

A Comparison of Food Consumption Pattern in Rural and Urban Areas of Bangladesh between 2005 and 2010

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ABSTRACT: This study aims to know the food consumption pattern of rural and urban areas of Bangladesh to make a comparison of calorie and protein intake in 2005 and 2010. The study is mainly based on desk research with data and information from secondary source (Household Income and Expenditure survey data in 2005 and 2010, Statistical Yearbook of Bangladesh in 2008.). HIES 2010 assessed that rice, potato and vegetable were consumed more in rural areas than in urban areas. Other food items like pulses, milk and milk products, edible oils, meat, eggs, fish, spices, fruits, sugar and miscellaneous food items were consumed more in urban area. Along with food consumption, calorie and protein intake are the two main indicators to determine the nutritional status for all level of people. In 2010, the average per capita per day calorie intake was 2344.6 kcal in rural areas compared to 2244.5 kcal in urban areas while, the average per capita per day protein intake was 65.24 g in rural areas and it was 69.11 g in urban areas. Our study shows that average calorie and protein intake had a gradual increasing trend over the years in rural and urban areas due to the growing awareness of people about health.

Keywords: Bangladesh, food security, rural, urban

Introduction

Bangladesh is an agro-based country. With intensive and integrated farming, total food grain production has shown an increasing trend over the last two decades. It produces major agricultural crops such as rice, wheat, jute, potato, pulses, oilseeds, sugarcane, tea and tobacco. Though Bangladesh still has to import large amount of food grain, it is approaching food security and better livelihood and socioeconomic condition (Sharmin *et al.*, 2010).

Food is essential for survival and adequate intake of balanced food with required nutrients is vital for leading a healthy and productive life. Every food item has its own calorie, protein and other nutrient contents which are essential for health. Nutritional values vary over different food items. It is important therefore for individuals to consume a balanced diet to meet calorie, protein and other nutritional needs.

In Bangladesh, the nutritional values vary in rural and urban areas. In rural areas, a large segment of the population fails to consume food items with the required composition and at the required level to fulfill the nutritional requirements. Actually in rural areas, the lack of proper nutritional knowledge and the scarcity of money to buy nutritious foods are the reasons many people failed to get a balanced diet. In urban areas, the food consumption pattern is quite different. People are

able to buy different kinds of nutritious foods. For being educated and have proper knowledge in nutrition, it is easy for them to choose the balanced food basket. But in urban areas, obesity and overweight is another emerging problem (Shafique *et al.*, 2006).

For the last three decades, the Government of Bangladesh has endeavoured to improve the quality of life of the people through planned development efforts and by reducing the poverty. As an outcome of the development activities, Bangladesh has made commendable progress in terms of reduction of human poverty and has received universal appreciation for attaining success in alleviation of human poverty in education, health and nutrition and has also achieved the targets of Millennium Development Goals (MDGs) (World Bank, 2007). Recently, there has been a rapid growth in manufacturing industries which offer a wide range of exportable goods such as leather goods and readymade garments. Through intensive farming and its management, the country is approaching better livelihood and socioeconomic condition. In such an improving livelihood condition, food security and its sustainability as well as food consumption patterns need to be addressed in Bangladesh.

The study aims to know about the food production, consumption and nutritional status of urban and rural people in Bangladesh.

Methodology

The study is based on desk research. The following research reports and materials were used to prepare this paper: Household Income and Expenditure Survey data in 2005 and 2010, Statistical Yearbook of Bangladesh in 2008, related research reports and journal articles on food security from 2005 to 2008. Data are here tabulated in tables and chart plotted.

Food consumption pattern in rural and urban areas of Bangladesh

Domestic production and import of food grain

Bangladesh has made a remarkable progress in the production of major agricultural crops and is approaching food self-sufficiency. Although aggregate domestic production has been doubled since the last three decades, per capita availability of food is declining due to the population growth. For that, Bangladesh still has to import food grain.

Table 1 shows the scenario of the domestic production and import of food grain during the period of 1998-99 to 2007-08.

Table 1: Domestic production and import of food grain in Bangladesh, 1998-2008

Year	Rice (mmt)	Wheat (mmt)	Maize (mmt)	Total (mmt)	Share of rice to total food grain (%)	Total import of food grain (mmt)
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1998-99	19.905	0.1908	-	21.81	91	5.21
1999-2000	23.067	0.1840	-	24.91	92	2.10
2000-01	25.087	0.1670	0.0149	26.91	93	1.56
2001-02	24.300	0.1606	0.0152	26.06	93	1.80
2002-03	25.188	0.1507	0.0175	26.87	94	3.22
2003-04	26.190	0.1253	0.0241	27.64	94	2.80
2004-05	25.157	0.0976	0.0356	26.49	95	3.37
2005-06	26.553	0.0735	0.0522	27.79	96	2.56
2006-07	27.321	0.737	0.065	28.112	97	2.42
2007-08	31.97	0.956	0.817	33.743	95	3.47

Source: BBS, 2008 and Data Base on Food Situations (FAO), 2008.

Bangladesh had to import food grain annually to meet the deficit of food requirement and it has increased since 2002-03. However, production of rice was 31.97 million m. tons in 2007-08 compared to 27.32 million m.tons in 2006-07. The production of wheat was 0.96 million m. tons in 2007-08 compared to 0.74 million m. tons in 2006-07. Recently, policy makers and producers have paid attention on the production of wheat. The government also encourages wheat production because it shares a major part of food grain import and also contributes a major share of scarce foreign resources. Wheat consumption is also encouraged on nutritional grounds, as it is a cheap source of calorie and protein. From agro-economic and economic point of view, wheat production has its potential. Wheat is grown during the dry months of the year and it requires less irrigation input than rice. On the other hand, the production of pulses showed negative growth rate and yet it is an important source of protein for low-income group (Sharmin *et al.*, 2010).

Nowadays, farmers are more interested to produce rice and wheat than pulses. This could be seen from the report of Bangladesh Bureau of Statistics, (2008) that the production of pulses in 2006-07 was 0.25 million m. tons compared to 0.33 million m. tons in 2003-04.

Food consumption and nutritional status

Type, quantity and composition of different foods consumed in a given culture form the food consumption pattern of a society. The relative importance of different foods is also reflected in that pattern. It is also important to know how individual foods are combined to make a given meal. In rural Bangladesh, people usually consume three meals in a day- rice with vegetables, curry (with fish or meat) and pulses. Recently, wheat consumption is also increasing.

In urban areas, wheat consumption is more common and people generally have their breakfast with homemade bread or bread prepared from wheat flour. The people in urban areas know more about the better diet than the rural people and they consume wheat more from economic and nutritional point of view. It is difficult to identify a typical consumption pattern for both urban and rural areas. This is because the cooking pattern, volume and composition of foods vary in different areas. It also depends on the economic and social status of people. The best possible way to ascertain the consumption patterns of different classes of people is to conduct properly designed food consumption surveys. The reports on Household Income and Expenditure Survey

(HIES, 2005; HIES, 2010) of Bangladesh provided detail information about the consumption of different food items by rural and urban people. A detail list of different food items and quantities consumed by rural and urban people is given in **Figure 1** and **Table 2**.

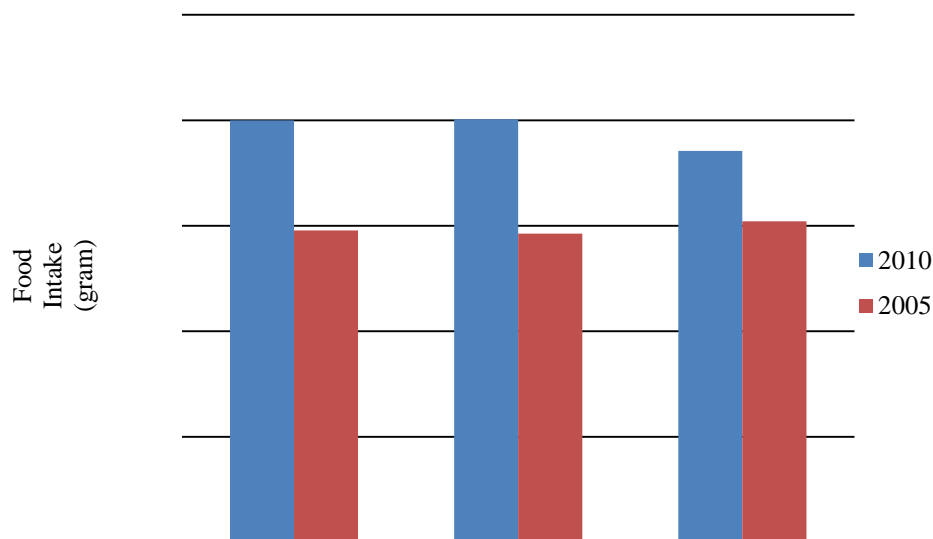


Figure 1: Average food intake (g) by residence

Table 2: Average per capita per day food intake (gram) by residence

Food Items	2010			2005		
	National	Rural	Urban	National	Rural	Urban
Total	1000.0	1000.5	985.5	947.7	946.3	952.1
CEREALS	463.9	485.6	402.9	469.2	485.6	419.3
Rice	416.0	441.6	344.2	439.6	459.7	378.5
Wheat	26.0	23.3	33.6	12.1	8.0	24.1
Others	21.9	20.7	25.1	17.5	17.9	16.3
POTATO	70.3	71.5	66.7	63.3	61.9	67.5
VEGETABLES	166.1	170.0	155.0	157.0	156.5	158.7
Leafy vegetables	36.1	36.1	36.3	43.4	43.8	42.2
Others	129.9	133.9	118.6	113.6	112.7	116.5
PULSES	14.3	13.2	17.2	14.2	12.7	18.6
Masoor	6.7	4.8	12.2	8.3	6.2	14.7
Khesari	1.3	1.5	0.7	2.0	2.4	0.9
Others	6.2	6.9	4.3	3.9	4.1	3.0
MILK/MILK PRODUCT	33.7	31.8	39.2	32.4	31.0	36.6
EDIBLE OILS	20.5	18.3	26.6	16.5	14.3	22.9
Mustard	2.1	2.5	0.8	3.8	4.6	1.5
Soyabean	18.3	15.6	25.8	12.6	9.6	21.3
Others	0.1	0.1	0.1	0.1	0.1	0.1
MEAT,POULTRY,EGGS	26.2	20.5	42.2	20.8	17.6	30.7

Mutton	0.6	0.5	0.9	0.6	0.6	0.7
Beef	6.8	4.7	12.5	7.8	6.4	12.0
Chicken/Duck	11.2	9.0	17.4	6.8	5.8	10.1
Eggs	7.2	5.8	10.9	5.2	4.4	7.4
Others	0.4	0.4	0.5	0.4	0.4	0.5
FISH	49.5	45.8	59.9	42.1	39.7	49.6
CONDI.& SPICES	66.0	64.8	69.3	53.4	50.2	63.1
Onion	22.0	20.2	27.8	18.4	16.1	25.3
Chilies	10.5	10.8	9.8	9.7	9.7	9.9
Others	33.3	33.8	31.7	25.3	24.4	27.9
FRUITS	44.7	42.6	50.4	32.5	32.4	32.9
SUGAR/GUR	8.4	7.4	11.3	8.1	7.5	9.7
Sugar	7.4	6.2	10.7	6.1	5.1	9.0
Gur	1.0	1.2	0.6	2.0	2.4	0.7
MISCELLANEOUS ITEMS*	36.5	33.6	44.9	38.2	36.9	42.5

*includes soft drinks, breads, biscuits, betel nut, betel leaf etc. Source: HIES, 2005 & 2010.

In 2010, the average quantity of food items consumed was estimated to be at 1,000 gram per capita per day at the aggregate level. At the national level, it was 1000.0 gm/capita/day and 947.7 gm/capita/day in 2010 and 2005, respectively. In rural areas, the average food intake was 1000.5 gm/ capita/day and 946.3 gm/ capita/day in 2010 and 2005, respectively. In urban areas, the average food intake shows fluctuating trend over the period from 1995-96 to 2010. According to HIES 2010 report, the average food intake for that year was estimated to be at 985.5 gram/capita/day, an increase of 3.34 percent over 2005. In the cereals group, the per capita per day intake was recorded at 463.9 gram in which rice contributed the most significant portion-416.0 gram, others were occupied by wheat and other cereals. Now people eat more wheat for its lower price compared to rice. The national level consumption of other food items like potato, vegetables, milk and milk products, meat, poultry, egg, fish and fruits, pulses, spices, sugar etc. increased in 2010 over 2005.

The food consumption patterns in rural and urban areas were totally different. The data in 2005 shows that cereals were the only food item that was consumed significantly more in the rural areas, recorded at 485.6 gram per capita per day compared to 419.3 gram in the urban areas. While in 2010 the consumption of cereals was the same as before in rural area but in urban area, it declined to 402.9 gram. The consumption of rice declined both in urban and rural areas to 441.6 gram and 344.2 gram, respectively. The consumption of wheat increased to 23.3 gram and 33.6 gram in rural and urban regions.

The consumption of vegetables in urban areas was lower due to its higher prices. Another cause is that people in urban area generally prefer to eat meat, fish, egg and milk compared to vegetables. HIES (2005, 2010) reports showed that the consumption of vegetable in rural area increased from 156.5 gram to 170.0 gram in 2010. On the contrary in urban area, it showed a decreasing trend. The consumption of vegetables declined from 158.7 gram (2005) to 155.0 gram

in 2010. People in rural area like to eat pulses compared to the people of urban area. It is a cheaper source of protein and has good availability in rural areas. The rural people tend to avoid the expensive food items such as meat, fish and eggs. In urban area, there was a growing awareness of drinking milk and eating milk products that are available to them. In 2010, the per capita per day milk consumption was 39.2 gram in urban area, an increase of 2.6 gram from 2005. In rural area, the trend was also increasing because nowadays people are more educated and wanted to have a balanced diet. It shows that the per capita per day consumption of milk in rural area was 31.8 gram (2010), compared to 31.0 gram in 2005. The consumption of edible oils increased both in rural and urban area. In urban area, the people are habituated to eat the expensive food items like meat, fish and egg regularly. In urban area, the per capita per day consumption of meat, fish and egg was 42.2 gram in 2010, compared to 30.7 gram in 2005. But in rural area, there was no change for the consumption trend. The per capita per day consumption of those food items was 20.5 gram in 2010 and 17.6 gram in 2005. The per capita per day consumption of fish increases both in rural and urban areas. The per capita per day consumption of fish in urban area was 59.9 gram in 2010. There was an increase of 10.3 gram from 2005.

People in rural areas prefer spicy foods. The per capita per day consumption of spices increased from 50.2 gram to 64.8 gram in 2010. The people in urban area however eat less spicy foods as they are concern about their health. A large portion of the young generation eats less spicy fast foods. The consumption of sweets and miscellaneous food items increased in urban areas compared to rural areas. The per capita per day consumption of sugar increased in urban areas from 9.7 gram to 11.3 gram in 2010. In rural areas, it increased only by 0.1 gram.

Intake of calorie

The unit of calorie measures the value of food energy intake. Every food item has its own calorie value. Total calorie intake is derived from total consumption of food and presented on a per capita per day basis. The average intake of calorie in 2005 and 2010 is presented in **Figure 2** and **Table 3** along with urban-rural breakdown.

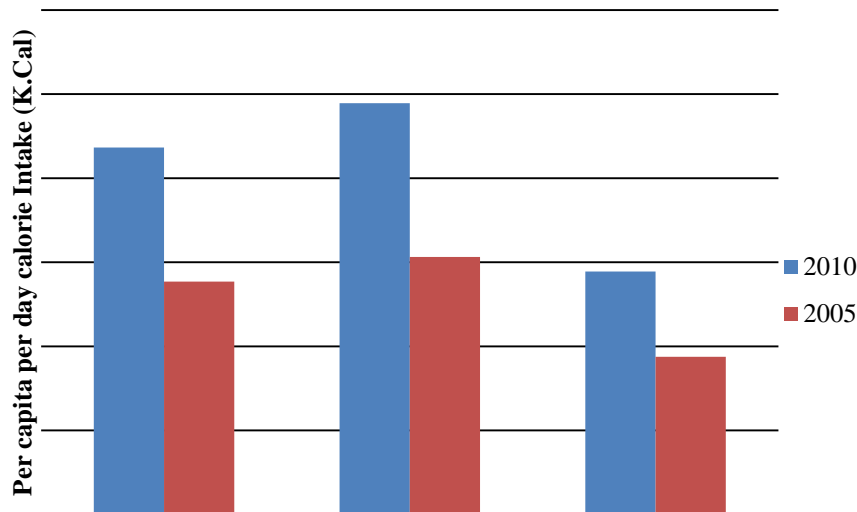


Figure 2: Average per capita per day calorie (K. cal) intake by residence

Table 3: Average per capita per day calorie (K. Cal) intake by residence

Survey Year	Residence		
	National	Rural	Urban
2010	2318.3	2344.6	2244.5
2005	2238.5	2253.2	2193.8

Source: HIES, 2010

At national level, the average calorie intake was estimated to be at 2318.3 kcal per capita per day in 2010, compared to 2238.5 kcal in 2005. A similar pattern is also noticed in the rural and urban areas. In rural area, the calorie intake was 2344.6 kcal and 2253.2 kcal in 2010 and 2005, respectively. In urban areas, the intake of calorie was 2244.5 kcal and 2193.8 kcal per capita per day in 2010 and 2005, respectively.

Table 4 represents the food energy (kcal) derived from major individual food items in rural and urban areas. The table further shows that the rural people on average received 2344.6 kcal per capita per day whereas the urban people's average intake was 2244.5 kcal per capita per day. This is mainly due to the fact that the rural people consume more rice on average (which is calorie rich) than the urban people. In fact, the rural people did more physically labour intensive work than the urban people. So, they need more calories. Both the rural and urban people obtained most of their calories from rice (1186.8 kcal in urban area and 1525.1 kcal in rural area).

Table 4: Per capita per day calorie intake by food items and residence

Food Items	2010		2005	
	Rural	Urban	Rural	Urban
TOTAL	2344.6	2244.5	2253.2	2193.8
CEREALS	1691.7	1408.4	1693.9	1462.7
Rice	1525.1	1186.8	1592.9	1311.6
Wheat	79.6	114.6	27.3	83.7
Other	86.9	107.0	73.7	67.4
POTATO	69.4	64.7	60.1	65.5
VEGETABLES	91.1	83.2	87.2	84.9
Leafy vegetables	20.6	20.7	25.0	24.0
Others	70.6	62.5	62.2	60.9
PULSESES	46.7	60.0	44.7	64.6
Masoor	16.4	41.9	21.3	50.5
Khesari	5.2	2.5	8.4	3.1
Others	25.1	15.7	15.0	11.0
MILK/MILK PROD	25.2	33.5	31.7	40.2
EDIBLE OILS	164.3	239.7	129.0	206.3
Mustard	22.7	6.9	41.7	13.3
Soyabean	140.7	231.8	86.5	192.2
Others	0.9	1.0	0.8	0.8
MEAT, OULTRY,EGGS	26.7	53.9	22.5	39.1

Mutton	0.6	1.1	0.7	0.8
Beef	5.4	14.3	7.3	13.7
Chicken/duck	10.0	19.0	6.4	11.1
Eggs	10.2	19.0	7.7	12.9
Others	0.5	0.6	0.4	0.6
FISH	59.4	85.1	51.6	70.2
CONDI. & SPICES	67.4	69.1	51.6	63.9
Onion	10.1	13.9	8.1	12.6
Chilies	15.2	13.7	13.5	14.3
Others	42.1	41.5	30.0	37.0
FRUITS	28.9	37.1	23.5	23.7
SUGAR/GUR	29.4	44.8	30.0	38.7
Sugar	24.6	42.4	20.4	35.9
Gur	4.8	2.4	9.6	2.8
MISCELLANEOUS ITEMS*	44.4	65.0	27.4	34.0

* Includes tea, soft drinks, bread, biscuits, betel nut, betel leaf, etc

Source: HIES, 2010.

In urban area, the rest portions of the calories were from potato (64.7 kcal), vegetables (83.2 kcal), pulses (60.0 kcal), milk and milk products (33.5 kcal), edible oils (239.7 kcal), meat and eggs (53.9 kcal), fish (85.1 kcal), spices (69.1 kcal), fruits (37.1 kcal), sugar (44.8 kcal) and miscellaneous items (65.0 kcal). In rural area, people consumed potato (69.4 kcal) and vegetables (91.1 kcal) more than urban people. Other calorie enriched food items were pulses (46.7 kcal), milk and milk products (25.2 kcal), edible oils (164.3 kcal), meat and eggs (26.7 kcal), fish (59.4 kcal), spices (67.4 kcal), fruits (28.9 kcal), sugar (29.4 kcal) and miscellaneous items (44.4 kcal).

Intake of protein

Protein is the most important element of food. It is essential for health. It comes from the consumption of protein enriched food items. **Figure 3** and **Table 5** show that the average daily intake of protein has steadily increased over the years. At the national level, per capita per day protein intake was 62.52 g in 2005 and this has increased to 66.26 g in 2010.

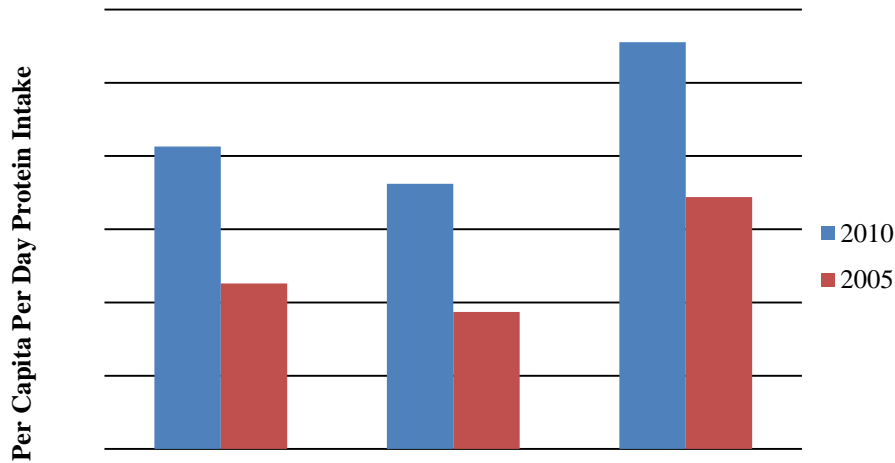


Figure 3: Per capita per day protein intake (gram)

Table 5: Average per capita per day intake of protein (gram)

Survey Year	Residence		
	National	Rural	Urban
2010	66.26	65.24	69.11
2005	62.52	61.74	64.88

Source: HIES, 2010.

In the rural areas, per capita per day intake of protein increased dramatically from 61.74 g to 65.24 g in 2010. In the urban areas, the scenario is also the same. It indicates that people were more conscious than before about better diet and good health.

Table 6 shows the per capita per day intake of protein by food items in rural and urban areas in 2005 and 2010. It shows that the protein-enriched foods are consumed more in urban areas than rural areas. In 2010, the per capita per day protein intake was 69.11 g in urban areas while it was 64.24 g in rural areas. Both in urban and rural areas, the major portion of protein people got were from cereals-in rural areas 36.61 g (56.1 percent) and in urban areas-31.04 g (44.9 percent) in 2010. Within cereals, rice was consumed more in both urban and rural areas. Wheat and other cereal related foods supply the rest amount of protein. Fish, meat and eggs are the best sources of protein. The consumption of these food items has shown an increasing trend both in rural and urban areas.

Table 6: Per capita per day intake of protein (gram) by food items

Food Group	Rural		Urban	
	2010	2005	2010	2005
TOTAL	64.24	61.53	69.11	64.82
CEREALS	36.61	34.70	31.04	30.77
Rice	32.18	33.55	25.04	27.63
Wheat	2.81	0.96	4.04	2.95
Others	1.62	0.19	1.96	0.19
POTATO	2.15	1.85	2.00	2.02

VEGETABLES	5.04	4.67	4.73	4.68
Leafy vegetables	1.92	1.79	1.93	1.86
Others	3.13	2.88	2.80	2.82
PULSES	3.19	3.16	4.24	4.63
Masoor	1.20	1.55	3.06	3.69
Khesari	0.43	0.68	0.20	0.25
Others	1.56	0.93	0.98	0.69
MEAT/POULTRY/EGGS	4.33	3.66	9.02	6.50
Mutton	0.10	0.11	0.17	0.12
Beef	1.07	1.44	2.83	2.70
Chicken/Duck	2.30	1.46	4.47	2.61
Eggs	0.78	0.59	1.46	0.98
Others	0.08	0.06	0.09	0.09
FISH	9.05	8.06	11.53	9.86
CONDI/SPICES	1.81	1.34	1.91	1.77
Onion	0.24	0.19	0.33	0.30
Chillies	0.59	0.51	0.52	0.56
Others	0.98	0.64	1.06	0.91
FRUITS	0.82	0.79	1.15	0.78
SUGAR & GUR	0.00	0.01	0.00	0.00
Sugar	0.00	0.00	0.00	0.00
Gur	0.00	0.00	0.00	0.00
MILK/MILK PROD.	1.10	0.70	1.49	0.89
EDIBLE OILS	0.00	0.00	0.00	0.00
Mustard	0.00	0.00	0.00	0.00
Soyabean	0.00	0.00	0.00	0.00
MISCELLANEOUS	1.14	2.59	1.98	2.92
ITEMS*				

* Includes tea, soft drinks, bread, biscuits, betel nut, betel leaf, etc. Source: HIES, 2010

The table above shows that the per capita per day consumption of meat and eggs increased from 6.50 g to 9.02 g in urban area and from 3.66 g to 4.33 g in rural area. The consumption of fish also showed the same trend. It increased from 9.86 g to 11.53 g and from 8.06 g to 9.05 g at rural and urban areas respectively. The rest of the protein sources were from potato, vegetables, pulses, milk, spices, fruits and miscellaneous items. The consumption of potato and vegetables as protein-enriched foods showed an increasing trend both in rural and urban areas (**Table 7**).

Table 7: Percentage distribution of protein intake by food items

Food Group	Rural		Urban	
	2010	2005	2010	2005
TOTAL	100.0	100.0	100.0	100.0
CEREALS	56.1	56.5	44.9	47.5
Rice	49.3	54.6	36.2	42.6
Wheat	4.3	1.6	5.8	4.6
Other	2.5	0.3	2.8	0.3
POTATO	3.3	3.0	2.9	3.1

VEGETABLES	7.7	7.6	6.8	7.3
Leafy vegetables	2.9	2.9	2.8	2.9
Others	4.8	4.7	4.1	4.4
PULSES	4.9	5.1	6.1	7.2
Masoor	1.8	2.5	4.4	5.7
Khesari	0.7	1.1	0.3	0.4
Others	2.4	1.5	1.4	1.1
MEAT/POULTRY/EGGS	6.6	6.0	13.1	10.0
Mutton	0.2	0.2	0.3	0.2
Beef	1.6	2.3	4.1	4.2
Chicken/Duck	3.5	2.4	6.5	4.0
Eggs	1.2	1.0	2.1	1.5
Others	0.1	0.1	0.1	0.1
FISH	13.9	13.1	16.7	15.1
CONDI/SPICES	2.8	2.1	2.8	2.7
Onion	0.4	0.3	0.5	0.5
Chilies	0.9	0.8	0.8	0.9
Others	1.5	1.0	1.5	1.4
FRUITS	1.3	1.3	1.7	1.2
SUGAR & GUR	0.0	0.0	0.0	0.0
Sugar	0.0	0.0	0.0	0.0
Gur	0.0	0.0	0.0	0.0
MILK/MILK PROD.	1.7	1.1	2.2	1.4
EDIBLE OILS	0.0	0.0	0.0	0.0
Mustard	0.0	0.0	0.0	0.0
Soyabean	0.0	0.0	0.0	0.0
MISCELLANEOUS ITEMS*	1.8	4.2	2.9	4.5

* Includes tea, soft drinks, bread, biscuits, betel nut, betel leaf, etc. Source: HIES, 2010

In 2010, the per capita per day consumption of pulses in rural area was 3.19 g and it was 4.24 g in urban area. People both in rural and urban area used spices and fruits as the minor source of protein- 1.81 g in rural area and 1.91 g in urban area for the spices and 0.82 g in rural area and 1.15 g in urban area for the fruits. Milk and milk products also contributed very little- 1.10 g in rural area and 1.49 g in urban area. People in urban area consume more biscuits, soft drinks, bread, betel nut, tea etc. The table shows that the per capita per day consumption of those food items was 1.98 g in urban area and 1.14 g in rural area.

Conclusion

Domestic production, import and public food distribution system determine the overall food consumption and the consequent nutritional status of the population. Although aggregate domestic production of food grain was increasing during the last three decades, Bangladesh had to import 2-3 million metric tones of food grain to meet up the food deficit (Sharmin *et al.*, 2010). People in rural area consume more rice, potato and vegetables. But the urban people consume more expensive food items like wheat, pulses, meat, eggs, fish, milk and milk products,

edible oils, spices, fruits, sugar and other miscellaneous items. The average per capita per day rice consumption was 441.6 g in 2010 and 459.7 g in 2005 in rural area. These amounts were more than the rice consumed in urban area. The vegetable consumption was 170.0 gram/capita/day in rural area while only 155.0 gram/capita/day in urban area. The per capita per day calorie intake showed an increasing trend both in rural and urban area. The calorie intake was 2344.6 kcal/capita/day in rural area and 2244.5 kcal/capita/day in urban area in 2010. Among the calorie and protein related food items, cereals are the major contributor in both aspects. The other portions are contributed by non-cereal foods like edible oils, vegetables, potato, fish, meat, eggs, milk products, spices, pulses, sugar and miscellaneous items. Rice is the single major source contributing 65 percent in rural area and 59.2 percent in urban area of the total calorie intake. In urban area, the average protein intake (69.11gram/capita/day) was higher than rural area (65.24gram/capita/day) because the urban people are more educated and could afford to buy the more expensive protein-enriched food items. Therefore, necessary steps and measures should be taken by the policy makers to improve the average calorie and protein intake.

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References

1. Sharmin, S., Arahata, K. and Islam, M. S. (2010). Present Status and Sustainability of Food Security in Bangladesh. *Bangladesh J. Political Econ.* 25: 229-242.
2. Shafique, S., Akter, N., Stallkamp, G., de Pee, S., Panagides, D., Bloem, M.W. (2006). Trends of under- and overweight among rural and urban poor women indicate the double burden of malnutrition in Bangladesh. *Inter. J Epidemiol.* 36: 449-457.
3. World Bank. (2007). 'Development and the next generation.' *World Development Report 2007*, Washington, DC.
4. BBS. (2008). Bangladesh Bureau of Statistics, *Statistical Yearbook of Bangladesh, 2008*, Dhaka, Bangladesh.
5. HIES. (2005). The Household Income and Expenditure Survey, Bangladesh Bureau of Statistics, Planning Division, Ministry of Planning, Government of the People's Republic of Bangladesh, May 2007.
6. HIES. (2010). The Household Income and Expenditure Survey, Bangladesh Bureau of Statistics, Planning Division, Ministry of Planning, Government of the People's Republic of Bangladesh, May 2010.