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FOOD SECURITY SITUATION AMONG VULNERABLE RURAL HOUSEHOLDS: A CASE STUDY OF BIJNOR DISTRICT, UTTAR PRADESH

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Abstract

This paper investigates the food security situation among rural households in Bijnor District of Uttar Pradesh in India. The specific objectives of the study are to ascertain the level of food security among rural households, to identify the coping strategies utilized by the rural households in ensuring food security and to identify the constraints faced by rural households in ensuring food availability. The study is based on the primary data collected through field work of 275 households. The results reveal that the level of food insecurity varied according to socio-economic characteristics of the households. The severity of food insecurity was higher among marginal farmers, agricultural labourers and landless agricultural labourers. To become food secure and in response to food deficit condition, respondents were found to be engaged in multiple employments and adopted a number of other coping strategies. The major constraints militating against food security in the study area are unemployment, finance, debt and number of dependents in the family.

Introduction

Food security is described as access by all people at all times to the food needed for an active and healthy life. Food security is a situation in which people, at all times, have physical and economic access to the sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (Food and Agriculture Organization, 1996). Poverty co-exists with food insecurity and is the main cause of hunger and malnutrition. Poverty exists when there is lack of income, productive malnutrition, illiteracy, homelessness, inadequate housing, unsafe environment, social discrimination, etc. In 2001-03, Food and Agriculture Organization estimated that more than 850 million people all

over the world were undernourished. About 96 per cent of such persons were living in developing countries (FAO, 2006). Malnutrition not only denies people their right to health; it also has serious economic implications.

The concept of food security has been undergoing an evolutionary change during the last 50 years. In the nineteen fifties, food security was considered essentially in terms of production. It was assumed that adequate production will ensure adequate availability of food in the market as well as in the household. In the seventies, it became clear that availability alone does not lead to food security, since those who lack purchasing power will not be able to have access to balanced diets.

Purchasing power again is related to jobs or livelihood opportunities. More recently, it has been becoming evident that even if availability and access are satisfactory, the biological absorption of food in the body is related to the consumption of clean drinking water as well as to environmental hygiene, primary health care and primary education. Finally, even if physical and economic access to food is assured, ecological factors will determine the long-term sustainability of food security systems (Swaminathan, 2001). The World Bank has identified three pillars determining food security as; food availability, accessibility and utilization. Access to and consumption of adequate and appropriate food by households is an important component of food security (Fanta-2 Focus Areas, shtml, 2010).

The household is the logical level to analyze the access to food and intra-household inequalities especially with regard to gender in determining individual food security (Adckoya, 2009). Two types of household food insecurity – chronic and transitory – are widely discussed. Chronic food insecurity is a persistently inadequate diet caused by the continual inability of households to acquire needed food, either through market purchases or through production. Chronic food insecurity is rooted in poverty. The poor people do not have adequate means or “entitlements” (Sen, 1981) to secure their access to food, even when food is available in local market. On the other hand, transitory food insecurity is a temporary decline in a household's access to required food, due to factors such as instability in food prices, production or incomes.

The livelihood approach is useful for understanding food insecurity as it emphasizes the importance of looking at an individual's capacity for managing risks, as well as the external threats to livelihood security

(Chambers, 1989). Recognizing livelihood typologies is a useful construct for comparing livelihood systems between regions. A number of livelihood typologies can coexist and can vary in their geographical extent. (Dixon, et al., 2001). The food security of poor households is dynamic and influenced by a range of factors. There is a constant struggle to meet basic daily needs. Their daily needs consist of more than food; vital non-food needs in terms of a household's resource allocation (Frankenberger, 1996). Livelihood systems imply a concept of sustainable food security, where the benefits of today are balanced with the benefits of tomorrow.

Coping strategies are employed to mitigate the effects of not having enough food to meet the household's needs. Off-farm employment, savings and family networks for sharing are the positive coping strategies while reduction in food consumption, selling assets; reducing expenditures on basic services are negative coping strategies (Tall, 1989). In the time of food crisis, there may be two options regarding food availability: protecting consumption or modifying consumption.

About two third of the Indians are farmers and out of which, a vast majority are small and marginal farmers. Nearly one third of the population especially from rural areas is landless and unskilled agricultural labourers with a large proportion of women. India's small-holder farmers (those owning less than 2.0 ha. of farmland) comprise 78 per cent of the country's farmers, but own only 33 per cent of the total cultivated land; they nonetheless produce 41 per cent of the country's food-grains. Their productivity is somewhat higher than that of medium- and large-size farms. Moreover, their marketable surpluses are increasing. In the nation's food-security interest, such increase must be sustained. These features notwithstanding, smallholder families,

together with the families of landless agricultural workers, constitute the bulk of India's hungry and poor (FAO, 2002/03).

Food security has been a major developmental objective in India since the beginning of planning. India achieved self-sufficiency in food grains in the 1970's and has sustained it since then but the achievement of food grain security at the national level did not percolate down to households and the level of chronic food insecurity is still high. India at present finds itself in the midst of a paradoxical situation: endemic mass-hunger co-existing with the mounting food grain stocks. The food grain stocks available with the Food Corporation of India (FCI) stand at an all time high of 62 million tones against an annual requirement of around 20 million tones for ensuring food security. Still, an estimated 200 million people are underfed and 50 million on the brink of starvation, resulting in starvation deaths. Such a high level of wasting away of human resources should be a cause for concern.

In recent years, there has been a shift in policy focus towards household level food security and per capita food energy intake is taken as a measure of food security. The government of India has been implementing a wide range of nutrition intervention programmes for achieving food security at the household and individual levels. The Public Distribution System (PDS) supplies food items, such as food grains and sugar, at administered prices through fair price shops. There have been a range of food-for-work and other wage employment programmes. Another approach adopted by the government is to target women and children directly; this includes mid-day meal programme for school going children and supplementary nutrition programme for children and women (Radhakrishna, 2005). In spite of these programmes, the reality is that the bottom 30 per cent of the population has not

shown any improvement in cereal and calorie intake in the rural areas despite a significant improvement in their real per capita expenditure. Their per capita calorie intake (1600 to 1700 K.Cal/day) falls short of the required norm. Intra-family food distribution is also inequitable in the rural households and the pre-school children get much less than their physiological needs as compared to adult males and females (Radhakrishna and Reddy, 2002). Thus, it was thought worthwhile to assess the food security situation in these vulnerable rural households for which Bijnor district of Uttar Pradesh has been taken as a case study.

Objectives of the Study

The study aims to achieve the following objectives:

- i) To assess the food security situation among rural households.
- ii) To examine the resource distribution system in terms of entitlement endowment and its impact on the households' food production and supply.
- iii) To examine the relationship between food insecurity and socio-economic conditions of rural households.
- iv) To identify the coping strategies utilized by the households in ensuring food security.
- v) To identify the problems associated with the different aspects of livelihood and to identify the constraints faced by rural households in ensuring food security.

Study Area

Bijnor district of Uttar Pradesh has been chosen as the study area. The study area falls between 29° 0' to 29° 46' North latitudes and 78° 0' to 78° 56' East longitudes. It is a roughly triangular stretch of country with its apex to the

north. Most parts of this district fall under the tarai zone, an area that is backward both politically and industrially. Maize, paddy, mustard, lentils, wheat, sesame and sugarcane are the main crops. Soils are naturally fertile having rich humus content due to accumulated deposits of grasses and foliage. The average rainfall is 1122 mm. The maximum temperature remains 41.90 C and minimum 3.20 C. The district is divided into 5 tehsils and 11 blocks. According to 2011 Census, the district has a population of 3,683,896 and an area of 4,559 sq. km. Nearly 76 per cent population lives in villages. There has been 17.6 per cent growth in population during 2001-2011. The sex ratio in the district is 905. Of the total population, 21 per cent is scheduled caste and scheduled tribes. The literacy rate in the district is 70 per cent. Male literacy is 78.7 per cent while female literacy is only 61.4 per cent. Average size of households in rural areas is 6.4 persons. Economic classification of population shows that 32.7 per cent are cultivators, 24.1 per cent are agricultural labourers, 5.3 per cent are household industry workers and 37.9 cent are other workers (Census of India, 2001). The mainstay of the economy is agriculture. Of the total land holdings, 85 per cent are small and marginal land holdings.

Material and Methods

Data for this study were drawn from the survey of 275 households of vulnerable sections of the village community in Bijnor district during 2010. The sample design adopted for the study was purposeful one, having two stages. In the first stage, selection of villages from the blocks was made randomly. Bijnor district is divided into 11 blocks. From each block 1 village was selected from each category. In this way 11 villages were selected from the whole district (Fig. 1). In the second

stage, the selection of households was made from the selected villages. From each selected village, 5 households of small farmers, marginal farmers, agricultural labourers, landless laborers and rural artisans each were selected randomly. In this way 275 households were selected for in-depth study.

A household with an operational land holding under one hectare is categorized as a marginal farmer's household and with an operational holding between one and two hectares as a small scale farmer's household. Rural artisans include traditional potters, blacksmiths, weavers, carpenters, etc. A questionnaire was designed to collect the relevant information, taking into consideration the indicators of food insecurity among these vulnerable sections of the village community. Sufficient care was taken to make the questionnaire communicable to the respondents. The target respondent was either head of household or his/her spouse. The data collected were analyzed using descriptive and inferential statistics.

Results and Discussion

Characteristics of Respondents

Table 1 shows that of the total sampled households, most of the head of the households were males. Majority of the heads of the families were in the age-group of 25-65 years which implied that they were engaged in the livelihood activities. Caste system is one of the several forms of stratification of the society. Caste-wise distribution shows that most of the small farmers (60.0 per cent) belonged to upper castes. An overwhelming majority of the sampled marginal farmers and rural artisans belonged to backward castes while most of the agricultural and landless labour households belonged to scheduled castes in the study area. The educational status of the respondents in the study area was not very much encouraging as a

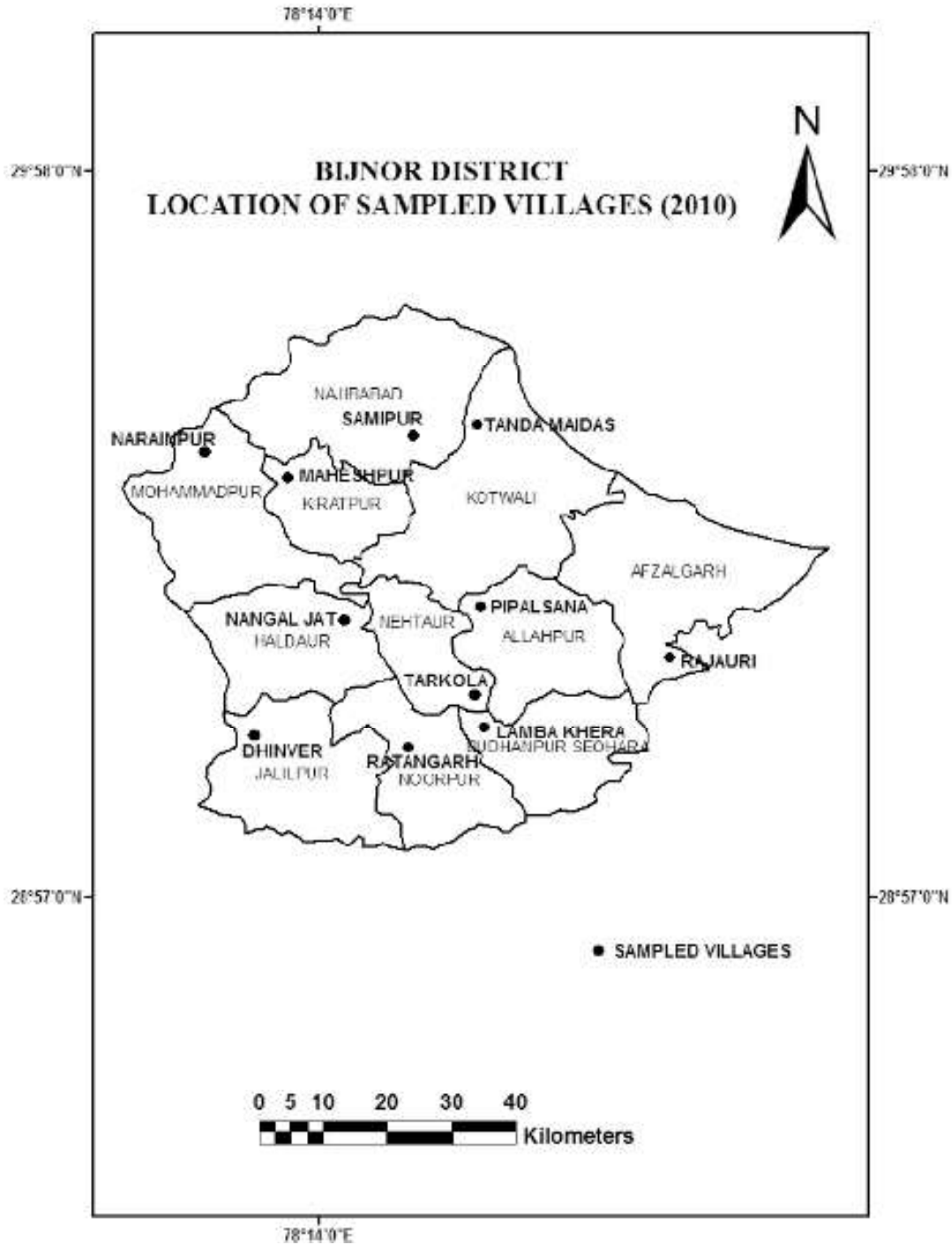


Fig. 1

majority of the sampled heads of the households was illiterate. Only half of the sampled small farmers were educated up to primary level. The literacy factor is directly related to their economic activities. Most of the agricultural labourers, landless labourers and

rural artisans were having big family size (family size being 6-10 members) while majority of small farmers and marginal farmer households were having smaller family size (1-5 members).

Table 1
Bijnor District: Personal Characteristics of the Sampled Heads of the Households

1. Sex-wise distribution					
Sex / Category	Small Farmers N = 55	Marginal Farmers N = 55	Agricultural Labourers N = 55	Landless Labourers N = 55	Rural Artisans N = 55
Male	87.3	65.5	56.3	76.3	71.0
Female	12.7	34.5	43.7	23.7	29.0
2. Age- wise Distribution (Age in years)					
25-35	22.0	34.5	12.3	27.3	53.0
36-45	38.2	23.8	46.5	21.9	13.0
46-55	29.0	25.6	38.2	31.0	20.0
56-65	9.2	12.5	3.0	19.8	14.0
66-75	1.6	3.6	-	-	-
3. Caste-wise Distribution					
Schedule caste	-	-	69.0	63.6	20.0
Other Backward caste	40.0	85.4	31.0	36.4	80.0
Upper caste	60.0	14.6	-	-	-
4. Educational Status					
Illiterate	25.5	42.0	65.4	83.7	92.7
Primary	52.7	31.0	16.3	12.7	7.3
Secondary	21.8	27.0	18.3	3.6	-
5. Family Size (Members)					
1-5	89.0	60.0	20.0	27.2	32.7
6-10	11.0	23.7	67.3	49.1	45.4
Above 11	-	16.3	12.7	23.7	21.9
Average	3.5	6.6	5.9	9.0	6.2

Source: Based on Field Survey (2010)

Note: All figures are in percentage unless specified.

N- Number of Heads of the Households

Occupational characteristics of the sampled households show that all the small farmers were engaged in the agricultural activities. Nearly 67 per cent marginal farmers' households had agriculture as the primary occupation and one-third households had secondary occupation (Table 2). These households were engaged in the non-agricultural activities besides agriculture. More than half of the sampled households of agricultural labourers were engaged in non-agricultural employment. Agriculture being a seasonal activity, these households do not find employment all the year round in the agricultural sector. Most of the landless labourers had non-agricultural occupations. Only 35 per cent worked in the agricultural

sector. It is interesting to note that 20 per cent rural artisans were engaged in agricultural sector (Table 2). It may be concluded from these findings that neither agricultural sector nor non-agriculture sector has full employment opportunities for the rural masses. They do any kind of work which is available for earning their livelihood. Most of the small farmers (58.2 per cent) were engaged for 6 months in the agricultural sector while most of the marginal farmers, agricultural labourers, landless labourers and rural artisans find employment only for three months. For remaining part of the year they remained unemployed or under employed.

The income of the sampled households is low and irregular. Of the total small farmers'

Table 2
Bijnor District: Personal Characteristics of the Sampled Heads of the Households

1. Occupation					
Occupation / Category	Small Farmers N = 55	Marginal Farmers N = 55	Agricultural Labourers N = 55	Landless Labourers N = 55	Rural Artisans N = 55
Agriculture	100.0	67.3	56.4	65.5	20.0
Non-agricultural	-	32.7	43.6	34.5	80.0
2. Extent of Employment in Agriculture					
3 Months	23.6	49.1	52.7	67.3	78.2
6 Months	58.2	38.2	34.5	32.7	21.8
12 Months	18.2	12.7	12.8	-	-
Average	130 days	102 days	99 days	74 days	64 days
3. Monthly Income from all Sources (in rupees)					
1000-2000	-	-	9.0	34.5	14.5
2100-3000	-	-	27.3	29.1	7.3
3100-4000	23.6	40.0	27.3	36.4	78.2
4100-5000	45.5	25.4	18.2	-	-
5100-5000	30.9	34.6	18.2	-	-
Average	4,572	4,445	3,590	2,518	3,136
Per capita income	1306	673	608	280	505
4. Indebtedness					
Under debt	21.8	51.0	65.5	80.0	94.6
Without debt	78.2	49.0	34.5	20.0	5.4

Source: Based on field survey (2010)

Note: All figures are in percentage

N- Number of Heads of the Households

households, 45 per cent had monthly income ranging between Rs. 4100-5000. This shows that agriculture is not a profitable occupation for these farmers in the study area. The cost on inputs is high and out put is low but they have no alternative other than agriculture. Nearly 40 per cent of the marginal farmers had monthly income between Rs. 3100-4000. More than half of the agricultural labourers had low income ranging between Rs. 2100 and Rs. 4000. The situation was worse in the case of landless laborer's households (36 per cent) which had very low income of Rs. 1000-2000. More than three fourth rural artisan households had monthly income of Rs 2100-3000 (Table 2). Indebtedness is another important factor which influenced the food security of the respondents.

Table 2 reveals that the extent of the indebtedness was highest in the case of rural artisans (95 per cent) followed by landless labourers (80 per cent), agricultural labourers (65 per cent), and marginal farmers (51 per cent, Table 2).

Food Accessibility in Rural Households

Household food security is a function not only of availability of food but also of the purchasing power of the household. It has now been well established that at the global level availability of food is not a problem. Even at our national level, availability of food grains is not the real problem; it is prevailing poverty amongst a large number of households that comes in the way of achieving households' food

Table 3
Bijnor District: Sampled Households' Accessibility to Food Items

Food Items	Accessibility														
	Small Farmers H = 55			Marginal Farmers H = 55			Agricultural Labourers H = 55			Landless Labourers H = 55			Rural Artisans H = 55		
	A	O	N	A	O	N	A	O	N	A	O	N	A	O	N
Fruits	57.2	25.8	17.0	-	58.7	41.3	-	15.7	84.3	-	2.7	97.3	-	72.0	8.0
Vegetables	95.7	4.3	-	84.0	16.0	-	68.0	32.0	-	34.2	65.8	-	67.7	32.3	-
Meat	46.6	36.4	16.9	27.0	73.0	-	-	12.0	88.0	-	25.7	74.3	41.2	41.2	18.7
Grains	80.9	19.1	-	90.5	9.5	-	53.0	39.8	7.2	26.5	49.3	24.2	78.0	22.0	-
Fish	27.0	73.0	-	17.8	63.0	19.2	-	8.0	72.0	-	17.9	82.1	5.2	37.2	57.6
Milk	73.8	26.2	-	93.0	7.0	-	-	23.5	76.5	-	31.1	68.9	24.1	58.3	17.6
Egg	55.0	45.0	-	40.0	53.2	6.8	-	12.5	87.5	-	6.3	93.7	12.6	42.4	45.0

Source: Based on field survey (2010)

Note: All figures are in percentage

A- Always, O- Occasionally, N- Never

H- Number of the Households

security.

There may be abundance of food but it is of no help to the poor households if they have no access to that. "There is no assurance of deliverance from hunger unless those charged with the tasks of governing him (the poor) take conscious and deliberate steps to channel that abundance in his direction so that he can absorb the little he needs" (Vanugopal, 1992). Food access is influenced by the food availability through the behaviour of prices. It is further determined by the ability of households to obtain food from their own production and stocks, from the market and from other sources. These factors are in turn determined by the resource endowment of the households, which defines the set of productive activities they can carry out in meeting their monetary requirements and fulfilling the objectives of food security (Omonona and Agoi, 2007). Table 3 shows that vegetables, grains and milk were always accessible to the small farmers. These farmers were not having constant access to fruits, meat, fish and eggs while fruits and fish were never accessible to some of the small farmers. In the case of marginal farmers, fruits, fish and eggs were occasionally accessible to them. The accessibility of food items to

agricultural and landless labourers households was discouraging as most of them did not have access to protein and energy items. Rural artisan households had access to these items occasionally. This indicated that cheaper items which were mostly personally produced from home gardens were more accessible. This portends a potential for malnutrition and a clear indication of food insecurity in the study area.

Food Affordability in Rural Households

Affordability of food refers to the price of a particular food and the relative price of alternative or substitute foods. Affordability of food is also influenced by the budget constraints faced by consumers, who must consider not only the prices of different foods to meet their food needs, but also the prices of other necessities like housing, clothing, and transportation, etc (USDA, 2009). Affordability implies that an individual has enough money to buy sufficient, safe and nutritious food to meet one's dietary needs.

Table 4 reveals that vegetables, grains and milk were the most affordable food items to small farmers' households because of its ease of accessibility while the respondents occasionally afforded other food items, while

Table 4
Bijnor District: Sampled Households' Affordability of Food Items

Food Items	Affordability														
	Small Farmers H = 55			Marginal Farmers H = 55			Agricultural Labourers H = 55			Landless Labourers H = 55			Rural Artisans H = 55		
	A	O	N	A	O	N	A	O	N	A	O	N	A	O	N
Fruits	32.0	68.0	-	6.2	93.8	-	-	30.3	69.7	-	5.7	94.3	10.2	86.7	3.1
Vegetables	97.0	3.0	-	80.6	19.4	-	17.0	44.5	38.5	11.4	30.2	58.4	85.3	10.2	4.5
Meat	28.5	71.5	-	27.3	72.7	-	-	32.2	67.8	-	13.7	86.3	5.4	87.0	7.6
Grains	75.4	24.6	-	68.2	31.8	-	21.2	38.8	40.0	9.8	19.5	70.7	70.2	29.8	-
Fish	21.8	68.2	10.0	10.9	50.1	39.0	-	11.4	88.6	-	2.2	97.8	13.6	86.4	-
Milk	42.0	58.0	-	33.4	66.6	-	2.3	43.2	54.5	-	38.1	61.9	27.5	72.5	-
Egg	23.3	62.1	14.6	16.5	55.8	27.7	-	24.0	76.0	-	11.2	88.8	18.0	71.0	11.0

Source: Based on field survey (2010)

Note: All figures are in percentage

A- Always, O- Occasionally, N- Never

H- Households

fish was not available to 10 per cent households and egg was not affordable to 14.6 per cent households. Vegetables and grains are the only affordable food items for the marginal farmers' households. Most of the households occasionally afforded fruits, meat, fish, milk and eggs. Nearly 39 per cent marginal farmers' households' never afforded fish and another 27.7 per cent never afforded eggs. Among agricultural labourers households, 70.0 per cent never afforded fruits. It should be noted that figures on accessibility are generally higher than those for affordability. This confirms the view that accessibility does not always transform to affordability and it also indicates social stratification among the respondents.

Only 17 per cent of agricultural labourers' households could always afford vegetables, 44.5 per cent occasionally afforded and 38.5 per cent could never afford vegetables. Most of them (67.8 per cent) could never afford meat, while only 32.2 per cent occasionally afforded meat. Grains were never affordable food item to 40.0 per cent agricultural labourers households, 38.8 per cent households afforded it occasionally and only 21.2 per cent were in the position of having its affordability constantly. Fish was never affordable to majority of the

sampled agricultural labourers households (88.6 per cent) and only 11.4 per cent occasionally afforded it. More than half of these households disclosed that they could never afford milk, 43.2 per cent somehow managed to afford milk occasionally and only 2.3 per cent could always afforded it.

The condition of affordability of food items was worse in the case of landless labourers households since most of these households could never afford the food items except some vegetation and grains. Most of the rural artisan households occasionally afforded protein and energy food. Thus, it can be concluded from these findings that the households were not food secure since food security entails access to food both in quantity and quality at all times. It is also revealed that figures of accessibility are generally higher than those for affordability. It leads to the conclusion that accessibility does not always transform to affordability due to economic stratification among the respondents. The results indicate food insecurity among landless labourers households and agriculture labourers households is high since most of these households disclosed 'never afford' the food items always.

Coping Strategies Adopted by the Rural Households

Table 5 shows the coping strategies adopted by the households for food security. The table reveals that the small farmers occasionally go to get food from public distribution system. They are food secure, because they did not always use any coping strategies to ensure food. About 22.0 per cent marginal farmers' households always used public distribution system as a coping strategy to ensure food, 12.7 per cent always used

unconventional food such as fermented left over rice and nearly 14.0 per cent occasionally borrowed money for food. Agricultural labourers households and landless labour households used almost all possible coping strategies to ensure food. They always depended on the public distribution system to purchase food items on fairly subsidized rates. About 79.0 per cent agricultural labourers households and 95.0 per cent landless labour households always used public distribution system as a coping strategy. Small farmers and

Table 5
Bijnor District: Coping Strategies used by the Sampled Households for Food security

Coping Strategies	Small Farmers H = 55			Marginal Farmers H = 55			Agricultural Labourers H = 55			Landless Labourers H = 55			Rural Artisans H = 55		
	A	O	N	A	O	N	A	O	N	A	O	N	A	O	N
Borrowing money	-	-	100	-	13.9	86.1	27.0	61.4	11.6	39.0	55.2	5.8	-	10.7	89.3
Public distribution	-	72.0	28.0	21.8	78.2	-	79.3	20.7	-	95.0	5.0	-	35.8	64.2	-
Skipping meals	-	-	100	-	-	100	-	10.7	89.3	-	41.0	59.0	-	8.9	91.1
Unconventional food	-	-	100	12.7	73.7	13.6	22.6	56.2	21.2	40.9	54.2	4.9	5.5	29.9	64.6
Reduction in food quantity Served	-	-	100	-	-	100	23.3	49.2	27.5	35.1	62.0	2.9	-	19.0	81.0
Reduction in food consumption	-	-	100	-	-	100	2.6	46.8	50.6	15.5	45.2	39.3	-	-	100
Skipping meals for whole day	-	-	100	-	-	100	10.6	25.1	64.3	16.5	42.1	41.4	-	-	100
Animal Husbandry	100	-	-	100	-	-	17.2	-	-	9.0	-	-	2.7	-	-
Child labour	-	-	-	-	-	-	34.8	-	-	51.2	-	-	14.3	-	-

Source: Based on field survey (2010)

Note: All figures are in percentage

A- Always, O- Occasionally, N- Never

H- Households

marginal farmers produce grains on their farm and they keep some stock and therefore they occasionally used public distribution system. The agricultural labourers, landless labourers and artisans have to purchase grains from the market and hence they always try to use this facility in order to get the grains at subsidized rate. Since they have got large families, therefore they have used multiple strategies.

Prevalence of unemployment, under employment and irregular income have resulted in borrowing money for food. Poor people borrow money from the money lenders at an exorbitant rate. This coping strategy was used by 27.0 per cent agricultural labour households and 39.0 per cent landless labour households. Unconventional food strategy was always used by 22.6 per cent agricultural labour households and 40.9 per cent landless labour households. The other frequently used coping strategies by these households were reduction in food served (23.3 per cent agricultural labour households and 35.1 per cent landless labour households), reduction in food consumption by skipping lunch or dinner (2.6 per cent agricultural labourers households and 15.5 per cent landless labourers households) and skipping meal for whole day (10.6 per cent agricultural labourers households and 16.5 per cent landless labourers households).

Similarly, rural artisan households frequently used public distribution system (35.8 per cent) and unconventional food (5.5 per cent) as the coping strategies to ensure food. Animal husbandry is the major income supplementing activity among the small and marginal farmers. All the small and marginal farmers' households were engaged in animal husbandry to generate additional income. The agricultural labourers households (17.2 per cent), the landless labourers households (9.0 per cent) and the rural artisan households (2.7 per cent) also kept animals for selling milk in

the market to supplement their meager income. Acute financial crisis forced these households to send their children to work in the labour market. Field survey revealed that 34.8 per cent agricultural labourers households, 51.2 per cent landless labourers households and 14.3 per cent rural artisans households engaged their children in different income generating activities to ensure food security. Thus, this analysis shows that the sampled respondents have to adopt many coping strategies as they are not educated, skilled and fully employed. Since they have large families, it becomes necessary for them to adopt coping strategies.

Conclusion

The study has analyzed the food security situation and coping strategies used for ensuring food security among the vulnerable rural households in Bijnor district of Uttar Pradesh. Most of the households were not food secure and occasionally afforded food items like meat, fish, fruits, egg and milk while having only partial access to other food items. Increases in food grain prices not only weigh more in their living cost, but the rises are generally higher for the poor who are, unable to make bulk purchases or stock up food grains during the seasonal fall in prices. Generally, they have to buy the day's food with the day's wage. To meet the food needs of the households, respondents engaged themselves in multiple employments and adopted a number of other strategies.

The severity of food insecurity was higher among marginal farmers, agricultural labourers and landless agricultural labourers. The small farmers and marginal farmers were engaged in animal husbandry to ensure their food security since agriculture was not profitable to them. Most of the agricultural labourers also engaged themselves in the non-agricultural sector within the villages because

they did not find work in the agricultural sector all the year round. The landless labour households also engaged their children to supplement their income to ensure food security while the rural artisans go to nearby urban areas daily to find work.

Based on the findings, the study suggests that agricultural and landless labourers should be provided employment opportunities in food processing units. The rural artisans should be provided technical assistance to develop equipments to improve agricultural efficiency and competitiveness especially in value addition or post harvesting technologies. Awareness about low cost nutritious food items and availability of food grains through public distribution system should be strengthened. Non-governmental organizations and welfare societies can play an important role in these processes. Apart from the necessary immediate relief in crisis, through write off of loans/interest, an appropriate Minimum Support Prices for agricultural produce of the small and marginal farmers should be ensured. There is urgent need for a planned and vigorous promotion of low-cost, low-risk, high nutrition, holistic and sustainable farming systems to stem the rising tide of small and marginal farmers' indebtedness, distress and food insecurity.

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References

Adekoya, A.E. (2009): "Food Insecurity and Coping Strategies among Rural Households in Oyo State, Nigeria", *Journal of Food, Agriculture & Environment*, vol.7 (3&4) pp.

187-191

Chambers.R. (1989): "Vulnerability, Coping and Policy". *IDS Bulletin*, Vol. 20(2), Sussex, pp.1-7

Dixon, J., Gulliver, A and Gibbon, D. (2001): *Farming Systems and Poverty; Improving Farmers' Livelihood in Changing World*, FAO and World Bank, Washington D.C., U.S.A, pp.3-4

Fanta-2 Focus Area. (2010): "Household Food Consumption". <http://www.fantaproject.org/focus/household.shtml>, pp. 6-7

Food and Agriculture Organization. (1996): *Food Availability and Access to Food*, International Conference on Malnutrition Manual, Rome, pp.7-15

Food and Agriculture Organization of United Nations. (2002/03): *Small Holder Farmers in India: Food Security and Agricultural Policy*, RAP Publication, Thailand, pp. 3-4

Food and Agriculture Organization. (2006): "Eradicating World Hunger- taking stock ten years after the World Food Summit", *The State of Food Insecurity in the World*, Food and Agriculture Organization of the United Nations, Rome, Italy, pp. 8-10

Frankenberger, T. (1996): "Measuring Household Food Security: An Approach for Reducing Absolute Poverty". *CARE*, USA, pp. 4-5

Omonona, BT and Agoi, GA. (2007): "An Analysis of Food Security Situation among Nigerian Urban Households: Evidence from Lagos State, Nigeria", *Journal of central*

European Agriculture, Vol. 8, No. 3, pp. 397-406

Radhakrishnan, R. (2005): "Food and Nutrition Security of the Poor: Emerging Perspectives and Policy Issues", *Economic and Political Weekly*, Vol. 40, No. 18, April, pp. 1817-1818.

Radhakrishna, R and Reddy, K.V. (2002): Food Security and Nutrition: Vision 2020, http://planningcommission.nic.in/reports/genrep/bkpap2020/16_bg2020.pdf, pp. 6-7

Sen, A.K. (1981): *Poverty and Famines: An essay on Entitlement and Deprivation*, Oxford: Clarendon Press, pp. 154-155

Swaminathan, M. S. (2001): "Food Security and Sustainable Development", *Current Science*, Vol. 81, NO. 8, pp. 948-954

Tall, H. (1989): "How farmers Cope with Risk and Stress in Rural Gambia", *IDS Bulletin*, Vol.2, No.2, University of Sussex, Brighton, UK, pp. 16-22

United States Department of Agriculture. (2009): "Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences", *Report to Congress*, Economic Research Service, pp. 2-7

Vanugopal, K R. (1992): *Deliverance from Hunger: The Public Distribution System in India*, Sage Publications, New Delhi, pp. 129-133

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