Seasonality and Food Insecurity: A Study on Sundarban Impact Zone of Bangladesh

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Abstract

Bangladesh is a developing country and food policy is important for individuals or those who run various safety net programs. Food Insecurity could be seasonal for those who are very much dependent on natural resources like Sundarban Impact Zones of Bangladesh. The season when the local people suffer from food insecurity and found that the months like Srabon (July-August), Vadra (August-September), Ashwin (September-October) and Kartik (October-November) are the most food insecure months of a year. During these four months about 30% to 40% people suffer serious food insecurity problems. The average income group of that area is 2000 to 10000 Tk and that is 80% of total income group. Also there are various social safety net programs and people are dependent on them at their food insecure period. By identifying the food insecure period, we can develop more effective food security plan to survive from their struggle.

Keywords: Seasonality, Food Security, Safety net Program, Reserve Forest of Bangladesh.

Introduction

Food security at household levels in Sundarban Impact Zones (SIZ) is a phenomenon strongly influenced by the availability of Sundarban Reserve Forest (SRF) products that people harvest in order to maintain their livelihoods. It is mostly a seasonal phenomenon where in certain months people do not have enough income to purchase food items (WFP, 2004). Scarcity of land resources at household level causing heavy dependence of families on food supplies in the markets. This research presents the status of food insecurity of Sundarban Reserve forest (SRF) dependent area which is called Sundarban Ecological Critical zones (ECZ) (BRSE 2000). It is widely accepted that the resources of SRF are declining rapidly as a result of unsustainable harvest by the local people which is commercially organized for some products like golpata, honey and fish, while people harvest products like shrimp fries, mudcrab as subsistence activities. Acute poverty of majority of the people living in forest adjoining areas plays triggering roles for unsustainable harvests by them and secondly the greed of *SRF product* merchants (exist in the upper tiers of the product value chain) contributes in rapid destruction of Sundarban Forest products.

Food security can be defined as access at all times by all people to sufficient, safe and nutritious food which meet their dietary needs and food preferences for an active and healthy life (BCAS, 1994). Distinctiveness of physical processes over the time, which ignites transformation in the ecosystem functions/productivity and related wavering in product prices, may be defined as the seasonality aspects of an area (Barrett *et al.*2003). It can be over the week, months or year basis. Seasonality concerns cause ups and downs in the conditions of families in two ways, i.e. (i) inconsistencies that takes place in different times/episodes within a year timeframe (this might be weekly, monthly or yearly) and (ii) yearly *residual-impact* counts push communities in a fundamentally new forms of uncertainties, which may happen in a three or five year timeframe (e,g, creating new group of poor people or domestic

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migration may take place). The seasonal changes bring disproportionate and differentiated outcomes/consequences (e.g. different timing, duration) to different professional groups of people (Migotto *et al.* 2005). It have serious bearings in people's lives and livelihoods in those areas where livelihoods aspects are mainly primary in nature and heavily connected with conditions of natural resources In coastal Khulna region, livelihoods of about 80% of the people are heavily dependent on the availability and abundance of natural resources, which are the products of physical processes susceptible to seasonal changes.

If availability of the natural resources reduces or the quality of the product is poor, competition over resource collection amongst the community members/professional groups increases and finally resulted in the disproportionate harvest by different groups. This disproportionate distribution or inequality in natural asset distributions also creates grounds of social tensions and cause related exercise of power by the privileged on the disadvantaged. In Bangladesh, the people and the communities have to endure with the limited resources available around them to maintain their livelihoods security since the contributions of external factors (e.g. coverage of social safety net programs) in addressing the impacts of shortfalls of natural resources are insignificant (Maxwell, 1995). This indicates that the changes in the quantity and quality of natural resources shapes up the conditions of livelihoods security and finally reflected in the overall wellbeing of family members at household levels (FAO, 2005). The season when the people suffer from food insecurity and what are the safety net programs functioning there to recover from the food insecurity in the study area are tried to find out.

To study seasonality and food security the research area has chosen such an area where most people are dependent on natural resources like Sundarban Reserve Forest (SRF). They are heavily dependent on season also. According to department of Environment (DoE) Bangladesh, we have 10 kilometers buffer area around the Sundarban Reserve Forest as Sundarban Impact Zone (EIZ) and also Economically Critical Area (ECA) for various resources collection enormously. Here 18 unions under four Upazila (Mongla, Morrelgonj, Bhandaria and Sharankhola) near Sundarban are selected to identify the seasonality.



Map 1: Location map of the study area

Materials and Method

Both quantitative and qualitative methods were used to conduct the research. The key methods used in this study are: Structured Household questionnaire survey, Focus Group Discussion (FGD) and spatial analysis (GPS survey, remote sensing and GIS analysis). And following sampling techniques were used to determine the sample size.

- The sample size was 383 households by considering 5% marginal error, 95% Confidence level and 50% Response distribution. The total population is 75896.
- The distribution of the households amongst the Upazilas was uneven and a weight calculation method was followed to distribute the sample households in different upazilas.
- After completing the above function a mapping exercise were carried out to ascertain that households are drawn from different geographical areas. It was done because of the fact that exposure to physical hazards and threats would be higher to those people who live very close to the rivers than those who live in the interiors. Similarly, people living near the SIZ may be more inclined to extract forest resources than the people living comparatively far away from the forests. The mapping exercises assisted to identify the unions for drawing sample households. The survey data were disaggregated by age, gender, disability and household types.

Results and Discussion

The similar pattern of food insecurity have been found in all the study area, i.e. Bhandaria, Mongla, Morrelgonj and Sharonkhola. People of those area mentioned that the months like Srabon (July-August), Vadra (August-September), Ashwin (September-October) and Kartik (October-November) are the most food insecure months of a year (Figure 1). During these four months about 30% to 40% people suffers serious food insecurity problems.

It is also found that food security conditions are moderate in their households. The graphical presentation of moderate food security estimates indicate that moderate food insecure families stay closer to those families facing food insecurity the most (circle). Even food secured families also reported that during these moths they face some challenges. However, the Figure-1 suggests that the food security situations are impulsive and there is a big chance that 'moderate food secured' families may be converted into 'food insecure families' if the existing situations go further wrong.



Figure 1: Food security conditions by months in different upazilas.

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Figure 2: Degree of food insecurity in different months

Figure 2 illustrates month wise dis-aggregation of food security conditions. People informed that drop of daily numbers of food intake are the most practiced options to cope with the situation.

Food insecurity situations in the SIZ areas can be seen at three levels, i.e. at household levels, community levels and at regional scales. Household level food insecurity is the



Map 2: Social Safety net Status of the study area

outcomes of livelihoods insecurity and part of it comes from the poverty inheritance. In addition, their skills are only limited to certain SRF product harvesting and they have very limited alternative options to engaged with for income generation. Community level food insecurity is the results of the existence of pervasive lack of food insecurity in the locality, where no one is affluent enough to support fellow community members in need. The community members mentioned that they always feel unstable and unconfident when they see that there is nobody around them if a dire need is emerged in terms of food insecurity. Regional scale food security is the results of breakdown of subsistence farming/production systems in the area as a result of man made or natural calamities. As mentioned before that natural calamities include the occurrence of cyclones, intrusion of salinity in soil, surface and ground water and in the air. Man induced problems are cause by conversion of agricultural fields into shrimp farms, creating unplanned dykes/dams that caused water logging. The agricultural production systems were labor intensive where both male and female members got the opportunities to be engaged with. But shrimp farming in vast land areas curtails the opportunities of farmers/labors and left many traditional farmers/labors out of job. Besides, the market of the current produce (e.g. shrimp, crab) is not local rather export oriented global. Had it been the market established as per the local needs, people might become entrepreneurs to do many different kinds of related activities/business/value addition and then local produce may contribute in boosting up local economy. The phenomenon that the market is very big (global) both for shrimp and crab and price of the products are extremely high (payments are made in US\$), these trigger an unsustainable change in the land use pattern, unacceptable degree/scale of resource harvest from the SRF causing breakdown of the natural resources based production systems and thus food security becomes unstable, which finally results that people creates huge pressures on SRF for meeting the needs.

Conclusion

From the analysis, food security status is not same in all the survey area. Mongla and Sarankhola are much better than Morrelganj and Bhandaria. The local people of Mongla and Sarankhola get spatial locational advantage. There are alternative income source for the people of Mongla and Sarankhola. People can work in Sea Port at daily basis and can fishing in Pasur River in food insecurity period. But local people of Morrelganj don't get the opportunity. They only depend on agriculture and Sundarban Forest resources for their livelihood. Also their livelihood very much dependents on seasonality and suffer food insecurity for four months in every year. As they do not have opportunity to recover from food insecurity, various safety net program should be taken from govt. and non-govt. organizations.

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References

Barrett, C. B. & McPeak, J. G. 2003. "Poverty traps and safety nets". Kluwer Academic Publishers.

- BCAS, GFEP & UNDP, 1994. "Food security, environment and poverty". Dhaka;
- BRAC, 2000, BRAC's Poverty Eradication Programmes Focusing on the Poorest 2001-2005, Dhaka.
- FAO, 2005. "The state of food insecurity in the world".
- Maxwell, D. G. 1995; "Measuring Food Insecurity: The Frequency and Severity of Coping Strategies". IFPRI, FCND Discussion Paper no. 8.
- Migotto, M., Davis, B., Carletto, G. & Beegle, K. 2005. "Measuring Food Security Using Respondents' Perception of Food Consumption Adequacy". ESA Working Paper No. 05-10.
- WFP, 2004, *The Food Security of Bangladesh: Towards a Poverty and Hunger Free Bangladesh*, World Food Programme, Dhaka, Bangladesh.