that prolonged water levels were going to lead to failure in Aman rice crop production and that the upcoming Boro rice plantation might be affected. The severe effect on the agricultural sector has implications on the livelihoods and food security of the affected population. Continued water logging in many parts of Satkhira district has justified the need for a follow up assessment.

2. Objectives

The major objectives of this assessment are to i) analyse the current agriculture, livelihood and food security situation, ii) compare the situation with the peak flood scenario of August 2011 and iii) indicate future implications of the shock on agriculture, livelihood, food security and nutrition. Based on the situation analysis the assessment also aims to make recommendations for viable short- to medium-term as well as long-term recovery measures.

3. Methodology

The finalization of the draft questionnaire and enumerators training took place from 28 to 30 November 2011. Field level data collection was carried out from 3 till 5 December 2011. Since this was a follow up assessment the information collection was conducted in the same five worst affected upazilas that were purposively sampled in the August 2011 assessment. Like the previous assessment the current findings are also based on Focus Group Discussions (FGD), key informant interviews and market surveys. Twenty five FGDs were conducted with vulnerable groups, namely marginal farmers¹ and day labourers, female groups and local representatives such as Union Parishad/UP chairmen, UP members and various other influential community members. Five market surveys were conducted in large and small markets. Several Key Informant Interviews were conducted in the 5 upazilas with three sets of informants; i) Agriculture and Livestock & Fisheries Officers, ii) Upazila Nirbahi Officers (UNO) and Project Implementation Officers (PIO) and iii) local and international NGOs operational in the sampled areas (Annex 1. detailed survey plan).

A perception based scoring exercise was also conducted with local and international NGOs and the UNOs and PIOs. Unions under five affected upazilas in Satkhira and Keshabpur Upazila from Jessore district were included in this exercise. A scoring scale of 1 to 5 was used to rank the unions, where 1 represents least-affected and 5 represents worst-affected. The rankings were calculated on the basis of six indicators, a) damage of crops; b) damage of houses; c) displacement and recovery rate; d) current inundation severity; e) Boro rice production prospect; and f) poverty. Based on three of six indicators a weighted composite index was produced inclusive of i) crop damage; ii) current inundation severity; and iii) poverty. Due to a high degree of correlation (Pearson's correlation > 8, sig. 0.00) between indicators including crop damage and house damage, and between inundation severity, Boro production prospects, and displacement, the three indicators with a correlation greater than 7 were finally selected for the weighted composite index. Crop damage was given the highest weight followed by current inundation and poverty. The weighted composite scores by unions were mapped to show the worst affected to least affected unions. The field staff of Shushilan conducted the FGDs and market surveys, while WFP and FAO staff conducted the key informant interviews and the perception scoring.

Besides the field data, several sources of secondary information from Satkhira district were also consulted to assess the scenario, including the WFP's baseline survey conducted in August 2011, the Nutritional Surveillance based on Mid-Upper Arm Circumference (MUAC) by Action Contre La Faim (ACF) from September to November 2011 and draft results from the Nutrition Survey conducted by UNICEF & Helen Keller International (HKI) over September and October 2011.

¹ Marginal farmers are defined as those with access to between 0.02 and 0.2 ha of land, which is below the size needed for adequate subsistence farming

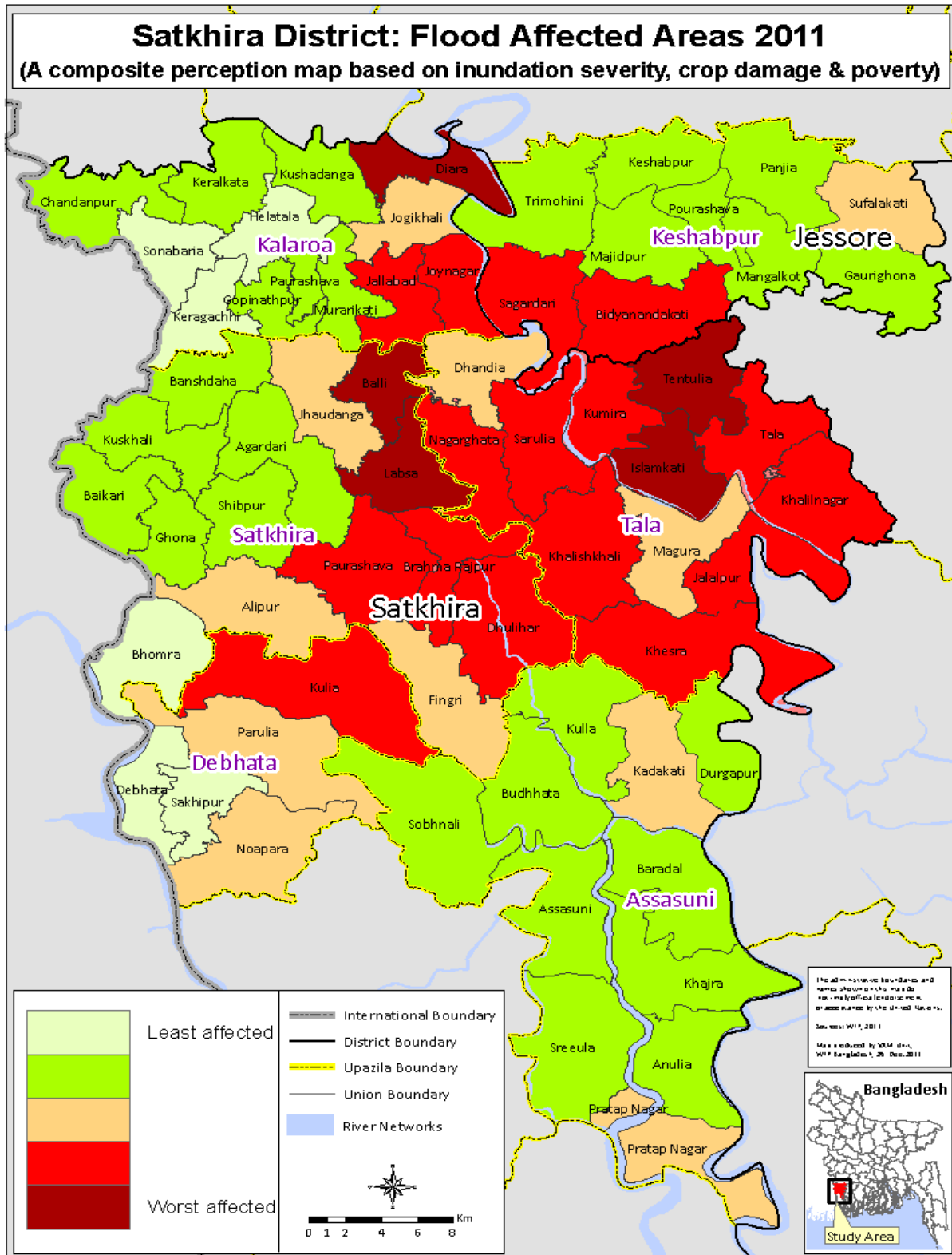
4. Inundation and Displacement

The August 2011 assessment of the flood affected population of Satkhira reported that the floodwater was largely expected to have receded by December 2011. However, during the December 2011 assessment it was found that over 40 to 50 percent of the unions in Satkhira Sadar and Tala upazila and a few unions in Kalaroa upazila and Keshabpur upazila from Jessore were still experiencing inundation. Significant improvement in water logging has been observed in Assasuni and Debhata. In the inundated unions 20 percent of the homestead lands and 30 to 60 percent of the crop lands are still under water (Annex 2. Perception map on inundation). People interviewed indicated that it may take a further 2 to 3 months for the water to recede fully. There are households still displaced and around 10-20 percent of the total displaced households are still living on the roadsides. Of the proportion of the displaced population that has returned, many of them are staying with their relatives or neighbours as their houses are completely damaged.

4.1 Geographic location of worst affected Unions

The composite perception map (Figure 1) shows the worst affected unions in Satkhira district (for details see Section 3: Methodology).

Figure 1: Composite perception map on most affected unions in Satkhira



5. Agriculture

The majority of the upazilas in Satkhira district produce a variety of crops throughout the year. The water logging which followed the August 2011 flood has damaged a large proportion of standing crops including transplanted Aman rice and its seed beds, transplanted Aus rice (locally known as Block 2 rice), chilli, betel leaf, vegetable, turmeric and other minor crops. This has disrupted the local level crop production and crop supply from September to December 2011. The coming months of January and February are the potential months for plantation of Boro rice, pulses like khesari and mung bean, potato, and a large variety of winter vegetables. However, a significant proportion of crop lands in the flood affected areas are still under water and therefore the physical capacity, and also the financial capacity, of marginal farmers to purchase seed and agricultural inputs to prepare for the next season has been eroded.

5.1. Damage of crop, livestock and fisheries

The full extent of damage to crops is yet to be officially established, however, reports from the Department's of Agricultural Extension, Livestock and Fisheries in Satkhira district indicate extensive damages in Tala and Satkhira Sadar upazilas. The number of farmers affected is also high in these two upazilas, with 119,192 farmers affected in Satkhira alone.

Table 1: Report on Crop Damage, August-September 2011, Satkhira District

Name of Upazila	Name and area of crops completely damaged (ha)						Total (ha)	No. Affected Farmers
	Aus	T. Aman Seed bed	T. Aman	Betel leaves	Turmeric	Vegetables		
Sadar	1200	0	3200	0	0	0	4400	29352
Kolaroa	265	21	2826	0	0	0	3112	24020
Tala	1775	552	3060	40	185	848	6460	54100
Debhata	93	40	1185	0	0	70	1388	8360
Assasuni	45	295	1465	0	0	0	1805	3360
Sub Total	3,378	908	11,736	40	185	918	17,165	119,192

Source: Upazila Agriculture Extension Office, DAE

Table 2: Damage to Fisheries, December 2011

Name of Upazila	Affected area			Flooded quantity		No. of Affected farmers
	No. of Affected Pond/Gher / Dighi	Qty. of flooded fish(mt)	Qty. of flooded shrimp (mt)	Qty. of flooded fiingerlings (lakh)		
Sadar	10460	933	545	100	9002	
Kolaroa	4392	1350	111	30	4860	
Tala	11180	8153	1019	95	11180	
Assasuni	937	319	198	-	2195	
Debhata	1891	557	344	-	730	
Total	28,860	11,312	2217	225	27,967	

Source: Department of Fisheries, Satkhira

Table 3: Damage to Poultry and Livestock, December 2011

Upazilas	Category and number of affected animals/birds							Affected Farmers
	Cow	Buffalo	Goat	Sheep	Poultry	Duck	Other Birds	
Sadar	15200	-	15600	710	35000	424	240	8240
Kalaroa	7800	-	9200	50	12500	1220	70	5450
Tala	17000	-	18000	130	30000	500	300	10600
Assasuni	5200	60	3500	150	10000	950	50	5250
Debhata	5500	-	4100	40	8100	350	45	6150
Total	50,700	60	50,400	1,080	95,600	3,444	705	3,5690

Source: District Livestock Office, Satkhira

5.2. Prospect of agriculture production

The predominant rice crops in Satkhira are the rain fed Aman rice (60%) followed by the winter rice Boro (35%) and Aus (5%).² The majority of the farmers lost their Aus rice crop that was ready for harvest during the August 2011 flood. The transplant Aman was their post flood crop. Based on the reporting by Agricultural Extension Office at Satkhira, the T. Aman production will be 23 percent less than the target due to damage of Aman seed beds. The Aman harvesting scenario is expected to vary from upazila to upazila, with losses expected to range between 20 to 30 percent of the normal yield. Based on the present production rate it is anticipated that the Aman rice production (clean rice) will vary from 2.7 to 3.12 MT/ha. The following table (Table 4) represents the total expected yield versus target in the 5 affected upazilas under Satkhira district.

² The crop production estimates in Satkhira are compiled from agricultural production time series data by districts published by Bangladesh Bureau of Statistics (BBS).

Table 4: Current Aman production status (Anticipated)

Name of Upazila	Area covered for Aman paddy production (MT)		
	Target	Damage	Production
Satkhira Sadar	18000	3200	14800
Kolaroa	11080	2826	8254
Tala	8340	3060	5280
Debhata	5920	1185	4735
Assasuni	14000	2500	11500
Sub Total	57,340	12,771	44,569

Source: Agriculture Extension Office, Satkhira

The Union based reporting from the FGD and key informants provide the production predictions for Aman rice. The unions in Tala and Satkhira Sadar that have been severely inundated report expected Aman production to be 30 to 50 percent of normal production. Whereas unions moderately affected are expecting 60 to 70 percent of normal production.

The region normally produces significant quantity of Boro rice, winter vegetables and cash crops including oil seed, jute, and sugarcane during January and February (Annex 4. Crop calendar). The production prospects of these crops depends on the timely recession of flood water from agricultural and homestead lands but already there is a serious concern as to whether these crops will be able to achieve the normal yields. Farmers are trying to drain the water by their own effort. There does remain some possibility for Boro rice and vegetable production, but production of cash crop is faint due to financial constraints, local demand and cost benefit ratio of the products and existing marketing facilities.

The yields expected for Boro rice and winter crops for each Union, as indicated by agriculture officers, are captured in the following table.

Table 5: Unions with limited amount of Boro rice and winter crop production

Name of Upazila	Constrained Unions in Boro rice production
Satkhira Sadar	Labsha, Alipur, Balli, Shibpur, Fringli Dhulihar, Barahmarajpur, Porashava
Kolaroa	Langaljhara, Joynagar, Jugikhali, Porashava, Koyla, Diara, Jalalabad
Tala	Tetulia, Magura, Kumira, Nagarghata Khalishkhali, Tala Sadar
Debhata	All unions will be under Boro rice cultivation
Assasuni	Khajra, Bardhal, Anulia, Sreeula, Shovnali

So far no assistance has been provided either from the government or development partners/NGOs to the affected crop farmers for agricultural production. The Department of Agriculture Extension (DAE) has however provided farmers with advice on how to overcome the situation and possibility of future crop production.

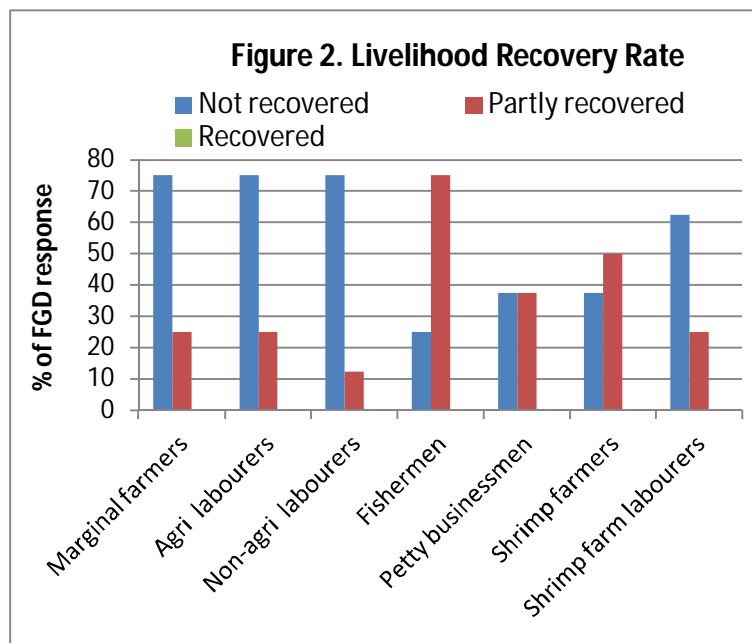
In the livestock and poultry sub-sectors the economic losses are higher than in the cropping sub-sector. Economic loss at the time of flooding has been sustained primarily from the need to sell livestock and poultry, as well as some cases of stock mortality. Space scarcity and shortage of livestock and poultry feed forced households to sell stock at very low prices. Farmers will need to

acquire cash through future crop sales, asset sales, mortgage of land, or by borrowing money from local sources (Bank or NGOs or private) to replenish the lost livestock and poultry and infrastructure. The landless, marginal and small farmers who lost crops in addition to livestock, poultry and fisheries need added support to recover their loss.

The fish farmers expect returns of only 25 percent compared to a normal year of fish production. They are renovating their ponds, gher, and dikes and preparing themselves for further fish production by acquiring money from asset sale, land leasing to NGOs and borrowing to relatives or local money lenders. Some gher and ponds are still under water and there is a prevalence of disease. Farmers hope stock will survive during the winter off-season and fish production will hopefully regenerate with the upcoming season in March.

The perceptions of the agriculture, livestock and fishery officers on the extent of damage across Unions have been captured and are included in Annex 3.

6. Livelihoods



Agriculture is the main source of livelihoods in Satkhira. Recovery of livelihoods in the flood affected areas has been very slow due to the water stagnation. Over 70 percent of the FGD participants reported that day labourers both agriculture and non agriculture are the worst affected followed by marginal farmers and labourers working in shrimp farms. The major reasons causing livelihood vulnerability for wage labourers and marginal farmers include limited employment and farming opportunities and reduced wage rate compared to the normal time of the year. Moreover, large parts of this marginal group lost household and

agricultural assets in the flood waters, with whatever remaining subsequently sold at very low prices to cope with the persistent crisis. All the FGD groups indicated that partial restoration of the livelihoods related to farming will take a minimum of 3 to 6 months.

6.1. State of day labourers

Over 50 percent of the day labourers in Khulna division are functionally landless and for them wage income is the major source of survival. Currently an agricultural wage labourer is earning an average daily wage of 130 Taka. This rate has increased by 30 percent compared to the peak flood of August 2011 however, it remains 32 percent less than at the pre flood time of June/July, which is still a time when wages are lower than compared to the peak agriculture season in the crop calendar. The

female agricultural labourers are suffering the most as they are receiving only 60 to 100 Taka a day with very minimal increase in their wage rates. December in general is a harvest season, and in surrounding areas of Satkhira like Barisal and other parts of Khulna division the average wage rate of the agricultural labourers has already increased approximately to Taka 200/day.

The daily wage for the non-agricultural wage labourers has increased by 50 percent from the low wages during the peak flood period. This is mostly due to recession of floodwater from the homestead roads and markets which enabled the resumption of some non-agricultural activities. The availability of jobs however has not improved substantially. The male FGDs reported that wage labourers access to employment varies from 2 to 4 days a week depending on the extent of water inundation.

Table 6: Wage and Terms of Trade for agricultural and non agricultural day labourers

	Before flood June 2011	Peak flood/ August 2011	Now/ Dec 2011	% change peak flood To Dec	% change peak flood To Dec
Agri wage, male (Tk/day)	200	100	130	30	-35
Non-agri wage, male (Tk/day)	210	67	136	104	-35
Rice price (Tk/Kg)	32.63	36.9	28	-25	-15
ToT ag. day labourer (Kg rice)	6.1	1.8	4.7	156	-24
ToT, non-ag. day labourer (Kg rice)	6.5	1.5	4.9	223	-24

Table 7: Percentage change in the monthly average income of a wage labourer

	Monthly average income in Taka
Normal harvest season	3200
Current/December 2011	1560
% Change	-51

The monthly income of wage labourers has been calculated based on daily wage and days of employment availability (Table 7). Their current monthly income in the present December harvest season is around Taka 1,560, whereas in a normal harvest season they used to earn around Taka 3,500 to 4,000. The decline in the daily wage by 35 percent has led to a monthly income reduction by 50 to 60 percent. This is mainly due to lack of employment opportunities in the area.

The Terms of Trade (ToT), or the rice purchasing capacity, for the day labourers was estimated as a proxy to measure the real income (see Table 6). Despite the increase in the labour wage rate from the sharp drop in August 2011 and the decline in the market price of rice, the ToT for both the agricultural and non-agricultural wage labourers is still 24 percent less than what it is normally. For example, in December in other districts of Khulna division the ToT varies between 7 to 10 kg of rice whereas in Satkhira it is currently about 5 kg of rice. In recent times the price of rice has reduced compared to the past several months, however price of other food commodities like oil, pulse, and wheat flour remains high in the local markets.

Given the extent of inundation in the worst affected unions of Satkhira district it is unlikely that the livelihoods related to agriculture will fully resume by February. This will constrain the income opportunities from the next Boro planting season.

6.2. State of marginal farmers

Marginal farmers are considered to be those with access to between 0.02 and 0.2 ha of land, which is below the size needed for adequate subsistence farming. The FGDs with marginal farmers report that there is going to be a very significant reduction in the amount of Aman harvested in December in the severely inundated areas of Tala and Satkhira Sadar upazilas. The other affected unions will also expect only 30 to 50 percent of usual Aman production. The limited amount of Aman production will affect both the cash income as well as the household rice stock supply of the marginal farmers. In normal years the rice stock from Aman production remains the main source of rice supply for three to four months, i.e. till March/April. This year the farmers whose Aman crop has failed are not going to have any rice stock till the next Boro harvest in May, which due to continued water logging and financial limitations is also unlikely to provide a normal yield.

Marginal farmers are expecting to produce 30 to 50 percent of Boro rice as compared to a normal year production. However this will only happen if the floodwater recedes substantially from the crop fields by January and February 2012. Farmers may not be able to invest in pulse and other winter crop cultivation due to financial constraints. For Boro rice production the majority of the marginal farmers have to take loan from banks and/or moneylenders to purchase seeds and other necessary agricultural inputs. This will generate further financial burden on them unless they can produce a substantial amount of rice which can be sold at a profitable price, which is unlikely to happen.

6.3. Alternate livelihoods for labourers and marginal farmers

The lack of available jobs in the farm sector has led many marginal farmers and agricultural day labourers to seek employment either pulling rickshaw vans or working in brick fields. Female members and children have also started working in brick fields and shrimp farms. With December being a harvest season, almost 5 to 10 percent of the affected heads of households have migrated to other parts of the country to work in productive agricultural fields. The seasonal migration rates are higher in Sadar unions of Tala and Satkhira. Overall the excess supply of labour in the local labour market has depressed the daily wage rates.

7. Food Security and Nutrition

7.1. Diet diversity and frequency

FGD participant reports on food consumption patterns in terms of diet diversity and frequency over the past seven days. At the time of the current assessment there were no reports that met a score of poor consumption. Nearly 39 percent of the FGD participants reported borderline food consumption, whereas 61 percent reported acceptable consumption.

Figure 3: Household food consumption score: FGD reporting, Dec 2011

- Borderline score: >28 to ≤ 42
- Acceptable score: 43-52

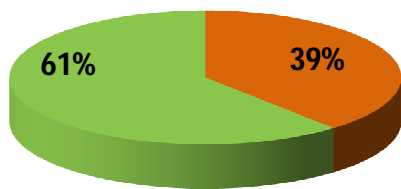
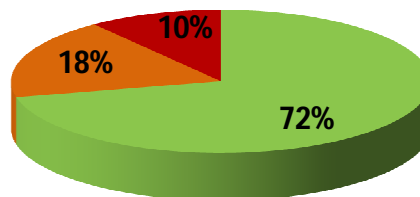


Figure 4: Food Consumption Score: WFP Baseline Survey August 2011

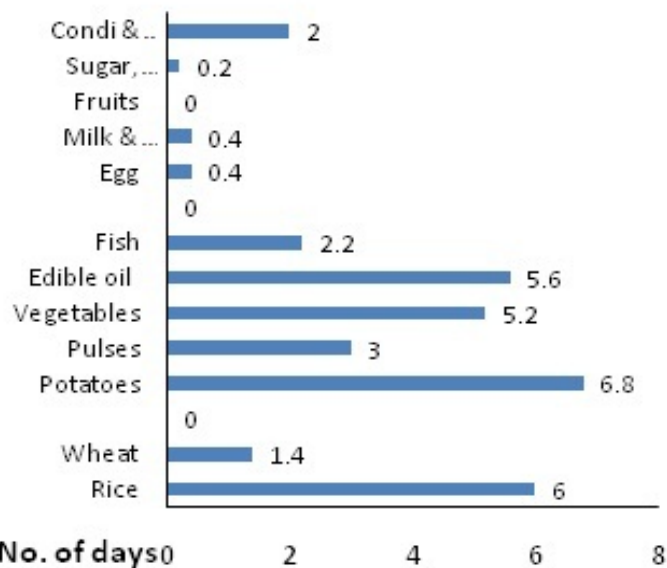
- Acceptable Consumption
- Borderline Consumption
- Poor Consumption



In August 2011 immediately after the flood WFP conducted a baseline survey on the flood-affected beneficiaries selected for food assistance. The survey was undertaken before food assistance was distributed, with results indicating 10 percent of households were considered to have poor food consumption and 18 percent with borderline food consumption. It is assumed that following the substantial relief activities by the Government, WFP, and the NGOs the households with poor food consumption improved to borderline food consumption. No major difference has been observed within households who score on the acceptable category.

The household diet diversity (HDD) for the FGD participants varied between consuming 4 to 5 out of 9 food groups. Frequent consumption of pulse and moderate consumption of fish has contributed to a rise in the levels of food consumption and HDD. In normal circumstances the poor households in rural areas only consume pulses once a week as this is considered an expensive commodity³. In the current assessment pulses are consumed 3 days a week, with the major source of pulse reported to be from relief activities followed by purchase from market in cash or credit. Fish intake was mostly obtained from fishing in the open water and purchase from market. The food relief and open water fishing is likely to have contributed to the low incidence of poor diet diversity and the food consumption scores as well.

Figure 5: Diet Diversity and Frequency



³ Household Food Security and Nutrition Assessment 2009, WFP, UNICEF, IPHN

The average number of meals consumed a day in a flood affected household is 2.8. Generally in rural Bangladesh a food insecure household consume 2.5 to 2.7 meals a day⁴. The scores on food consumption, diet diversity and meal frequency cannot be taken alone as they do not report on the actual quantity consumed. Therefore the results need to be interpreted in combination with other indicators including meal sufficiency.

7.2. Meal sufficiency

Nearly 80 percent of the FGD participants from male and female groups reported that despite the improvement in diet diversity the amount of food they consume is still insufficient and less than normal consumption requirements. The meal sufficiency for a household in Satkhira has been assessed based on the kilograms of rice needed and gap (Table 8). The usual rice requirement for a 5 to 6 member household in Satkhira is 2.4 kg a day (FGD reporting). During the peak flood period actual consumption of rice reduced by 44 percent compared to the stated requirement. At the time of the current assessment it was still less by 20 percent of the stated requirement. This estimation is based on FGD groups where the majority was receiving food assistance. Clearly the food relief (40 kg of rice/month) has contributed in reducing the average gap between rice requirement and consumption, although it still has not been enough to meet their requirement. In cases where vulnerable households do not receive any assistance and depend solely on their income the gap is higher. The literature indicates that in rural Bangladesh food insecure households spend 30 percent of total expenditure on cereals (rice)⁵. Therefore, with a daily wage currently not exceeding 130 taka a household can only afford less than 2 kg of rice, below the basic requirement.

	Before flood, kg/hh/day	During peak flood (Aug, 2011), kg/hh/day	Current (Dec, 2011) Kg/hh/day
Average rice consumption in Kg/household	2.4	1.4	2.0
Average rice in gram/person/day	488	275	390
% increase/decrease from pre flood & flood season		-44 ↓	-20 ↓

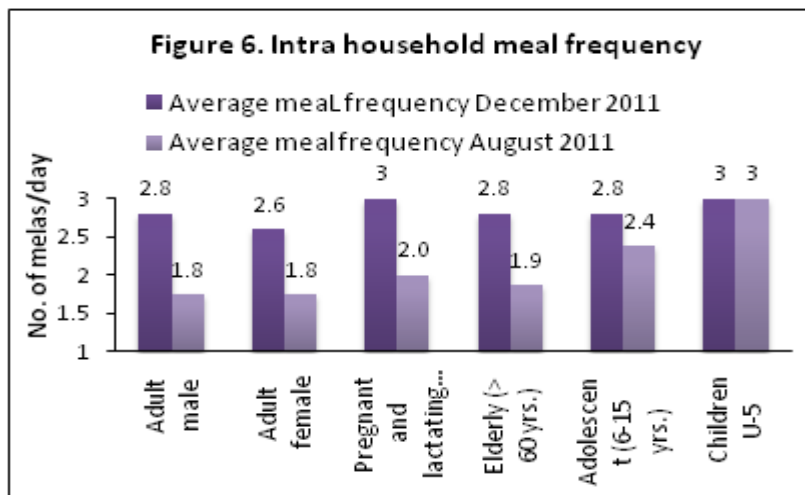
Moreover, if the current income of the vulnerable population is considered to be Taka 1,560/month, the gap is much higher. Usually, the monthly requirement of a typical household in Satkhira is 60 to 70 Kg of rice. When one calculates 100 percent of current income being spent on rice a gap of around 4 to 14 kg of requirement still remains; and when calculations consider 50 percent of the income spent on rice the gap reaches over 30 kg.

⁴Socio Economic Profiles of WFP Operational Areas and Beneficiaries, TANGO & WFP 2006; HFSNA 2009

⁵HFSNA 2009

7.3. Intra household food consumption

Intra household meal frequency considers the average number of meals had by each household member. Reports indicate that it has improved compared to peak flood period. However, the quantity of meal consumed was reported to be insufficient for all age groups in the household. Furthermore, adult female members still consume fewer meals. This has a serious implication on the nutritional status of the entire population, but particularly the pregnant and lactating mothers and children less than 5 years of age (Figure 6).



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UNICEF and HKI recently conducted an in-depth nutrition survey in Satkhira district from mid September to end October. The draft results (report yet to be finalized) of this survey indicate that in terms of diet adequacy of children under 2 and their mothers, Satkhira district is lagging behind in comparison to other parts of the country as well as Khulna division. Food consumption related coping strategies are likely to further deteriorate the nutrition situation. Moreover adult and adolescent female members of the household are the future mothers; and longer term compromises on quality and quantity of food has serious implication on their health and nutrition, which may result in low birth weight babies.

7.4. Nutrition

Past nutritional surveys⁶ carried out in 2007, 2009 and 2010 report better nutritional status in Khulna division compared to divisions like Rajshahi, Rangpur, Barisal and Sylhet. However, the recent nutrition survey by UNICEF in Satkhira region estimates a very high prevalence of acute undernutrition (wasting), close to the WHO emergency threshold of 15 percent. Chronic energy deficiency both in pregnant and non pregnant mothers also exceeded the rates of Khulna division.⁷

ACF undertook Middle Upper Arm Circumference (MUAC) based nutritional surveillance in the affected upazilas of Satkhira district, Assasuni, Debhata, Satkhira Sadar, and Tala in four spaced rounds over September to November 2011. The findings reveal a deteriorating nutritional situation for children under 5 (Table 9). During the first round (September/October) the Global Acute Malnutrition (GAM) rates were around 5 to 6 percent. September/October is the time of the agricultural lean season when GAM rates in rural areas normally increase. However, here rates increased significantly over the month of October to 27 percent and remained the same until the round 4 in early November. Based on WHO threshold, if 10% or more of children are classified as

⁶ Bangladesh Demographic Health Survey/BDHS 2007, HFSNA 2009, National Nutritional Surveillance 2010, HKI

⁷ The results from this survey are yet to be finalized. Therefore the figures are not stated here.

suffering from GAM, this is generally considered to be a serious emergency, and with over 15% the emergency is considered critical.

ACF's quality checking exercise revealed that during the first two rounds of data collection 70 to 80 percent of the households where children were surveyed were receiving food assistance, whereas during round 3 and 4 only 12 and 6 percent of households were receiving food assistance respectively. This indicates that the extensive food assistance provided by government and multiple other agencies after the flood may have contributed to lower the GAM rates. The sudden increase in GAM may be due to the termination of food relief by many organizations, including the government in September.

ACF's nutritional surveillance reported much worse MUAC based GAM in children 6-23 months than children 24-59 months. In September the GAM rate for 6-23 months old children was recorded at 9 percent and rates increased to 48 percent by first half of November.

MUAC cut off	ACF nutritional surveillance			
	Round 1 (28 Sept-8 Oct 2011)	Round 2 (12-20 Oct 2011)	Round 3 (26 Oct - 3 Nov 2011)	Round 4 (9 Nov 2011)
GAM	5%	6%	27%	27%
Severe (<11.5 cm)	0%	0.2%	1.3%	1%
Moderate (>=11.5 -<12.5 cm)	5%	5.8%	26%	26%
At risk (>=12.5 -<13.5 cm)	19%	19%	41%	37%

ACF also measured MUAC for pregnant and lactating mothers. Over the four rounds of surveillance the rates of severe acute malnutrition both for pregnant and lactating mothers increased substantially over round 1 to 4, whereas moderate acute malnutrition improved in round 4.

In August 2011, WFP conducted a baseline survey on food security and nutritional indicators prior to food distribution (Table 10). Food was distributed to 30,000 households (with households receiving rice, pulse, and oil, and PLWs and children 6-59 months receiving supplementary wheat soya blend/WSB). The MUAC based GAM reading for children under 5 was recorded to be 17 percent and maternal

MUAC cut off	Percentage
GAM	17%
Severe Acute (<11.5 cm)	2.80%
Moderate (>=11.5 -<12.5 cm)	14.20%
At risk (>=12.5 -<13.5 cm)	33.30%

malnutrition in pregnant and lactating mothers was recorded at nearly 50 percent (including both severe & moderate acute malnutrition). The Outcome Assessment in January 2012 will show the impact of food and nutrition assistance on reducing undernutrition.

WFP has regularly monitored the MUAC in children and PLW beneficiaries during each round of supplementary food distribution. Although, the results are yet to be finalized, the draft readings indicate that those receiving supplementary food are either in a stable or improving situation, rather than deteriorating.

Table 11. MUAC Measurement for PLW, WFP baseline survey, August 2011

MUAC cut off	Percentage
Severe Acute < 21 cm	10.33%
Moderate Acute >=21-<23 cm	39.31%

Given the overall deterioration in nutritional status of children and mothers in Satkhira district, the current shock which is leading to small quantities and poor quality of food over the long term is likely to further exacerbate the situation, especially in the case that current assistance is terminated. It is therefore essential that nutritional interventions continue to be implemented especially for vulnerable groups, including PLWs and children in the age group of 6-59 months.

There were not any serious reports of child morbidity from the FGD discussion. Most of the prevalent diseases in children (as indicated in the female FGDs) were skin disease, colds, fever and diarrhea, with frequency of these diseases higher than this time during a normal season. However, female participants with children under two reported reduced frequency in breast feeding, due to limited supply of breast milk. The mothers attributed this to the small quantity of food consumed.

8. Cooking Frequency, Water and Sanitation

The frequency of cooking as reported by the female FGDs have increased from once a day during the flood to twice a day. However, damaged houses and kitchens and the loss of kitchen utensils were reported as the major obstacles in resuming normal cooking practice. Availability of fuel was another crisis as the price of fire wood has increased. In addition, the collection of fire wood is not possible as many areas, especially the crop fields are still under water.

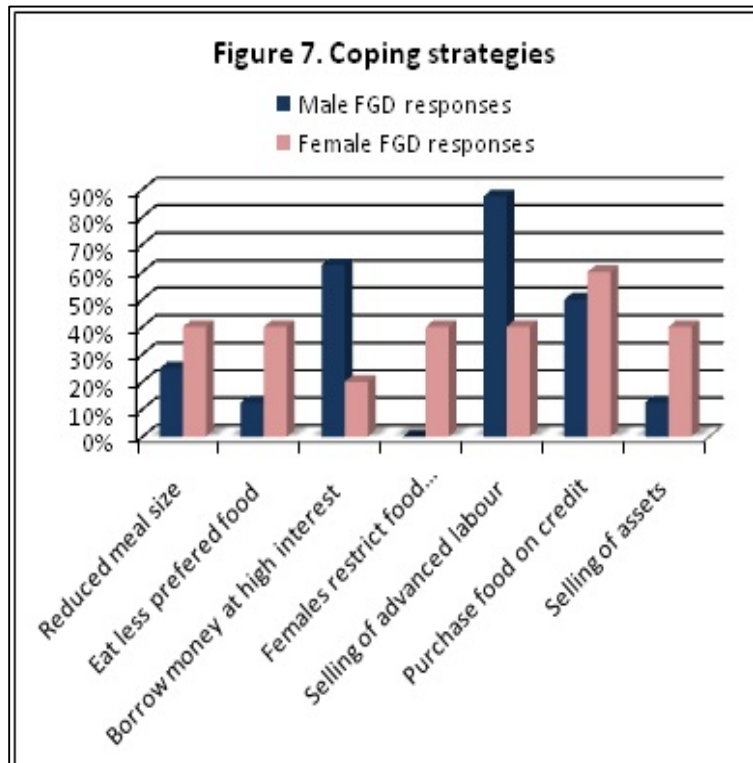
Supply of drinking water was reported to be insufficient. Most of the tube wells are still inundated and female members of the households have to walk further to collect drinking water.

Sanitation was another concern. Most of the affected households previously owned proper sanitary latrine which have been damaged. Therefore they are bound to use unhygienic temporary/makeshift latrines.

9. Coping Strategies

Compromises in quality and quantity of food are constantly practiced by the flood affected vulnerable households since August 2011. Before the flood, such compromises varied by agricultural seasons. Adult female members of the households currently consume less to allow children and adult male members eat more.

Besides food consumption related coping strategies, borrowing money at high interest, selling of advanced labour and the purchase of food in credit are the three most practiced coping strategies at household level. The prolonged practice of these strategies is likely to put the vulnerable households in a debt trap which will cause long term hardship.



10. Food Price and Market Assessment

Based on the market surveys and FGD reporting it was evident that the markets in the flood affected areas are fully functional. Local people regularly visit markets to purchase food and non food items, whereas during peak flood period their visit to market was less than 2-3 times a week.

The traders reported that the supply of stock in the market has returned to normal. They did not indicate the limited production of Aman rice as a constraint to the rice supply in the local market. Availability and supply of major food commodities was not raised as a concern.

In terms of trading volumes around 60 percent of the traders reported that it has improved compared to peak flood time but has not returned to normal and the remaining traders said it has returned to normal. For those indicating trading volume had not fully resumed two major reasons were listed, purchasing capacity of the affected population still affected, and that food relief prevented many to purchase from market. There was no reporting on selling of food relief in the markets.

	Before flood	During flood	Current price
Coarse rice	33	37	28
Atta	18	25	24
Potato	N.A	28	12
Masur dal/lentil	78	96	65
Soybean oil	113	124	116
Small fish	86	73	69

Source: Current assessment/December 2011

With regard to the food price, the price of rice, lentil and small fish reduced substantially compared to peak flood and even pre flood period. This is an effect of decrease in price of rice at national level due to good production of Aman crop in other parts of the country and sufficient stock of rice at the Public Food Distribution System. However, the traders were not sure how long the

prices will remain low. There is a speculation that the rice price will remain low for two more months with countrywide Aman harvest in December.

11. Population in Need of Assistance:

All FGD and key informant participants indicated that wage based labourers and the marginal farm household living in worst affected areas are in need of external assistance to recover from the current shock. The full recovery of their livelihood is anticipated to be delayed until next Aman harvest in November/December 2012 at the earliest. Withdrawing any ongoing assistance for these households may result in a severe deterioration of the current situation.

A division level national survey conducted in 2009⁸ estimated that 23 percent of the total population in Khulna division are agricultural and non agricultural labourers which are functionally landless, and 17 percent are marginal farmers. Applying the statistics to the household size in the bottom two worst affected unions of Satkhira and Jessore district (21 unions) as identified in the composite perception map, it was estimated that around 32,000 wage labour households and 23,000 marginal farm households require recovery assistance. This represents 55,000 households in total. This estimate includes Keshabpur upazila from Jessore district. The ongoing needs of recovery assistance in Satkhira alone are 28,000 wage labour household and 21,000 marginal farm households. A detail union wise breakdown of the estimate is given in Annex 5. Similarly across Satkhira and Jessore estimates of children under 5 and pregnant and lactating mothers are 8,000 and 5,000 respectively (Annex 6). These figures have been taken from the current nutritional feeding programme by WFP in those worst affected unions.

In August 2011, based on extreme poverty rates WFP estimated around 65,000 households in need of assistance. Currently the figure has come down to 49,000 households. The major reason of this change is many unions in Debhata, Assasuni and Kalaroa are recovering faster from this shock compared to Satkhira Sadar and Tala. Therefore in the union prioritization these areas have not been included. Moreover, the current estimate of 49,000 households may have been less if the marginal farmers were not considered separately. A certain part of the marginal farmers in normal times are

⁸ HFSNA 2009

not considered as extreme poor; during the August 2011 assessment some of them had food stock from the Aus harvest. Currently they are no worse than the households of the extreme poor.

12. Priority Needs of the Community

Immediate priority: The FGD participants as well as the key informants identified i) food and nutrition supplement support and ii) livelihoods support as two prime needs of the flood affected vulnerable community.

With regard to the food and livelihoods support the participants requested that food distributions continue for one more month i.e. till January 2012, followed by cash and food for work activities to begin and continue for four to five months until the next Boro harvest. The Union Parishad representatives noted that there will be ample opportunities for food and cash for work from January and onwards as they expect water to recede substantially by that time. The female groups strongly requested continuation of nutritional supplements for children and pregnant and lactating women.

In the advent of Boro rice plantation from January the marginal farmers expressed urgent need of seeds and cash to purchase livestock and agricultural inputs. Cash grants, low interest loans by the NGOs and Krishi Bank, and free supply of seeds were also mentioned as some possible remedies.

Medium term priority: Under medium term needs i) rebuilding of shelter and ii) improving access to drinking water and sanitation were the top priority sectors. The marginal farmers proposed extensive rehabilitation programmes in the agriculture sector, including interest-free agricultural loans, the free supply of seeds and fertilizers, and cash grants to purchase livestock which have been sold during the current floods.

Long term priority: Long term priority needs were on longer term solutions to the flooding situation that is frequent in some parts of the districts. The suggestions were on river excavation, proper design and management of shrimp cultivation and coastal dykes and introduction of water and saline resistant crop variety.

13. Recommendations:

It is evident from the assessment and other secondary sources that the food and cash assistance to the vulnerable communities over the past months have prevented the further deterioration of food and nutritional security of the recipients of the assistance. The assessment also revealed that full recovery of the agricultural production in the upcoming harvest season (Boro harvest in May) is not guaranteed, therefore the livelihoods of the vulnerable households dependant on the agriculture sector is also unlikely to return to the normal state for some time. It is expected that the damage to crops and limited cultivation opportunities will extend the normal lean season (August to September) to at least December. There was a strong urge from the affected communities to extend assistance to restore and recover the livelihoods of the worst affected. Considering the impact on agricultural production in the current and upcoming season, the loss of household, livestock, poultry and farm assets and loss of livelihoods the assessment team proposes the following recovery measures.

Short to medium term intervention

i. Support to the vulnerable households in worst affected areas to restore livelihoods through rehabilitation of infrastructure and creation of employment opportunities.

Since the markets are fully operational in most parts of flood affected Satkhira, Cash for Work can be implemented to create employment opportunities. However in many of the worst affected areas large scale earth works may not be possible due to continued inundation in low lying areas. Scale, type and timing of earth work will have to be decided with community consultation in the targeted unions and maximizing use of the time available prior to the next wet season due in June/July. In circumstances where Cash for Work is not viable, Cash for Training or unconditional cash transfer can be considered. Distribution of vegetable seeds would complement the assistance and enable affected households to resume productive activities thereby improving their nutritional status and generating income. Such assistance is recommended to continue until May when the next Boro rice harvest becomes available. It is expected that until then all those displaced will return home, homesteads are repaired and employment opportunities are pursued.

However, full resumption of agriculture based livelihoods is not likely until the next Aman harvest in December. It is expected that the lean season normally over September/October will be severe and likely to extend until December. Contributing factors include: the serious damages sustained and subsequent low yields for Aman crop currently being harvested; the reduced Boro harvest in May; and the normally insignificant Aus production in Satkhira area. The Aman plantation in June/July is not typically a major employment generating season as the task of planting is not very labour intensive, nor does not provide substantial crop yields. Therefore external assistance for the recovery of the livelihoods of the most vulnerable may need to be extended until next December 2012. Since the monsoon extends from June to August/September, Cash for Work will not be feasible for this time period. Cash assistance in the form of cash grant, Cash for Training or unconditional cash transfer may be provided till the end of the monsoon followed by Cash for Work till December 2012.

ii. Support to nutritionally vulnerable populations, especially pregnant and lactating women (PLW) and children 6 to 59 months, with supplementary ration.

In order to address the specific needs of pregnant and lactating women (PLW) and children 6 to 59 months, blanket supplementary feeding is recommended until April/May using a micronutrient fortified food in order to prevent a deterioration of nutritional status in these vulnerable household members, particularly given the exacerbating factors of inadequate amount of diet, poor water and sanitation and the risk of water-borne diseases. In case of resource constraint the nutritional support may be provided only to the worst affected five unions in Tala and Satkhira Sadar upazila. Further extension of the supplementary feeding has to be justified based on the analysis of field data on MUAC of children collected by ACF and WFP's outcome survey.

Blanket feeding is recommended in the follow up response as there is currently limited capacity within the health sector to implement a targeted supplementary feeding programme. To transition from blanket feeding, there should be a focus on developing Community Management of Acute Malnutrition (CMAM) within the health sector. This will enable communities and the government to more effectively prevent and treat malnutrition and its fluctuations between seasons and during and after disasters.

iii. Support to rehabilitate marginal farmers and other vulnerable groups with rice, vegetables, fisheries production and livestock rearing.

Agriculture is the single largest employer of the ultra poor in the region and it is important that this can be re-established at the earliest so as to create employment opportunities. The Aman crop and vegetable gardens have been damaged substantially and the remaining Aman production is expected to be 50 percent less than in a normal production. The marginal farmers are going to bear the major brunt of the impacted Aman and Boro production. Moreover loss of agricultural assets including livestock has made the next Boro plantation difficult.

Cash grants or access to low interest agricultural credit to purchase agricultural inputs is an immediate measure that can be provided to the marginal farmers. This can be supplemented by training on proper use of agricultural inputs, disaster preparedness, post- disaster crop management, and similar support can also be provided to marginal farmers involved with livestock rearing and fisheries.

In areas where Boro production is expected to falter substantially, marginal farmers can be provided with vegetable seeds free of cost for homestead gardening. Depending on their vulnerability they may also be considered for Cash for Work or unconditional cash transfer programmes.

iv. Follow up Assessment

The assessment mission further recommends that another Food Security Assessment may be required in May 2012 to further determine the needs of recovery and restoration support to livelihoods. However the need and extent of this assessment should be determined based on the regular monitoring of the evolving situation.

Medium to long term intervention

The medium to long term interventions are mostly related to the recovery and rehabilitation of agriculture and river drainage. Some key options in this regard include:

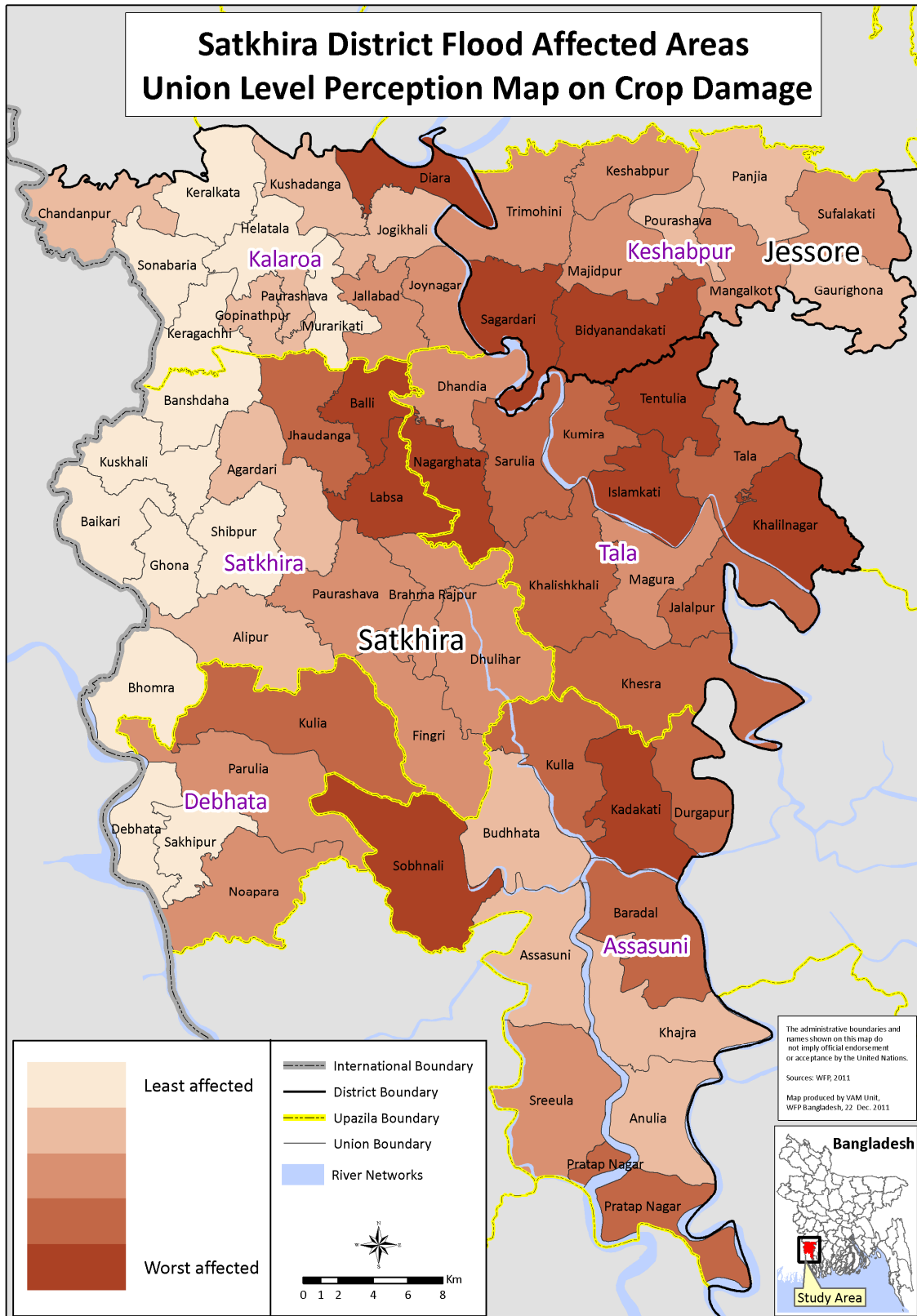
- i. Technology based training in agriculture, livestock and fisheries for small and marginal farmers;
- ii. Promote salinity management technologies such as early sowing of mung bean, cowpea, soybean and sesame after harvest of Aman rice; raised bed with mulch followed by drip irrigation for high value horticultural crops; rice straw followed by rice bran mulch with supplemental irrigation for pit based crop cultivation;
- iii. Improve access to agricultural credit;
- iv. Introduction of salt resistant and high yielding crop varieties in the area;
- v. Rehabilitation of storage capacities;
- vi. Support to livestock and poultry restocking;
- vii. Support to the rehabilitation of the aquaculture sector through soil mineralization, fingerling stocking;
- viii. Rehabilitation of the embankments and of the stock of shrimp seeds;

- ix. Create employment opportunities for the people living in the remote rural areas by introducing a multidisciplinary agricultural production approach including livestock and fisheries; and
- x. Ongoing planning efforts such as the Southern Delta Master Plan are further expected to promote investments leading to the prevention of floods and water logging in the area.

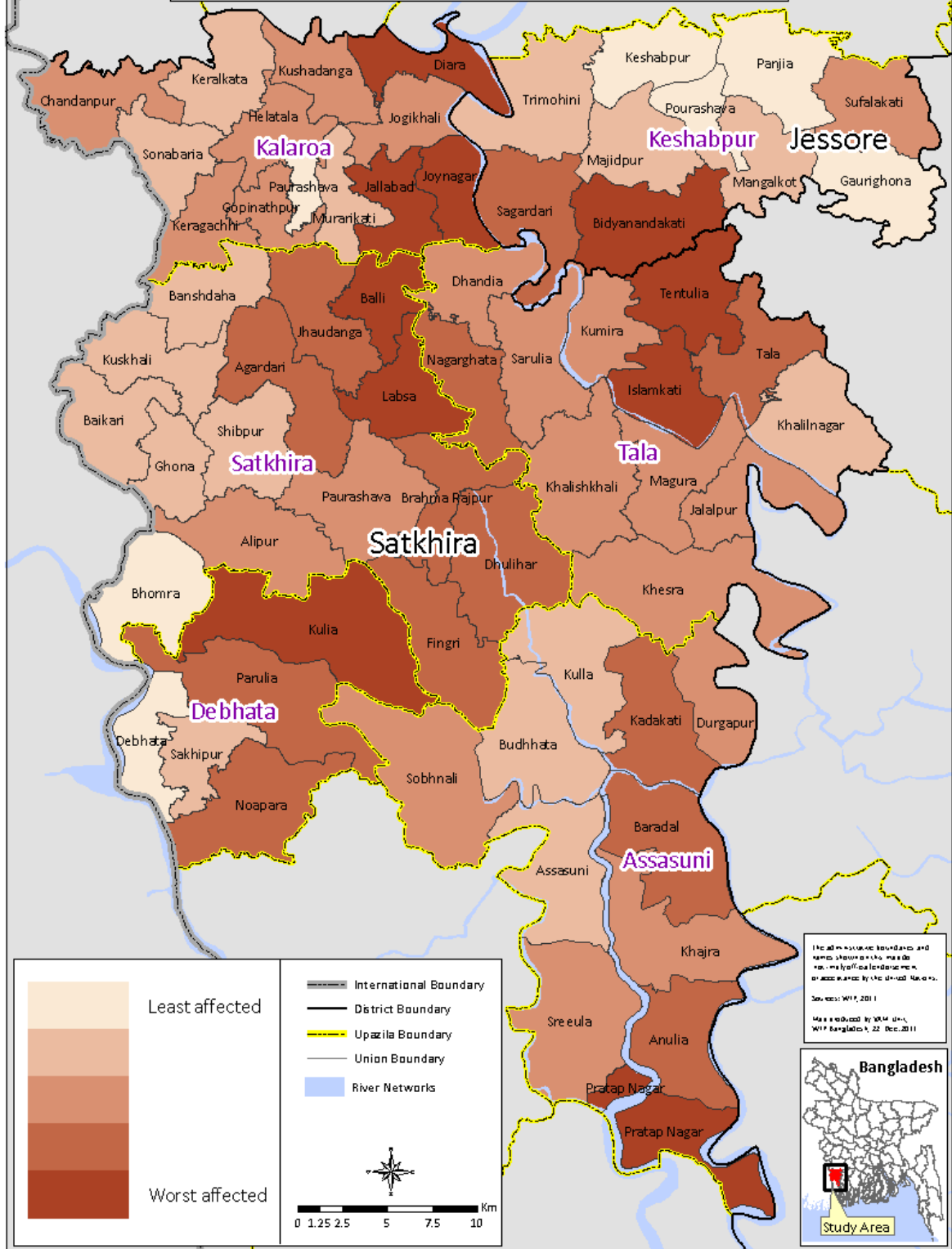
Annex 1. Survey Plan

Table 4: Survey Plan for Focus Group Discussion							
District	Upazila	Union (purposive sampling)	Stakeholders Assessment				Total
			Vulnerable Mixed Group including affected poor farmers/day labourer	*UDMC members & Local representatives (Imams, school teachers)	Vulnerable affected poor Female / women group	Market holders/traders/foria	
Satkhira	Tala	Jalalpur	√	UDMC	-	-	2
		Tetulia	-	Local reps	-	√	2
		Islamkathi	√	UDMC	√	√	4
		Tala Sadar	√	-	√	-	2
	Satkhira Sadar	Labsha	√	Local reps	√	-	3
	Satkhira Pourashava	Pourashava	√	-	-	√	2
	Kalaroa	Dewara	√	UDMC	√	-	3
	Debhata	Kulia	√	Local reps	√	√	4
	Assasuni	Dargapur	√	Local reps	-	√	3
Total	5 Upazila + 1 Pourashava	9 Unions	8	(3 UDMC + 4 Local reps) = 7	5	5	25
*UDMC: Union Disaster Management Committee							

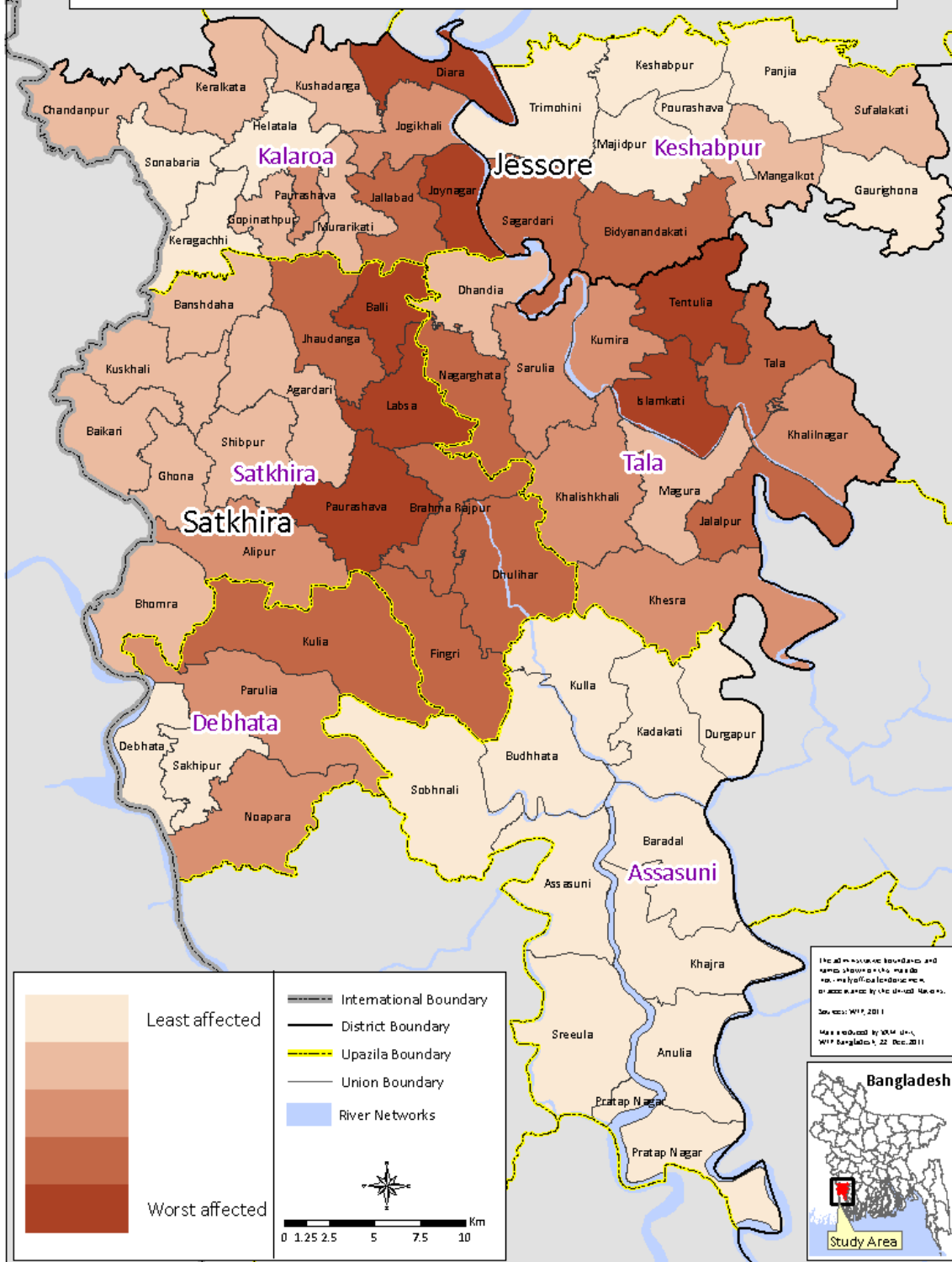
Annex 2: Union level perception maps in a score of 1 to 5



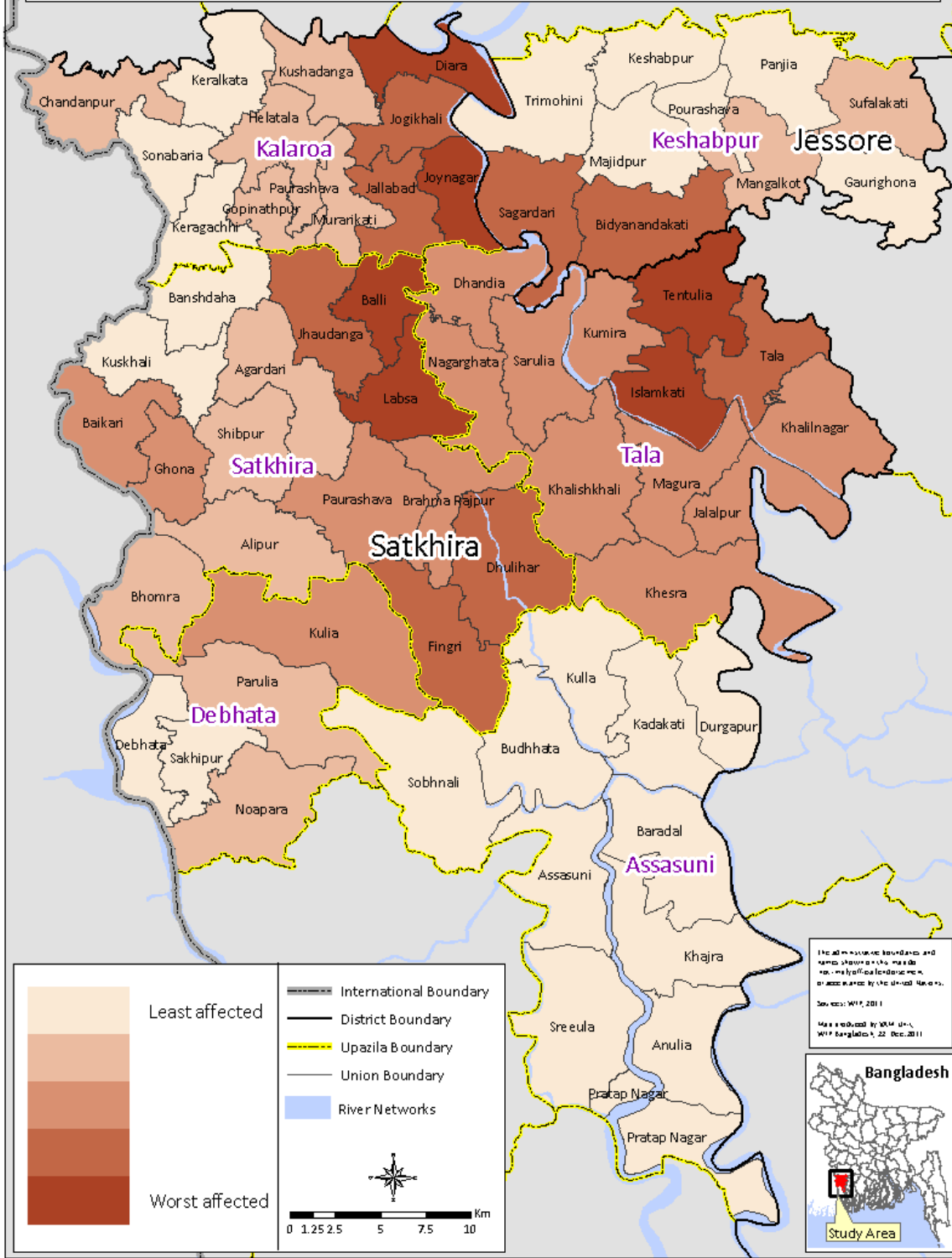
Satkhira District Flood Affected Areas Union Level Perception Map on Poverty



Satkhira District Flood Affected Areas Union Level Perception Map on Inundation Severity



Satkhira District Flood Affected Areas Union Level Perception Map on Prospect of Boro Production

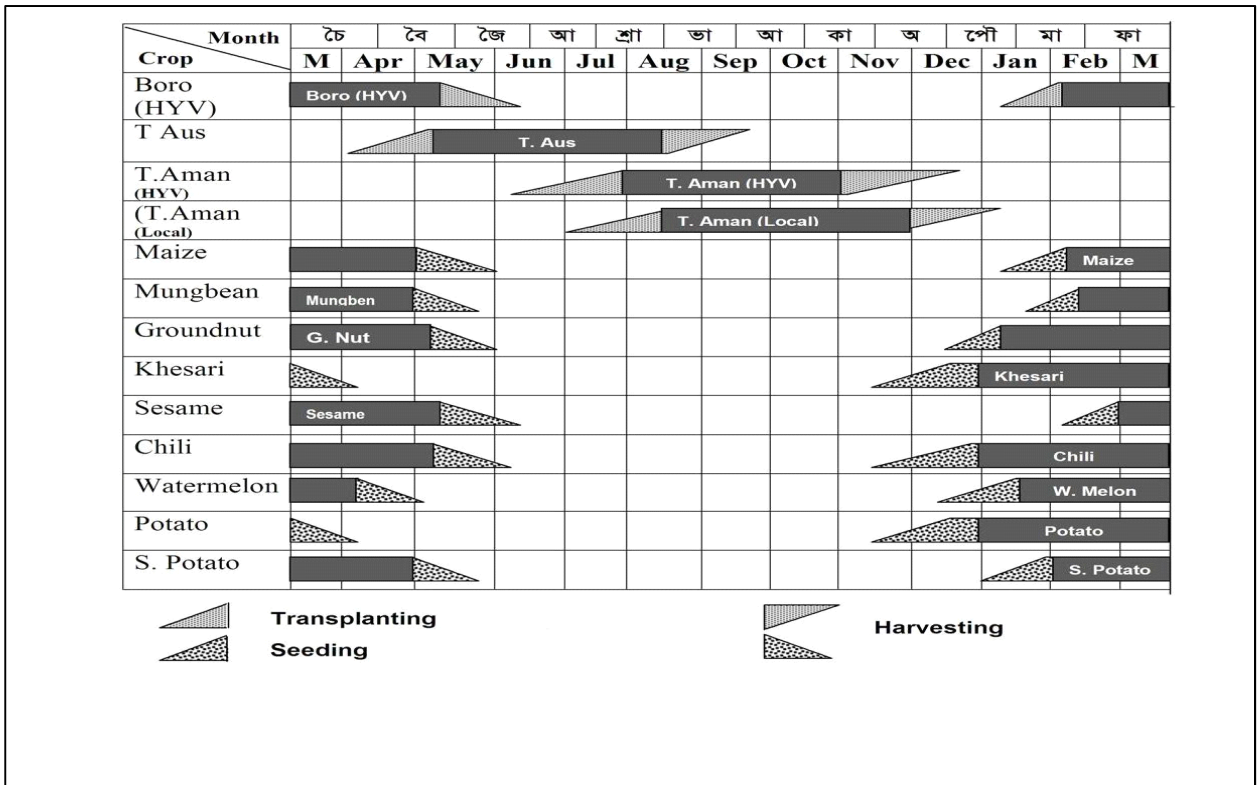


Annex 3. List of affected unions in five affected Upazilas of Satkhira districts in crop, livestock and fisheries sub-sectors (based on perception of the Agriculture, Livestock and Fisheries Officers)

Sub-sectors	Upazila	Unions affected (Worst represents category I)		
		I	II	III
Crop	Satkhira Sadar/ Pourashava	Labsha, Jhaudanga	Balli, Porashava, Alipur	Fingri, Shibpur, Brahmarajpur, Ghona
	Tala	Kumira, Islamkathi, Khesra, Tetulia, Jalalpur, Magura, Nagarghata	Tala Sadar, Dhandia, Sharulia, Khalishkhali, Khalilnagar	-
	Kalaroa	Jalalbad, Jugikhali Koyla, Joynagar	Langaljhora, Diara, Keralkata, Chandanpur Pourashava	Shonabaria, Kushadanga, Helatala, Keragassi
	Debhata	Kulia, Parulia	Nawapara, Shakhipur, Debhata Sadar	-
	Assasuni	Dargapur, Kadakathi	Budhata, Kulla, Assasuni Sadar	Khajra, Anulia, Bardhal, Shovnali, Pratapnagar
Livestock	Satkhira Sadar/ Pourashava	Labsha, Jhaudanga, Balli, Paurashava	Brahmarajpur, Fingri, Dhulihar, Alipur	Shibpur, Kushkhali, Bashdaha, Baikali, Ghona, Vomra, Agradari
	Tala	Kumira, Islamkathi Khesra, Tetulia, Jalalpur, Magura, Nagarghata	Tala Sadar, Dhandia, Sharulia, Khalishkhali, Khalilnagar	-
	Kalaroa	Jalalbad, Jugikhali Joynagar, Diara Kushodanga,	Koyla, Paurashava, Helatala	Shonabaria, Langaljhora, Keragassi, Keralkata, Chandanpur
	Debhata	Kulia, Parulia	Nawapara	Shakhipur, Debhata Sadar
	Assasuni	Anulia, Dargapur, Kulla, Shovnali	Assasuni Sadar, Khajra	Sreeula, Pratapnagar, Kadakati, Buddhata, Bardhal
Fisheries	Satkhira Sadar/	Labsha, Dhulihar Brahmarajpur, Pourashava, Shibpur, Kushkhali	Balli, Jhaudanga, Alipur, Ghona, Baikali, Bashdaha	Agardari, Fingri, Vomra

	Pourashava			
	Tala	Tetulia, Dhandia Nagarghata, Kumira, Sharulia, Islamkathi,	Khalishkhali, Magura, Khalilnagar, Jalalpur	Tala Sadar, Kheshra,
	Kalaroa	Jalalbad, Joynagar, Langaljhara, Diara	Pourashava, Koyla, Shonabaria, Keragassi	Helatala, Jugikhali, Kushadanga, Keralkata, Chandanpur
	Debhata	Kulia, Parulia	Nawapara	Shakhipur, Debhata Sadar
	Assasuni	Dargapur, Kulla, Shovnali, Kadakati	Assasuni Sadar, Sreeula, Buddhata	Pratapnagar, Bardhal, Khajra, Anulia

Annex 4. Crop calendar for Satkhira district



Annex 5. Distribution of households in need of recovery assistance by Union

District	Upazila	Unions	Score	Popn 2011	Hh 2011	Day labour hh (@ 23% of the total hh)	Marginal farm hh (@ 17% of the total hh)
Satkhira	Debhata	Kulia	4	31570	6353	1461	1080
Subtotal Debhata upazila				31,570	6,353	1,461	1,080
Satkhira	Kalaroa	Deara	5	21608	4676	1075	794
Satkhira	Kalaroa	Joynagar	4	15084	3489	802	593
Satkhira	Kalaroa	Jalalabad	4	19014	4145	953	704
Subtotal Kalaroa upazila				55,706	12,310	2,830	2,091
Satkhira	Satkhira Sadar	Labsha	5	32504	6904	1588	1173
Satkhira	Satkhira Sadar	Balli	5	17642	3937	905	669
Satkhira	Satkhira Sadar	Municipality	4	107240	21904	5037	3723
Satkhira	Satkhira Sadar	Dhulihor	4	23681	5078	1167	863
Satkhira	Satkhira Sadar	Brammaraj pur	4	21921	4625	1063	786
Subtotal Satkhira Sadar upazila				377,539	79,775	9,760	7,214
Satkhira	Tala	Islamkathi	5	22031	4889	1124	831
Satkhira	Tala	Tentulia	5	26372	5991	1377	1018
Satkhira	Tala	Nagarghata	4	19981	4331	996	736
Satkhira	Tala	Khailnagar	4	31164	7008	1611	1191
Satkhira	Tala	Kholishkhali	4	29554	6369	1464	1082
Satkhira	Tala	Sorulia	4	40020	8914	2050	1515
Satkhira	Tala	Kumira	4	26313	5701	1311	969
Satkhira	Tala	Tala Sadar	4	35582	7734	1778	1314
Satkhira	Tala	Jalalpur	4	25352	5702	1311	969
Satkhira	Tala	Keshra	4	28847	6223	1431	1057
Subtotal Tala upazila				285,216	62,862	14,453	10,682
Jessore	Keshabpur	Sagordari	4	31835	7115	1636	1209
Jessore	Keshabpur	Biddanondo kati	4	33775	7387	1698	1255
Sub total Keshabpur upazila				65,610	14,502	3,334	2,464
Total				1,040,294	222,412	31,838	23,531

Note: Union wise figurers are estimated and indicative.

Annex 6. Children under 5 and PLWs in need of nutritional feeding

District	Upazila	Unions	Score	Under-5	PLW
Satkhira	Debhata	Kulia	4	301	558
Subtotal Debhata upazila				301	558
Satkhira	Kalaroa	Deara	5	393	765
Satkhira	Kalaroa	Joynagar	4	206	432
Satkhira	Kalaroa	Jalalabad	4	260	545
Subtotal Kalaroa upazila				859	1,742
Satkhira	Satkhira Sadar	Labsha	5	937	160
Satkhira	Satkhira Sadar	Balli	5	342	71
Satkhira	Satkhira Sadar	Municipality	4	1230	274
Satkhira	Satkhira Sadar	Dhulihor	4	280	57
Satkhira	Satkhira Sadar	Brammarajpur	4	80	32
Subtotal Satkhira Sadar upazila				2,869	594
Satkhira	Tala	Islamkathi	5	463	138
Satkhira	Tala	Tentulia	5	295	194
Satkhira	Tala	Nagarghata	4	525	81
Satkhira	Tala	Khalilnagar	4	268	42
Satkhira	Tala	Kholishkhali	4	323	58
Satkhira	Tala	Sorulua	4	254	51
Satkhira	Tala	Kumira	4	86	37
Satkhira	Tala	Tala Sadar	4	455	174
Satkhira	Tala	Jalalpur	4	195	36
Satkhira	Tala	Keshra	4	157	30
Subtotal Tala upazila				3,021	841
Jessore	Keshabpur	Sagordari	4	200	530
Jessore	Keshabpur	Biddanondokati	4	401	783
Sub total Keshabpur upazila				601	1,313
Total				7,651	5,048

Note: The numbers are derived from the feeding figures by WFP for the 30,000 households in these unions. In real term blanket feeding the figures may increase.