BUFFALO PRODUCTION AND CONSTRAINTS IN BANGLADESH

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ABSTRACT

Like other developing countries, systems of buffalo production vary widely in accordance with climate, soil and socio economic opportunities in Bangladesh. Buffaloes in Bangladesh can be classified into 2 categories: (I) indigenous buffaloes, found in the coastal areas and marshy land of the country, (ii) migrated buffaloes from India and Myanmar found in the sugar-cane producing belt. The migrated buffaloes from India and other areas and swamp types respectively are generally river types. Coastal areas and marshy land are swamp types. A number of crossbred between swamp and river are also found in the coastal area. Most of the farmers are rural small holders who have traditionally integrated their livestock with crop production and buffaloes are raised mainly to provide draught power in crop production. The feed resource base for these buffaloes are scavenging and consists of crop residues, household waste, tree fodder, roots and tuber, grain by-products and anything edible found in the immediate environment. The management practices adopted by buffalo raisers usually depends on the type of production in which they are involved. At the village level production is usually based on a small herd of mixed ages and sexes generally for draught and breeding purposes. In a semi-intensive production system, buffaloes are kept mainly for specific purposes, i.e., either for draught or for milk production. The low productivity is due to the genetic character of the breed and also poor quality nutrition. It is suggested that productivity of these buffaloes mainly depends on genetic improvement, good ration, good management and also climatic conditions of an area.

INTRODUCTION

In Bangladesh, like other developing countries, systems of animal production and use vary widely in accordance with climate, soil and socio economic opportunities. Traditionally small farmers are bulk producers of milk and meat. Besides, milk and meat livestock is valued for one or several of the following traits: capital, credit, traction, hides and skins, fuel and fertilizer. The systems of production are in contrast with simple single-product farming like beef, mutton, milk, grain etc. that are characteristics in developed countries. The production systems are characterized by small number of animals with no or minimal inputs, low outputs and periodic destruction of animals by disease and mostly maintained under scavenging systems with little or no inputs for housing, feeding or health care. The types of cattle may be described as i. large native ii. Small native and IV. Cross breed. These native animals are well adapted to the local environmental, low quality feed resources, housing facilities and scavenging systems and the most important aspect is that their performance is also good in terms of feed efficiency. The feed resource base for these animals is scavenging and consists of crop residues, household waste, tree fodder, roots and tuber, grain by-products and anything edible found in the immediate environment. The supply of produced animal protein has increased by about 1.2% annually while population grew by about 2.6% per year over the past ten years. The per capita availability of milk from cattle and buffalo is 28 g/day and there is total deficit of 8.07 MMT of milk. Meat consumption/head/day are only 10.1 gm. of which 71.7% comes from cattle and buffalo though the daily requirement is 120 g/head/day (Hossain and Chowdhury, 1989). This means that the production of milk and meat must be increased at least 8 to 12 times more. The indigenous buffaloes like the indigenous cattle can not yield such high amount of milk and meat, even they are provided with optimum environment. Most of the farmers are rural small holders who have traditionally integrated their livestock with crop production. Buffaloes are raised mainly to provide draught power in crop production. Family labour is available whenever needed. Throughout the South East Asian countries, farmers maintain only sufficient number of buffaloes as a source of draft power on their farms in different region of Bangladesh. Buffalo milk and meat is not accepted by all people in the country especially in the urban area. The exceptions are in coastal areas of Bangladesh where buffalo meat is equally relished like cattle meat.

The economic importance may be described as followed:

- Complement to crop production reduce the risk, accumulate capital (savings)
  i. Provide draught power for self and neighbor and income from sale of dung as fertilizer or as fuel
  ii. Satisfy cultural and custom needs
  iii. Ensure social status
  iv. Provide food and generate income
Livestock population and productivity: The buffaloes are reared by many races under diverse agro-climatic conditions of Bangladesh with some differences in its management practices particularly with regard to their major function in local agriculture. The buffalo husbandry practices are largely influenced by their types and their economic uses. Bangladesh possesses 23.40 million cattle heads and 0.82 million buffalo heads (FAO 1990-1996). Cattle and Buffaloes are two important species of Bovidae family in Bangladesh. They are the main source of milk, meat and draught power. Cattle and buffaloes supply about 99% of the total milk produced in the country, 50% of the total meat sold in the market and 98% of the draught requirement of the country (BBS, 1991). The contribution of cattle and buffaloes to the total output is not static, rather varies depending upon population size and localities (Shown in Tables-1).

Table 1. Trend of Cattle and buffalo population and number of animal slaughtered from 1985 to 1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Milk Production (Units)</th>
<th>Animal Head Slaughter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cattle</td>
<td>Buffalo</td>
<td>Cattle</td>
</tr>
<tr>
<td>1985</td>
<td>22,132,000</td>
<td>605,000</td>
<td>3,434,000</td>
</tr>
<tr>
<td>1986</td>
<td>22,348,000</td>
<td>634,000</td>
<td>3,469,000</td>
</tr>
<tr>
<td>1987</td>
<td>22,567,000</td>
<td>664,000</td>
<td>3,504,000</td>
</tr>
<tr>
<td>1988</td>
<td>22,789,000</td>
<td>698,000</td>
<td>3,540,000</td>
</tr>
<tr>
<td>1989</td>
<td>23,015,000</td>
<td>733,000</td>
<td>3,573,000</td>
</tr>
<tr>
<td>1990</td>
<td>23,244,000</td>
<td>772,000</td>
<td>3,615,000</td>
</tr>
<tr>
<td>1991</td>
<td>23,259,000</td>
<td>807,000</td>
<td>3,618,000</td>
</tr>
<tr>
<td>1992</td>
<td>23,480,000</td>
<td>832,000</td>
<td>3,655,000</td>
</tr>
<tr>
<td>1993</td>
<td>23,923,000</td>
<td>866,000</td>
<td>3,727,000</td>
</tr>
<tr>
<td>1994</td>
<td>24,130,000*</td>
<td>874,000*</td>
<td>3,760,000F</td>
</tr>
<tr>
<td>1995</td>
<td>24,340,000*</td>
<td>882,000*</td>
<td>3,800,000</td>
</tr>
</tbody>
</table>

Production systems: The systems of buffalo production in Bangladesh is very much similar to that of tropical cattle except in some aspects arising of its characteristic grazing and breeding behaviors and water requirements. In tropics or sub-tropics, the standard of Animal husbandry practices are generally very low and farmers follow their own traditional systems of animal management and breeding. Traditional rearing of buffaloes is generally characterized by subsistence on the scarce resources of the small farm, where cash inputs are rarely allocated. Buffaloes are in Bangladesh are either indigenous or migrated from India and Myanmar. These animals have important role in the national economy and livelihoods of rural people. Productivity of these buffaloes is very and mainly used for draught purposes. Genotypes of these animal are not well characterized and need to be improved through appropriate breeding programme. The small size of the holdings is one of the characteristics of small farm systems. The actual farm size varies from country to country shown in (Table-2) (Devendra, 1993). The smallest farm size occurs in Bangladesh (<0.4 ha), while households cultivating paddy in Sri Lanka have average holding of 0.3 ha of land. In South East Asia, the average size of small farms is about 1-2 ha. A recent report from Bangladesh indicated that eighty five per cent of the small farmers fall bellow the 5 ha size land and 60% are bellow 3 ha size land (BBS, 1996). The household size ranges from 5-6 members. A central goal of the small farm is to generate minimum target income and sustainable systems. Advantages of these systems have identified as (a) efficiency of scarce resource use in small farm, (b) Reduced cost of production and dependence on purchased feeds and fodder and (c) increased self-reliance and sustainability.

Types of Buffalo: Buffaloes in Bangladesh may be classified into 2 categories: (i) indigenous buffaloes found in the coastal areas and marshy land of the country, and (ii) migrated buffaloes from India and Myanmar found in the sugar-cane belt and Coxes’s bazar district respectively. The migrated buffaloes from India are generally of river types, and from Myanmar, coastal areas or marshy land are of swamp types, though a number of crossbred between swamp and river types are found in the coastal area (Hussain and Chowdhury, 1989; Faruque, et al. 1985, 1990; Faruque, 1991, 1992). There are great differences within and between countries in their efficiency to convert feed into milk, meat and tractive energy. Since 96% of the world river buffalo population is found in Asia, and since Asian buffaloes are almost exclusively raised by small-holders and landless farmers, there is an opportunity to improve the standard of living of small farmers in Asia through well planned buffalo development and research programmes.
Feeding systems and constraints of Production: Large numbers of buffaloes are being kept by the farmers under different systems of husbandry. Now, there is tendency towards larger herd size with improved management practices. Buffalo is a part of their farming enterprises to supplement their farm income. Farmers usually produce some green fodder in their normal crop rotation or collect by cut and carrying systems from fellow land and utilize the cereal straws and by-products produced at their farm. Their feed supply is closely tied with the cropping system (miln) ds. Virtually identified the following major feeding systems and constraints of Production.

Sources of feeds and fodder: Feeds from arable land: The major feed for livestock is crop residues supplemented with marginal quantities of cereal and oil seed by-products and weeds from crop fields. Virtually Bangladesh has no arable land for feed and fodder production exclusively for animals.

Feeds from non-arable land: Non-arable land contributes most of the green fodder for ruminant animals. Non-arable land at farm level is found around pond, embankments, on bunds, and around homesteads. Outside the farm, it is usually public wasteland found around Canal Rivers, roadside and railways. Using shrubs and tree leaves, tender shoot and twig as fodder especially for goats are traditional in the villages of Bangladesh. Cultivation of these shrubs and most of the trees requires no extra arable land or labour. The use of shrubs and tree fodder as livestock feed has recently been increasingly recognized (Saadullah, 1990).

Feed Resources from Agro forestry: Feed and Feed resources recognized under agro forestry systems are usually (a) Ground Vegetation (b) Cultivation of Improved Pasture (c) Agro forestry by-products and residues (c) Another factor to consider is the use of herbaceous legumes.

Aquatic Plant: Aquatic plants includes water hyacinth, dhal and other water biomass that grows naturally in the pond, canal ditches etc.
Management practices: The management practices adopted by buffalo raisers usually depends on the type of production in which they are involved. At the village level production is usually based on a small herd of mixed ages and sexes generally for draught and breeding purposes. In a semi-intensive production system, buffaloes are kept mainly for specific purposes, i.e., either for draught or for milk production. In an extensive production system, a larger herd (of about 20-40 buffaloes) is kept for either breeding or meat production (usually for sale or slaughter). In the village production systems the actual care of bovine animals is normally the responsibility of the elders and adolescent children. Buffaloes and cattle are kept within the village at night, and spend the daytime scavenging for roughage, together with other animals from the same and nearby villages. Grazing and browsing ranges over practically all village lands during the dry season, but is restricted to upland non-cropped areas during the rainy season. Animals are more difficult to herd during the crop growing season and buffaloes are said to be more difficult to herd than cattle. Usually the beast has its own wallow, but sometimes the whole village herd will lie down together in mud wallows remaining asleep or ruminating till evening. By about after noon they emerge out of their mud wallows covered with grey slime and graze on roads and other aquatic herbage till late in the evening. After this, they move to dry grounds where they remain till the day-dark. The buffaloes show their maximum activity during night period. Their breeding take place mainly during night and males may be seen wrestling with their horns and females bleating to their calves. After the main working season lasting for about 3 months from June-September, they drive into the neighboring forest or “haor” (water body area) or close to coastal area and where they remain till the end of the harvest season.

Breeding Constraints: These advantages of indigenous buffaloes, however, do not provide any encouragement and needs proper breeding programme to its productivity. The low productivity is due to the genetic characters of the breed and also supply of poor quality ration to the animals. Production mainly depends on genetic characters, good ration, good management and climatic conditions of an area Under adverse conditions; the return from these animals is uneconomic. It is obvious that improved production is not possible with the change of breed alone. Lack of efficient as well as number of artificial inseminator (AI) availability of technicians in the region and proper insemination facilities have worsened the situation.

Conclusion: In general the animals are undernourished and managed under primitive feeding and breeding conditions. Standard management practices for raising specific categories of animals e.g. work, meat or milk do not exit.

There is lack of grazing land and feeds and fodder, particularly protein-rich concentrates. Increased availability and improved the feeding value of crop residues and cereal or industrial by-products; must be achieved application of available technologies

Buffalo population has been increased more in the recent past than that of cattle population. So in future, buffaloes can be an important source of milk and meat in Bangladesh in addition to draught power, if feeding and breeding systems are improved

The sound breeding programme to improve genotype of these indigenous buffaloes through appropriate breeding policy is needed. Shortage of breeding bulls or non-availability of AI facilities in the villages also are the major problem

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