

A Study of Availability of Meat in Western Bangladesh

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Abstract

This paper studies various aspects of meat production in western Bangladesh consisting of the divisions of Rajshahi and Khulna. It also makes a comparison with the other four divisions. Some of the important results of this study are that there are significant differences in availability of meat in different divisions and the districts. Rajshahi has nearly twice the meat available per head than Dhaka and Chittagong. The meat available per head has declined over the last twenty years from 25.7 to 23.2 kg per head. The implication of the declining meat availability per head, its nutritional consequences and the impact of recent abrupt rises in the price of meat have been discussed and the need for a meat policy emphasized.

Introduction

Although food production in terms of rice and wheat has improved leading to a fall in prices of these commodities recently, there is at present an acute shortage of meat in Bangladesh, resulting in huge increase in the price of this food item. The objective of this paper is to examine the state of availability of meat in western Bangladesh by which we mean the divisions of Rajshahi and Khulna. This is done by considering both livestock and poultry, that is, cattle and buffalo, goat and sheep, fowl and duck, and pigeon. Since the crisis of shortage of meat has become acute and is growing in dimension that has adverse nutritional consequences, it is high time that various aspects of the issue are put to professional scrutiny, which is attempted in this paper.

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The paper is divided into eight sections. Section 2 describes the number of livestock and poultry in the Rajshahi and Khulna divisions. Section 3 gives the availability of meat in the Rajshahi and Khulna divisions. Estimates of meat per head are given in Section 4. Section 5 contains a comparison with other divisions, while Section 6 compares these estimates with those of the earlier years. Implications of the results of this study are discussed in Section 7 and the conclusions are given in Section 8. The data for this study have been collected from *Statistical Pocketbook Bangladesh 1997* and 2006 and *World Tables*.

2. Livestock and poultry in the Rajshahi and Khulna divisions

A description of number of livestock and poultry in the Rajshahi division is given in Table 1. In terms of cattle and buffalo, Dinajpur had the largest number with 9.86 lakh followed by Naogaon, which had 8.80 lakh. Bogra came third with 8.15 lakh followed by Rangpur with 7.47 lakh leaving the fifth position for Gaibandha

Table 1 : Number of livestock and poultry: cattle and buffalo, goat and sheep, fowl and duck, and pigeon in the districts of Rajshahi division

| District | Cattle and buffaloes Number | Goats and sheep Number | Fowls and ducks Number | Pigeons Number |
|--------------------------|--------------------------------|---------------------------|---------------------------|-------------------|
| Bogra | 814664 | 541057 | 5747214 | 258460 |
| Dinajpur | 986235 | 769741 | 5914704 | 209803 |
| Gaibandha | 590217 | 408874 | 3505475 | 148755 |
| Jaipurhat | 304884 | 236843 | 3554782 | 91699 |
| Kurigram | 509275 | 415791 | 3211095 | 174492 |
| Lalmonirhat | 351307 | 315992 | 1319909 | 140788 |
| Naogaon | 880001 | 813545 | 6754309 | 347732 |
| Natore | 337558 | 406576 | 2817396 | 323565 |
| Nawabgonj | 259869 | 340195 | 2102678 | 257113 |
| Nilphamary | 454176 | 350579 | 1903389 | 148955 |
| Pabna | 429065 | 526680 | 2767731 | 431663 |
| Panchagar | 318176 | 305659 | 1155532 | 74931 |
| Rajshahi | 402468 | 600445 | 3825768 | 264024 |
| Rangpur | 747103 | 536029 | 4071951 | 218865 |
| Sirajgonj | 561362 | 433069 | 3696651 | 208929 |
| Thakurgaon | 557254 | 467734 | 2000372 | 79503 |
| Rajshahi Division | 8503614 | 7468808 | 54348957 | 3379278 |

Source: Statistical Pocketbook Bangladesh 2006

with 5.90 lakh. The lowest number of cattle and buffalo was in the district of Nawabganj, which numbered 2.60 lakh.

The largest number of goat and sheep were found in the district of Naogaon, which had 8.1 lakh of this item. Dinajpur had the second largest number with 7.7 lakh and the third position went to Rajshahi with 6.0 lakh, while the fourth and the fifth positions were occupied by Bogra with 5.41 lakh and Rangpur with 5.36 lakh goat and sheep.

Naogaon had the highest number of fowls and ducks with 67.5 lakh followed by Dinajpur with 59.1 lakh. Bogra came third with 57.5 lakh while the fourth position went to Rangpur, which had 40.7 lakh and the fifth position to Rajshahi that had 38.3 lakh of fowls and ducks. Panchagarh had 1.16 lakh fowls and ducks, which was lowest among all districts.

The data on pigeons have begun to be reported recently. Pabna with 4.3 lakh had the highest number of pigeons. Second position went to Naogaon which had 3.5 lakh and the third position went to Natore which had 3.2 lakh pigeons. The fourth and the fifth positions went to Rajshahi and Bogra with 2.64 lakh and 2.58 lakh pigeons, respectively.

Table 2: Total supply of cattle and buffalo, goat and sheep, fowl and duck, and pigeon in the districts of Khulna division

| District | Cattle and buffaloes Number | Goats and sheep Number | Fowls and ducks Number | Pigeons Number |
|------------------------|--------------------------------|---------------------------|---------------------------|-------------------|
| Bagerhat | 292351 | 139218 | 2366497 | 195219 |
| Chuadanga | 246087 | 344064 | 2183677 | 251736 |
| Jessore | 654579 | 582110 | 4443925 | 417122 |
| Jhenaidah | 475675 | 369410 | 3245877 | 354003 |
| Khulna | 324421 | 220669 | 2900198 | 144198 |
| Kushtia | 380302 | 456813 | 2411526 | 263523 |
| Magura | 226581 | 127555 | 1176313 | 157462 |
| Meherpur | 135572 | 236373 | 141137 | 131278 |
| Narail | 188566 | 95799 | 986649 | 119792 |
| Satkhira | 439575 | 418848 | 2533002 | 157930 |
| Khulna Division | 3363709 | 2990857 | 23648801 | 2192263 |

Source: Statistical Pocketbook Bangladesh 2006

A description of number of livestock and poultry in the Khulna division is given in Table 2. In terms of cattle and buffalo, Jessore had the largest number with 6.54 lakh followed by Jhenaidah, which had 4.75 lakh. Satkhira came third with 4.39 lakh followed by Kushtia with 3.80 lakh leaving the fifth position for Bagerhat with 2.92 lakh. The lowest number of cattle and buffalo was in the district of Meherpur, which had only 1.35 lakh of these animals.

Jessore, with 5.8 lakh, had the largest number of goat and sheep in this division. Kushtia had the second largest number with 4.6 lakh and the third position went to Satkhira with 4.2 lakh, while the fourth and the fifth positions were occupied by Jhenaidah with 3.7 lakh and Chuadanga with 3.4 lakh goat and sheep. The lowest number of goat and sheep was in the district of Narail, which had only 0.96 lakh of these animals.

Jessore had the highest number of fowls and ducks with 44.4 lakh followed by Jhenaidah with 32.4 lakh. Khulna came third with 29.0 lakh while the fourth position went to Satkhira which had 25.3 lakh and the fifth position to Kushtia which had 24.1 lakh of fowls and ducks. Meherpur with 1.4 lakh had the lowest amount of fowls and ducks.

Jessore with 4.2 lakh had the highest number of pigeons. Second position went to Jhenaidah, which had 3.5 lakh and the third position to Kushtia, which had 2.6 lakh of pigeons. The fourth and the fifth position went to Chuadanga and Bagerhat with 2.5 lakh and 1.9 lakh pigeons, respectively. The lowest number of pigeons was in the district of Narail, which had 1.2 lakh of these birds.

3. Availability of meat in the Rajshahi and Khulna divisions

The animals and birds counted above do not give a clear picture of availability of meat. It is only when each item is converted into meat it generates that we have a meaningful picture. To make such conversion, we multiply each cattle item by 100 kg, goat and sheep by 10 kg, chicken and fowl by 1 kg, and pigeon by 0.25 kg. We would emphasise that this conversion is an average and a rough one.

After conversion, the meat figures for each item for Rajshahi are given in Table 3. Now that each item has been converted into meat, and since the meat is similar we have added all these to get a total figure of meat.

In terms of meat, Dinajpur had the first place with 112.3 million kg of meat followed by Naogaon with 103.0 million kg of meat. Bogra with 92.7 million kg of meat, Rangpur with 84.2 million kg of meat and Gaibandha with 66.6 million kg of meat came next, respectively. With 31.5 million kg, Nawabganj had the smallest amount of meat.

Table 3 : Total supply of meat of cattle and buffalo, goat and sheep, fowl and duck, and pigeon in the districts of Rajshahi division

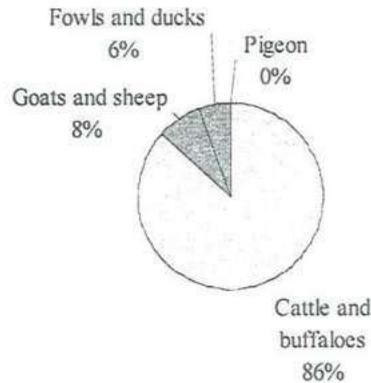
| District | Meat (cattle and buffaloes) | Meat (goat and sheep) | Meat (fowls and ducks) | Meat (pigeon) | Total meat |
|--------------------------|-----------------------------|-----------------------|------------------------|---------------|------------------|
| Bogra | 81466400 | 5410570 | 5747214 | 64615 | 92688799 |
| Dinajpur | 98623500 | 7697410 | 5914704 | 52451 | 112288065 |
| Gaibandha | 59021700 | 4088740 | 3505475 | 37189 | 66653104 |
| Jaipurhat | 30488400 | 2368430 | 3554782 | 22925 | 36434537 |
| Kurigram | 50927500 | 4157910 | 3211095 | 43623 | 58340128 |
| Lalmonirhat | 35130700 | 3159920 | 1319909 | 35197 | 39645726 |
| Naogoan | 88000100 | 8135450 | 6754309 | 86933 | 102976792 |
| Natore | 33755800 | 4065760 | 2817396 | 80891 | 40719847 |
| Nawabganj | 25986900 | 3401950 | 2102678 | 64278 | 31555806 |
| Nilphamary | 45417600 | 3505790 | 1903389 | 37239 | 50864018 |
| Pabna | 42906500 | 5266800 | 2767731 | 107916 | 51048947 |
| Panchagar | 31817600 | 3056590 | 1155532 | 18733 | 36048455 |
| Rajshahi | 40246800 | 6004450 | 3825768 | 66006 | 50143024 |
| Rangpur | 74710300 | 5360290 | 4071951 | 54716 | 84197257 |
| Sirajgonj | 56136200 | 4330690 | 3696651 | 52232 | 64215773 |
| Thakurgaon | 55725400 | 4677340 | 2000372 | 19876 | 62422988 |
| Rajshahi Division | 850361400 | 74688080 | 54348957 | 844820 | 980243257 |

Table 4 : Total supply of meat: cattle and buffalo, goat and sheep, fowl and duck, and pigeon in the districts of Khulna division

| District | Meat (cattle and buffaloes) | Meat (goat and sheep) | Meat (fowls and ducks) | Meat (pigeon) | Total meat |
|------------------------|-----------------------------|-----------------------|------------------------|---------------|------------------|
| Bagerhat | 29235100 | 1392180 | 2366497 | 48805 | 33042582 |
| Chuadanga | 24608700 | 3440640 | 2183677 | 62934 | 30295951 |
| Jessore | 65457900 | 5821100 | 4443925 | 104281 | 75827206 |
| Jhenaidah | 47567500 | 3694100 | 3245877 | 88501 | 54595978 |
| Khulna | 32442100 | 2206690 | 2900198 | 36050 | 37585038 |
| Kushtia | 38030200 | 4568130 | 2411526 | 65881 | 45075737 |
| Magura | 22658100 | 1275550 | 1176313 | 39366 | 25149329 |
| Meherpur | 13557200 | 2363730 | 141137 | 32820 | 16094887 |
| Narail | 18856600 | 957990 | 986649 | 29948 | 20831187 |
| Satkhira | 43957500 | 4188480 | 2533002 | 39483 | 50718465 |
| Khulna Division | 336370900 | 29908570 | 23648801 | 548066 | 390476337 |

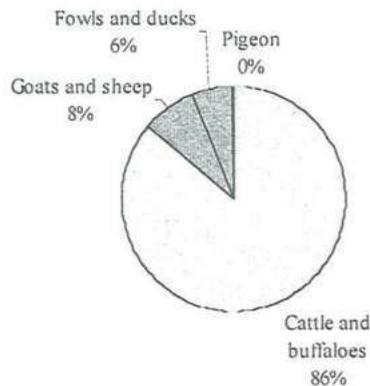
The meat figures for each item for Khulna division are given in Table 4. Here, Jessore had the first place with 75.8 million kg of meat followed by Jhenaidah

Figure 1 : Percentage of different meat items, Rajshahi



with 54.6 million kg, Satkhira with 50.7 million kg, Kushtia with 45.1 million kg and Bagerhat with 33.0 million kg of meat followed next. Meherpur had the lowest amount of meat with 16.1 million kg.

Figure 2: Percentage of different meat items, Khulna



It is interesting to compare the percentages of different types of meat in the two western divisions of Bangladesh. This is done in Figure 1 and 2.

Figure 1 shows the percentage share of different meat items for the Rajshahi division. It is seen that source of 86 % of the meat was cattle and buffalo. Goat

and sheep accounted for 8 % and fowl and duck 6 %. Pigeon accounted for so small a percentage that the pie chart shows it as zero percent.

A similar picture appears for the Khulna division as depicted in Figure 2. Cattle and buffalo accounted for 86 % of the source of meat with goat and sheep 8 % and chicken and fowl the rest 6 %.

Table 5 : Meat per head in Rajshahi division (in kg)

| District | Total meat | Population | Meat per head |
|--------------------------|------------------|-----------------|---------------|
| Bogra | 92688799 | 3013000 | 30.8 |
| Dinajpur | 112288065 | 2643000 | 42.5 |
| Gaibandha | 66653104 | 2138000 | 31.2 |
| Jaipurhat | 36434537 | 847000 | 43.0 |
| Kurigram | 58340128 | 1792000 | 32.6 |
| Lalmonirhat | 39645726 | 1109000 | 35.7 |
| Naogaon | 102976792 | 2391000 | 43.1 |
| Natore | 40719847 | 1521000 | 26.8 |
| Nawabgonj | 31555806 | 1426000 | 22.1 |
| Nilphamary | 50864018 | 1572000 | 32.4 |
| Pabna | 51048947 | 2176000 | 23.5 |
| Panchagar | 36048455 | 837000 | 43.1 |
| Rajshahi | 50143024 | 2287000 | 21.9 |
| Rangpur | 84197257 | 2542000 | 33.1 |
| Sirajgonj | 64215773 | 2694000 | 23.8 |
| Thakurgaon | 62422988 | 1214000 | 51.4 |
| Rajshahi Division | 980243257 | 30202000 | 32.5 |

Source: Statistical Pocketbook Bangladesh 2006

4. Meat per head in the Rajshahi and Khulna divisions

We have so far given total figures only. These do not give a clear picture unless the figure for meat available per head is obtained. For this, we now consider the population in each district and derive the figure for meat per head. These are given in Table 5 and Table 6.

For the Rajshahi division, Thakurgaon heads the list with 51.4 kg of meat per head followed jointly by Panchagar and Naogaon with 43.1 kg each, Jaipurhat with 43.0 kg and Dinajpur with 42.5 kg. The lowest per head meat availability was in the district of Rajshahi with only 21.9 kg.

Table 6 : Meat per head in Khulna division (in kg)

| District | Total Meat | Population | Meat per Head |
|------------------------|------------------|-----------------|---------------|
| Bagerhat | 33042582 | 1549000 | 21.3 |
| Chuadanga | 30295951 | 1007000 | 30.1 |
| Jessore | 75827206 | 2472000 | 30.7 |
| Jhenaidah | 54595978 | 1580000 | 34.6 |
| Khulna | 37585038 | 2379000 | 15.8 |
| Kushtia | 45075737 | 1740000 | 25.9 |
| Magura | 25149329 | 824000 | 30.5 |
| Meherpur | 16094887 | 591000 | 27.2 |
| Narail | 20831187 | 698000 | 29.8 |
| Satkhira | 50718465 | 1865000 | 27.2 |
| Khulna Division | 390476337 | 14705000 | 26.6 |

Source: Statistical Pocketbook Bangladesh 2006

For the Khulna division, Jhenaidah heads the list with 34.6 kg of meat per head followed by Jessore with 30.7 kg, Magura with 30.5 kg, Chuadanga with 30.1 kg and Narail with 29.8 kg. The lowest per head meat availability was in the district of Khulna with only 15.8 kg.

5. A comparison with other divisions

It is worthwhile to make a comparison of availability of meat in the six divisions of Bangladesh. The relevant data are given in Table 7.

Table 7 : Total supply of cattle and buffalo, goat and sheep, fowl and duck, and pigeon in the six divisions and whole of Bangladesh

| Divisions | Cattle and buffaloes | Goats and sheep | Fowls and ducks | Pigeon |
|-------------------|----------------------|-----------------|------------------|-----------------|
| | Number | Number | Number | Number |
| Barisal | 1850020 | 752333 | 18173883 | 1332812 |
| Chittagong | 3518534 | 1834707 | 34907938 | 1223652 |
| Dhaka | 6186374 | 3804289 | 48383548 | 2498048 |
| Sylhet | 1713086 | 608067 | 8935171 | 253870 |
| Rajshahi | 8503616 | 7468808 | 54348957 | 3379278 |
| Khulna | 3363710 | 2990857 | 23648801 | 2192263 |
| Bangladesh | 25135338 | 17459061 | 188398298 | 10879923 |

Source: Statistical Pocketbook of Bangladesh 2006

In terms of cattle and buffalo, Rajshahi division has the highest number with 8.5 million animals followed by Dhaka with 6.2 million and Chittagong with 3.5 million. The Khulna division is in the fourth position with 3.36 million followed by 1.85 million animals in Barisal. Sylhet came last with 1.71 million cattle and buffalo.

Rajshahi division has the highest number of Goats and sheep with 7.5 million followed by Dhaka with 3.8 million and Khulna with 3.0 million. The Chittagong division is in the fourth position with 1.8 million followed by 0.75 million animals in Barisal. Sylhet came last with 0.6 million Goats and sheep.

In terms of fowls and ducks, Rajshahi division has the highest number with 54.3 million birds followed by Dhaka with 48.4 million and Chittagong with 34.9 million. The Khulna division is in the fourth position with 23.6 million followed by 18.2 million birds in Barisal. Sylhet came last with 8.9 million fowls and ducks.

Table 8 : Total supply of meat of cattle and buffalo, goat and sheep, fowl and duck, and pigeon in the six divisions and whole of Bangladesh (in kg.)

| Divisions | Cattle and buffaloes | Goats and sheep | Fowls and ducks | Pigeon |
|-------------------|----------------------|------------------|------------------|----------------|
| | Meat | Meat | Meat | Meat |
| Barisal | 185002000 | 7523330 | 18173883 | 333203 |
| Chittagong | 351853400 | 18347070 | 34907938 | 305913 |
| Dhaka | 618637400 | 38042890 | 48383548 | 624512 |
| Sylhet | 171308600 | 6080670 | 8935171 | 63468 |
| Rajshahi | 850361600 | 74688080 | 54348957 | 844820 |
| Khulna | 336371000 | 29908570 | 23648801 | 548066 |
| Bangladesh | 2513533800 | 174590610 | 188398298 | 2719981 |

Rajshahi division has the highest number of pigeons with 3.4 million followed by Dhaka with 2.5 million and Khulna with 2.2 million. The Barisal division is in the fourth position with 1.3 million followed by 1.2 million birds in Chittagong. Sylhet came last with 0.25 million pigeon.

In terms of meat, the ranking remains the same. The meat figures are given in Table 8.

The most interesting figures are those for the meat per head. These are obtained by dividing total meat by population of each division. The figures are given in

Table 9. The figures lay bare the wide difference in meat per head between the divisions. While Rajshahi has 32.5 kg of meat per head, Chittagong has only half of that with 16.7 kg per head. Dhaka too has a very low availability of 18.1. After Rajshahi, the highest amount is in the division of Khulna with 26.6, Barisal with 25.8 followed by Sylhet with 23.5 kg of meat per head.

Table 9 : Comparison of total supply of meat per head in the six divisions and whole of Bangladesh (in kg.)

| Divisions | Total meat | Population | Meat per head |
|-------------------|-------------------|------------------|---------------|
| Barisal | 211032416 | 8174000 | 25.8 |
| Chittagong | 405414321 | 24290000 | 16.7 |
| Dhaka | 705688350 | 39044000 | 18.1 |
| Sylhet | 186387909 | 7940000 | 23.5 |
| Rajshahi | 980243457 | 30202000 | 32.5 |
| Khulna | 390476437 | 14705000 | 26.6 |
| Bangladesh | 2879242689 | 124355000 | 23.2 |

The comparison made in Table 9 reveals that Rajshahi and Khulna, the two divisions of western Bangladesh, occupied the first two positions with 32.5 and 26.6 kg of meat per head. These two divisions are perhaps the suppliers of meat to other divisions like Dhaka and Chittagong. Don't we see truckloads of bovine population shifted to Dhaka and elsewhere?

Table 10 : Comparison of present per head meat with a past per head meat in Bangladesh

| Year | 1983-84 | 2004-05 |
|-----------------------------------|---------------|-------------|
| Meat of cattle and buffaloes (kg) | 2249800000 | 2513533800 |
| Meat of goats and sheep (kg) | 144760000 | 174590610 |
| Meat of fowls and ducks (kg) | 76446000 | 188398298 |
| Meat of pigeon (kg) | Not available | 2719981 |
| Total meat (kg) | 2471006000 | 2879242689 |
| Population | 96000000 | 124355000 |
| Per head meat (kg) | 25.7 | 23.2 |

6. A comparison over time for Bangladesh: 2004-05 and 1983-84

An important question is whether there has been an increase in meat per head over time. For this, relevant data were collected for the years 1983-84 and 2004-05 and is presented in Table 10.

The result we got is very disappointing. Instead of an increase in meat per head, there has been a decline over the twenty years that we considered. The meat per head fell from 25.7 kg in 1983-84 to 23.2 kg in 2004-05. Coupled with this has been the steady rise in the price of meat, which during the last three years has nearly tripled. This has taken the meat item out of the lower income class and has greatly shrunk its availability to the middle class.

7. Implications of the results of this study

Several important estimates have been obtained regarding availability of meat in Bangladesh. There are wide differences in the availability of meat in different districts and divisions of Bangladesh. For example, per head availability of meat in the Rajshahi division is nearly twice than that of Dhaka and Chittagong divisions. There are also substantial differences among the various districts of western Bangladesh. It is necessary to take note of these things for devising an appropriate meat policy.

The fact that per capita availability of meat has gone down instead of increasing is a matter of great concern from the nutritional viewpoint. The rising price of meat, which has very much accentuated of late, has greatly reduced affordability of this source of protein.

A clarification is in order regarding the number of animals and birds and of estimates of meat that we have derived. Are these estimates for a year or for a smaller part of a year? We would submit that the estimates are the maximum availability of meat. Hence, the availability of meat figures would have been much lower had we used any other measure. We look forward to suggestions from other researchers in this regard.

8. Conclusions

In Bangladesh, food security is narrowly, we would say erroneously, defined as self-sufficiency in rice. Rice and wheat only supply starch, leaving protein completely unattended. The fact that meat per head has declined instead of increasing over time should appear as a matter of great concern if we consider the dietary requirement of the nation. The prolonged, and in recent years very hefty rise in meat prices has made this problem even more complicated as a high and increasing number of low income, and perhaps lower middle income, consumers are deprived of this important source of protein.

At the time of completing this paper in July 2009, the price of lentils (masur, mugh, etc.) has greatly increased taking away another important source of protein available to the general people. The price of egg has had a record rise selling at Tk 90 per dozen. In the backdrop of all these developments, there is a great need for a meat policy to increase its production and distribution.

References

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