

# **MIMAP Bangladesh**

## **Micro Impacts of Macroeconomic and Adjustment Policies in Bangladesh**

**Working Paper No. 09**

**Poverty Profile in Bangladesh: Livestock  
Development as Means of Poverty Reduction**

**Mustafa K. Mujeri**

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## Poverty Profile in Bangladesh: Livestock Development as Means of Poverty Reduction

This work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada.

The materials presented and the opinion expressed in this Publication are those of the authors and do not necessarily reflect those of BIDS and the International Development Research Centre (IDRC).

September 2002  
BIDS

Published by:  
Bangladesh Institute of Development Studies (BIDS)  
E-17 Agargaon, Sher-e-Bangla Nagar  
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# **Poverty Profile in Bangladesh: Livestock Development as Means of Poverty Reduction**

## **1. Introduction**

With a low level of per capita income and human development, still one of every two persons in Bangladesh lives in poverty. If those who do not have adequate clothing, shelter or access to other basic needs are considered, the number will be higher. Similarly, if those who live 'above' the poverty line but are vulnerable to risks and crises and remain in constant danger of income erosion below the poverty threshold are taken into account, the number will be still larger. In Bangladesh, poverty has many dimensions and many roots which require a multi-strategy solution. Along with increasing income, poverty reduction efforts need to include measures for mitigating other deprivations e.g. capability and entitlement, participation, empowerment, vulnerability and crisis-coping capacity, networking capacity, intra-household and gender disparity, and access to physical, human, natural, social and political capital. These are necessary to enhance voice, power, and bargaining strength of the poor. For sustained poverty reduction, all routes of attacking poverty matter since strong interactions exist among various forms of deprivation. In the process, income poverty reduction is important since this helps in increasing the capacity of the poor to fulfill other deprivations. The reduction of income poverty requires acceleration of pro-poor economic growth for increasing income and employment of the poor.

Since independence, Bangladesh's growth performance has been modest with a per capita GDP growth of about 2 per cent per year. Despite some increase in annual GDP growth to around 5 per cent in the 1990s (compared with less than 4 per cent in the 1980s), the growth performance remains well below Bangladesh's potential. This indicates that a key concern of poverty reduction in the country is to accelerate economic growth and create a structure of growth that generates increasing benefits for the poor.

The present paper examines the advantages of livestock sector in accelerating growth and creating a growth structure that has a high capacity to reduce poverty. The issues will be analyzed both from the demand and supply sides to identify livestock development imperatives in the perspective of developing and diversifying the rural economy and creating synergies for poverty reduction.

The paper is organized as follows. Section 2 presents a brief overview of poverty in Bangladesh and captures the salient features of the poverty process. Section 3 examines the performance and potentials of the livestock sector and highlights major policies and institutional measures required to promote a dynamic livestock sector. Section 4 examines the links between livestock development and poverty reduction and outlines broad parameters to broaden and deepen the links. Finally, section 5 contains the concluding remarks and broad policy implications.

## 2. Poverty Profile in Bangladesh: A Brief Overview

Given the multidimensionality of poverty, it is important to recognize that poverty cannot be conceived in terms of quantitative indicators alone. The heterogeneity of voices and socio-economic and other characteristics are important determinants of poverty. Keeping the above caveat in view, the present section reviews the poverty situation in terms of several broad dimensions.

### 2.1 Trends in Income Poverty

The incidence of income poverty during the 1990s is given in Table 1.<sup>1</sup> Between 1991/92 and 2000, the incidence of national poverty declined from 59 per cent to 50 per cent, indicating a modest reduction of 1 percentage point per year. The results also suggest that progress in urban poverty reduction was better than similar progress in rural areas. Moreover, poverty in Bangladesh remains mostly a rural phenomenon: more than 85 per cent of the poor lived in rural areas in 2000.

**Table 1: Poverty Incidence in the 1990s**

	Head count ratio (%)			No. of poor (million)		
	1991/92	1995/96	2000	1991/92	1995/96	2000
National	58.8	51.0	49.8	63.9	59.4	62.7
Rural	61.2	55.2	53.0	57.6	53.6	53.4
Urban	44.9	29.4	36.6	6.3	5.8	9.3

Note: The head count ratio refers to the percentage of population living below the poverty line. The poverty line used here is the upper poverty line applying the cost of basic needs (CBN) method. The number of the poor has been estimated by the author using implicit population figures in respective surveys.

Source: BBS 2001.

<sup>1</sup> The poverty figures are based on consumption expenditure data since consumption is considered to be a better indicator of permanent income status in a country like Bangladesh. The incidence of poverty prior to the 1990s is not provided due to non-comparability of the available estimates. The available figures, however, indicate very little progress in poverty reduction in the 1980s. According to one estimate, the head count ratio remained stagnant at around 59 per cent between 1983/84 and 1991/92. See World Bank 1998.

The available estimates also indicate significant differences in incidence of poverty across different geographical regions of the country (Table 2). Poverty incidence is much higher in Rajshahi Division in both rural and urban areas compared with other divisions. Similarly, progress in poverty reduction since the mid-1990s has been uneven across the divisions with overall poverty incidence increasing in Dhaka Division and remaining almost unchanged in Rajshahi Division.

**Table 2: Poverty Incidence by Divisions**

Division	1995/96			2000		
	Rural	Urban	Total	Rural	Urban	Total
Barisal	50.2	44.4	49.9	40.0	37.9	39.8
Chittagong	54.0	40.8	52.4	48.4	44.0	47.7
Dhaka	48.5	18.4	40.2	52.9	28.2	44.8
Khulna	56.0	48.7	55.0	52.2	47.1	51.4
Rajshahi	65.0	36.8	61.8	62.8	48.1	61.0
Bangladesh	55.2	29.4	51.0	53.0	36.6	49.8

Note: The figures refer to the percentage of population living below the poverty line (head count ratio).

Source: BBS 2001.

## 2.2 Food and Nutrition

The average per capita daily intake of caloric and protein is given in Table 3. The average intake of calorie, in both rural and urban areas, does not show any clear increasing trend rather some decline in urban areas may be noted during 2000. Similarly, the intake of protein remained nearly unchanged over the years with noticeable decline in 2000.

**Table 3: Average Intake of Calorie and Protein**

Year	Calorie (Kcal)		Protein (gram)	
	Rural	Urban	Rural	Urban
1985/86	2,203	2,107	63.2	65.4
1988/89	2,217	2,183	63.3	68.3
1991/92	2,267	2,258	62.3	65.5
1995/96	2,251	2,209	64.5	67.5
2000	2,263	2,150	61.9	65.0

Source: BBS 2001.

The average intake, however, conceals large differences that exist in food intake between the poor and the nonpoor (Table 4). The daily total food intake of the poor is only 71 per cent and 69 per cent of the intake of the nonpoor in rural and urban areas respectively. Such differences are, moreover, sharp for livestock products varying between 23 per cent and 26 per cent for milk and milk products and between 35 per cent and 39 per cent for meat, poultry, egg and fish over rural and urban areas. From a balanced nutritional point of view, the actual food intake seems to significantly deviate, particularly in case of meat and poultry, from the minimum requirements (Table 5). Although the 1990s witnessed improvements in the situation, the deficiencies in intake of livestock products and associated disparity in the intake between the poor and the nonpoor remain areas of concern from both nutrition and welfare perspectives.

**Table 4: Daily Per Capita Food Intake by Poverty Status, 1999**

Item	Rural Areas			Urban Areas		
	Poor	Nonpoor	Poor as % of nonpoor	Poor	Nonpoor	Poor as % of nonpoor
Rice	410	468	87.6	379	384	98.7
Other cereals	35	59	59.3	49	83	59.0
Potato	46	67	68.7	63	79	79.7
Vegetables	130	170	76.5	108	167	64.7
Milk & milk products	12	46	26.1	11	48	22.9
Meat poultry, egg & fish	29	74	39.2	39	111	35.1
Pulses	18	30	60.0	19	27	70.4
Others	63	138	45.7	68	173	39.3
Total	743	1,052	70.6	736	1,072	68.7

Source: BBS 2002.

### 2.3 Occupation and Landownership Characteristics

As mentioned earlier, the poor have substantial heterogeneity both in terms of socioeconomic, spatial, gender and other differences as well as household or individual attributes. Physical and human resource endowments, features of household demography, nature of occupation and employment, and similar indicators provide useful pointers in identifying who the poor are. In rural areas where most of the poor live, poverty is higher among those who possess little or no land, who have no education and marketable skills, and



those who depend on wage labour for livelihood. Agricultural labour households and tenants (with little or no land) have a high incidence of poverty as do non-agricultural casual workers and self-employed workers with little capital. In both rural and urban areas, poverty incidence is significantly correlated with land ownership (Table 6). Nearly 71 per cent of the landless households who report agricultural wage labour as their principal occupation live in poverty (BBS 2002).

**Table 5: Balanced Nutrition and Actual Food Intake**

(gram/capita/day)

Item	Require- ment <sup>1</sup>	Average Intake			
		1991/92		2000	
		Quantity	As % of requirement	Quantity	As % of requirement
Rice	390	473	121.3	459	117.7
Other cereals	100	36	36.0	17	17.0
Roots & vegetables <sup>2</sup>	225	245	108.9	251	111.6
Pulses	30	18	60.0	16	53.3
Edible oils	20	10	50.0	13	65.0
Spices	10	12	120.0	15	150.0
Fruits	50	17	34.0	28	56.0
Sugar & gur	10	9	90.0	7	70.0
Fish	45	35	77.8	38	84.4
Meat & poultry	34	13	38.2	19	55.9
Milk & milk products	30	19	63.3	30	100.0
Total	944	887	94.0	893	94.6

Note:

1. Refers to the minimum balanced nutritional requirements as specified by the Bangladesh National Nutrition Council.
2. Include miscellaneous items not included in other categories.

Source: BBS 2001.

**Table 6: Landownership and Poverty**

Land holding (acre)	% of population below poverty line		
	Rural	Urban	National
Landless	69.4	51.2	67.6
Less than 0.05	65.2	43.0	63.2
0.05-0.49	59.4	34.7	57.9
0.50-1.49	47.6	27.6	46.3
1.50-2.49	35.7	12.3	34.7
2.50-7.49	24.4	15.9	23.9
7.50 and above	8.1	0.0	8.0

Source: BBS 2001.

The above characteristics indicate several factors which can have significant influence in increasing the incomes of the poor. Access to land and nonfarm activities, education, credit to acquire productive assets, and basic infrastructure like road and electricity are important avenues to assist the poor in increasing incomes. Obviously, high economic growth that generates decent income and productive employment for the poor is the key element to widen socioeconomic opportunities and bring improvements in non-material dimensions of well-being of the poor.

### **3. Performance and Potentials of Livestock Sector**

Livestock play an important role in the Bangladesh economy which supply various outputs for production and consumption purposes. Along with draft power, livestock provide animal protein through milk, meat and eggs for human consumption and dung as fuel and manure. Although the contribution of livestock sector to GDP is about 3 per cent, livestock provide full-time employment to about 20 per cent of the rural population (Mujeri and Shahabuddin 2001).<sup>2</sup>

#### **3.1 Past Performance**

The growth pattern of agriculture and its sub-sectors is shown in Table 7. Animal farming (livestock) grew at an average rate of about 2.5 per cent per year during the 1990s, higher than the population growth rate of 1.7 per cent. Obviously, the growth potential of the sector is much higher.

Over the years, livestock population increased at differential rates (Table 8). The number of poultry increased rapidly during 1984-1996 while cattle/buffalo and goat/sheep registered a slow increase. Except poultry, the number of other animals on both per holding and per capita basis declined. This largely reflects the scarcity of land for pasture for larger animals and the scavenging potential of poultry.

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<sup>2</sup> The indirect contribution of livestock is, however, large. According to the 1993/94 input-output table, the total value of intermediate deliveries of livestock (including poultry) was Tk. 41,710 million. This largely comprised of draft power, manure and other inputs. Moreover, tolls (*hasil*) collected from market transactions of livestock animals, including those collected during the religious festival of *Eid-ul-Azha*, constitute a significant source of revenue for local government institutions like Union Parishads and City Corporations.

**Table 7: Agriculture and Livestock Growth in the 1990s**

(Per cent at constant 1995/96 prices)

Sector	Average	2000/01	2001.02 <sup>a</sup>
	1991-2000		
Agriculture	3.1	5.5	3.0
Crop & horticulture	1.6	6.2	2.8
Animal farming	2.5	2.8	2.9
Forest & related activities	3.6	4.9	4.9
Fishing	8.3	-4.5	2.1
GDP	4.8	5.2	4.8
Population	1.7	1.5	1.5

a      Projected.

Source: BBS 2001.

**Table 8: Growth of Livestock Population: 1984-1996**

Animal Type		Agriculture Census		% change 1996-1984
		1984	1996	
Cattle/Buffalo	Total number (million)	22.06	22.29	1.04
	No. per holding	1.60	1.25	-21.88
	No. per capita	0.26	0.18	-30.77
Goat/Sheep	Total number (million)	14.22	14.61	2.74
	No. per holding	1.03	0.82	-20.39
	No. per capita	0.17	0.12	-29.41
Poultry (Chicken/duck)	Total number (million)	73.71	126.67	71.85
	No. per holding	5.33	7.10	33.21
	No. per capita	0.91	1.04	14.29

Source: BBS 1999.

The production of livestock products is shown in Table 9. During the 1990s, production of eggs grew at 8 per cent per year while growth of both meat and milk/milk products was slow at 4 per cent and 2 per cent respectively.<sup>3</sup> Despite the increase, the per capita availability is low: 35.3 grams for milk and milk products and 13 grams for meat per

<sup>3</sup> The increased production of livestock products during the 1990s was led by commercial farms. During 1997, about 50,000 poultry farms, 26,000 duck farms and 26,000 dairy farms existed in the private sector. Since then, there has been a rapid growth of poultry, dairy and goat farms by private entrepreneurs. During 1997-1999, 15,094 private poultry farms were established or expanded in and around Dhaka and Chittagong cities. In addition, 13,232 goat farms, 8,608 sheep farms, 11,535 duck farms, and 7,043 dairy farms were established throughout the country (Planning Commission 1998, 2000).

day. In case of eggs, consumption per person is one egg in 14 days (Shahabuddin and Quasem 2002).

**Table 9: Production of Livestock Products**

Product	Unit	Production level		Annual growth (%)
		1991	2000	
Milk & milk products	Million metric tons	1.34	1.60	2.04
Meat	Million metric tons	0.45	0.62	3.86
Eggs	Million number	2040	3500	7.95

Source: MOF 2001.

Although large in number, the production of meat, milk and eggs per animal (or bird) is relatively low in Bangladesh. This reflects a wide range of problems with the livestock sector. Meat and milk production is low because animals are kept primarily for farm work, these are poorly fed, and suffer from a variety of diseases and parasites. The production of meat and eggs per chicken is low since most of these are 'running birds' which scavenge for feed having high mortality rates due to diseases and predators. The yield of meat and milk from goat compares more favourably with neighbouring countries despite lack of feed and care (Mitchell 1997).

### **3.2 Potentials of Livestock Sector**

The potentials of livestock sector are constrained by three important factors: lack of feed, disease, and poor genetic stock. These problems are intertwined. The lack of feed keeps the animals and birds in weak conditions which make them susceptible to diseases. Diseases increase mortality and make animal production less profitable reducing incentives for feed production. Poor genetic potential reduces feed-use efficiency which increases feed requirements.

The growth potentials of livestock sector depend on effective measures to address the above and related marketing and institutional problems. A basic concern of the sector is that its potential is still underutilized and the sector can make much greater contribution to economic growth and poverty reduction efforts in the country. For this, several concerns need emphasis in livestock development policies: disease control, feed supplies, improving

genetic potential of stocks and balancing herd size, optimal utilization of available resources, and effective support and marketing services.<sup>4</sup> The quantity and quality of livestock services need improvements to ensure that the incentive structure becomes favourable for the producers to adopt improved technologies and production practices generating higher incomes. In particular, government efforts are needed in three major areas where externalities are large: animal health, research, and extension. Improving livestock management practices by the farmers will improve animal health and contribute to disease control since the farmers will better understand basic nutrition and health problems. In these efforts, extension agents and specialists of the Department of Livestock Services (DLS) can play effective roles. While the participation of the private sector and the NGOs have significantly expanded in many areas of livestock development in recent years, more effective Government efforts particularly in areas of disease control, research and education, and productivity are necessary to encourage and motivate further private sector participation.

### **3.3 Livestock Development: Key Policy Issues**

The strategy for livestock development requires a comprehensive approach to ensure optimal utilization of available resources supported by improved services, marketing links and institutions to meet both domestic requirements and tap new opportunities in the export market. For this, a well-integrated Livestock Sector Policy is necessary to guide development interventions with emphasis on two elements: exploitation of livestock potential in consistent with resource availability and comparative advantage; and adoption of improved technologies to enhance productivity. In particular, the strategy needs to consider several aspects of changes in the market and demand for livestock products e.g. population growth, urbanization, increase in per capita income, and changes in relative prices. With urbanization and income growth, the demand for livestock and poultry products will increase at a faster rate in the future.<sup>5</sup> For increasing production, three characteristics of livestock production need explicit consideration:

- (i) The past growth has been rapid for chicken and goat compared with large animals (e.g. cattle) reflecting scarcity of land for pasture and the scavenging potential of chicken and goat;

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<sup>4</sup> For details, see Mujeri and Shahabuddin 2001.

<sup>5</sup> The income elasticity of demand for livestock products is higher relative to cereals and other products. A 10 per cent increase in per capita income of rural households will increase demand by 16 per cent for livestock products, 8-9 per cent for fish and edible oil, 5-6 per cent for potato, vegetables and spices, and by 2 per cent for rice and wheat (Hossain and Shahabuddin 1999).

- (ii) The bulk of the production is supplied by smallholder farmers. Cattle and buffalo are raised primarily for draft power by these farmers while goat and sheep are raised for meat under the scavenging system and these animals are well adapted to local conditions. The animal productivity, however, is low; and
- (iii) Chicken and duck, raised in small flock by rural households under scavenging systems, are the major suppliers of meat and eggs.

The above indicates that increasing the productivity of the small ruminants (e.g. goat and sheep) and poultry of the smallholder farmers with due recognition of localized production characteristics is an important source for expanding output of the livestock sector. As we shall see later on, this has significant implications for poverty reduction efforts in the country.

### **3.4 Potential for Smallholder Livestock Development**

As we have noted earlier, the smallholder livestock production has a large potential to improve its productivity and increase the benefits to the rural poor. The smallholder farmers mostly own poultry and goats rather than large stocks. A pro-poor livestock policy needs to consider as to why the poor households tend to own smaller animals, and how to support such ownership and relieve constraints to increase their ownership of large animals. Several factors are important which determine the livestock ownership pattern of the poor households e.g. small animals require less capital to buy and resources to maintain; simplify distress sales and reduce risks of loss due to death or theft; grow and breed faster; and can thrive on harsher conditions.

In this respect, the productive role of the local Black Bengal goat needs emphasis which is disease resistant, prolific breeder and able to live off scavenged feed. The skins are also of high quality and a major source of export earnings. For expanding its contribution, efforts are needed to (i) improve the breed to increase meat and milk production while retaining its disease resistance and skin quality; (ii) reduce mortality of kids by improved veterinary care, training for goat rearers and improved feeding; and (iii) increased feed supply to meet acute seasonal shortages particularly during the rainy season.

The poor households who cannot afford to rear goats or cattle, usually maintain a small number of poultry under the scavenging system as an additional source of income. The

productivity of these local birds is low but the profitability is relatively high since very little or no purchased inputs are used. The supplementary income can also be derived within a short time.<sup>6</sup>

While commercial livestock production (in which generally one type of livestock becomes the dominant activity) is gaining importance in recent years, the sector is still predominated by rural households (and small farms) rearing a variety of species in small numbers. So far, the segment has remained mostly neutral to improved technology and management with low output per animal and bird.

The potential of the smallholder livestock production system needs to be exploited through giving priority, in addition to cross-cutting sectoral issues, to four critical areas: feed supply, animal health and disease, genetic stock, and marketing network. The issues are intertwined and require a sequenced approach. Improving feed supply needs priority since this will lead to increased output of existing stock of animals and birds creating direct impact on production and incomes of small producers. This will also contribute to better health and higher disease resistance. The interventions will also be cost-effective since the technology package with balanced feed is available. The approach should be to strengthen extension services to make livestock farmers aware of the benefits and take steps to make the feed readily available at competitive prices. The next priority is to focus on marketing services so that the farmers can realize fair prices of their products. This will provide incentives to the farmers to adopt improved production practices and new technologies and 'invest' in animals in terms of feed, animal care, and other services. This should be followed by a focus on disease control and animal health services. Along with curative services, the emphasis needs to be placed on educating farmers on basic health needs and preventive measures (e.g. vaccination). This will significantly contribute to reducing risks of income/asset erosion of small producers through mortality. The next priority is to introduce improved breeds of animals/birds which are adaptable to local conditions. Training to farmers on selecting the best breed and managing the animals/birds in an efficient way needs emphasis to improve the quality of the existing stock and sustain their productivity.

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<sup>6</sup> It is estimated that an investment of Taka one in poultry raising brings about Taka two in one year.

Along with the above areas, general improvements in basic infrastructure e.g. transport, processing and storage facilities, information and communication networks, and conducive macro and sectoral policies will be important to provide 'right' signals and ensure adequate incentives to smallholder livestock producers.

#### **4. Poverty Reduction through Livestock Development**

With poverty reduction as the central challenge, Bangladesh needs to adopt policies that promote labour-intensive growth accompanied by activities that enhance the access for the poor to productive assets, credit, infrastructure and technology. Since the poor mostly live in rural areas and depend on agricultural activities, developing the rural areas through accelerating growth of agriculture and nonfarm sectors, improving coverage and quality of social services, ensuring proper functioning of rural institutions, and expanding rural infrastructure are important for Bangladesh in reducing poverty.

In terms of structure and sectoral composition, the poverty-reducing role of agriculture is emphasized in Bangladesh (Mujeri 1999, 2000). Growth of agriculture brings about growth of the rural economy. Besides, productivity gains and falling real agricultural prices that accompany agricultural growth allow the supply of low-cost food to the people, improve their nutritional status, and enhance food security. The policies for increasing agriculture's ability to reduce poverty, however, should recognize several realities. The household income of the poor and small farmers will not increase much through improvements in crop technology due to small size of their holdings and unfavourable terms of trade of the major crop (rice).<sup>7</sup> Improvements in crop productivity will contribute more in terms of increasing supplies and reducing unit cost of production. This will enable access to food by the poor at affordable prices. The low food costs will also have a positive impact on real wages with a sobering effect on demand for nominal wage hikes. This will contribute to increasing Bangladesh's competitiveness in labour-intensive non-agricultural and manufacturing activities. The poor will gain more if their education and skill levels are improved to access employment opportunities in these industries. However, for increasing

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<sup>7</sup> The changes in land ownership reflect growing landlessness in the country. Agriculture in Bangladesh is dominated by small and marginal farmers. The number of farmers who are landless and functionally landless (owning less than 0.2 ha) was 10 million in 1996 (56 per cent of total rural households). During 1996, small (0.21-1.01 ha) and marginal (0.04-0.20 ha) holdings accounted for 81 per cent of the farms with 41 per cent of the total operated land. See BBS 1999. For evidence on falling real rice prices, see Mujeri 2001.



household income, expansion of noncrop agriculture (e.g. livestock) and nonfarm activities needs to be targeted.

#### **4.1 Importance of Livestock in Poverty Reduction**

As we have seen from the poverty profile, the incidence of poverty in rural areas is closely associated with landownership. The scope of redistribution of land, however, is extremely limited in Bangladesh. In 1996, there were 1.8 million households who did not have any land while 8.2 million had less than 0.21 hectares and another 5.5 million had less than 1.01 hectares. Thus, out of a total of 17.8 million rural households, 15.5 million were either landless or marginal/small farmers (BBS 1999). With such a limited scope of accessing the traditional asset (land), it is important for poverty reduction to ensure a broad-based asset access to the poor. Such a broad asset framework should cover, in addition to productive physical assets, several elements: human assets such as basic education and skills, financial assets like microcredit, natural assets such as common property resources, social assets through grassroots organizations of the poor leading to better networking capacity and risk-insurance mechanism; and political assets to enhance voice and ensure fair access to public services and growth benefits.

In terms of access to productive assets for the poor, livestock have several advantages. The poverty reduction effects of livestock operate through a number of channels: rearing of domestic animals/birds is a major source of food, cash income, and a storage of savings; with small land requirements and potentially high returns, poor farmers can diversify income sources, enhance family incomes, create asset base and meet emergencies; and poor women can create access to income and empowerment. Although all animals are important assets, the poor households have an advantage in case of small animals (goat, chicken/duck) since these involve less resources and costs to acquire and manage. These animals can be reared inside the homestead under a semi-scavenging system supplemented by crop/household residues. Moreover, these are mostly managed by women giving them the opportunity to contribute to household income and nutrition. Most of the poor households in Bangladesh are involved in this production system although the productivity of the animals is low and losses due to diseases and predators are high.

## 4.2 Employment and Income Generation of Livestock Activities

We shall examine two major channels of livestock sector activities that contribute significantly to poverty reduction: employment generation and increase in household income of the poor.

Some features of employment in the livestock sector may be noted. According to the 1993/94 Input-Output Table, value added in the livestock sector (including poultry) was Tk. 43,389 million (Tk 7,760 million for poultry and Tk 35,629 million for other livestock) during 1993/94 (Planning Commission/BIDS 1998). Employment characteristics of the livestock sector are given in Table 10. Despite low contribution of around 3.5 per cent to GDP, the share of livestock sector in employment is relatively high: 16 per cent of total employment in the economy. In employment in agriculture, the share of livestock is 39 per cent (7 per cent for poultry and 32 per cent for other livestock) compared with a share of 15 per cent in agricultural value added. This shows the high employment generating capacity of the sector with significant poverty reducing potential since the bulk of the employment involves unskilled labour supplied by the poor. It is also significant to note that the estimated labour coefficient is the highest for livestock sector – 85 person years for cattle and small ruminants and 67 person years for poultry per million Taka of gross output. These numbers provide sharp contrast to similar figures for the rest of the economy (32 person years for agriculture as a whole and 18 person years for all sectors).

**Table 10: Employment Characteristics of Livestock Sector, 1993/94**

	Employment (million person year)			Direct labour coefficient <sup>a</sup>	Value added (per cent of gross output)
	Total	Share (per cent)			
		Hired	Family		
Livestock	6.95	21.9	78.1	81.3	50.8
Poultry	1.18	22.0	78.0	67.3	44.3
Other livestock	5.77	21.9	78.1	85.0	52.5
Crops	8.98	59.7	40.3	28.0	54.8
Fishery	1.40	31.1	68.9	18.5	47.9
Forestry	0.35	37.9	62.1	5.1	43.8
Agriculture	17.68	42.2	57.8	32.1	51.9
All sectors	43.20	74.0	26.0	17.7	50.9

a In person-year per million Taka of gross output

Source: Planning Commission/BIDS 1998

Another important characteristic of livestock employment is the significant use of family labour. This indicates the predominantly subsistence nature of livestock activities in which family labour is widely used for rearing animals and poultry birds as a source of supplementary family income, particularly by women in poor households. This is corroborated by the fact that nearly 18 per cent of the total microcredit (Tk. 60 billion) disbursed by the NGOs till June 1999 were given to the livestock sector (CDF 1999). These were used by the poor women mostly in rural areas. In addition, Bangladesh Rural Development Board (BRDB) and other line ministries/agencies provide credit and support services to the poor (particularly women) for poultry-raising, dairy farming, cattle fattening and other activities in the livestock sector. The above indicates that livestock growth, despite its slow nature, has made large contributions towards generating employment (self-employment in particular) for the poor in rural areas. The labour intensive nature of livestock operations is a strong element of livestock growth that contributes to poverty reduction.

With multiple role of livestock in the rural economy, the households derive benefits from livestock in several ways. In addition to income, as mentioned earlier, there are other benefits for which monetary valuation is difficult. The per capita value added from the livestock sector, at constant 1995/96 prices, was Tk. 431 in 1979/80 which increased to Tk. 459 in 1999/00 (BBS 2001). This reflects a slow growth of the livestock sector.

The important issue from the poverty reduction point of view, however, is: has the income of the poor households increased? While conclusive evidence are not available, some information indicates a low share of livestock income for the rural poor households – less than 4 per cent of total household income in 1997 (Table 11). The low share is largely explained by the inequitable distribution of livestock resources among the poor and nonpoor households, which is linked with the distribution of land, the major asset in rural areas. Between 1984 and 1996, the share of nonfarm households (defined as those rural households with no operated land, no cultivated land, and with cultivated land less than 0.5 acre) in rural households increased from 28 per cent to 34 per cent. However, the majority of livestock resources are owned by farm households (Table 12). In 1996, the nonfarm households possessed less than 10 per cent of total number of cattle/buffalo and around a fifth of total number of goat/sheep and chicken/duck in the country. The per cent of nonfarm households who own livestock animals in total nonfarm households is less than similar percentage for

farm households. The average number of animals per nonfarm households is also less than that for farm households.

**Table 11: Income Sources of Rural Poor Households, 1997**

Source	% of monthly household income
Crop agriculture	22.2
Livestock/poultry	3.6
Fisheries	0.3
Forestry	2.0
Daily wages	47.5
Unincorporated enterprises	12.7
Others	11.7
Total	100
Income (Tk.)	2,148

Source: BBS 1998.

**Table 12: Livestock Resources of Rural Farm and Non-farm Households**

	Share of nonfarm households in total number of animals (%)		Holdings with:	1996			
	1983-84	1996		Farm		Nonfarm	
				Per cent of holdings	Average No.	Per cent of holdings	Average No.
Cattle/buffalo	5.0	9.5	Cattle	59.4	2.8	19.3	1.7
Goat/sheep	14.2	20.7	Goat	35.7	2.4	22.8	2.0
Chicken/duck	14.9	21.0	Chicken	82.5	7.9	64.2	5.4

Note: The share of nonfarm households, as defined here, was 28 per cent in 1984 which increased to 34 per cent in 1996.

Source: BBS 1999.

The above indicates that livestock have so far played a limited role in increasing incomes of the poor households. The scope, however, remains wide for promoting the poverty alleviating role of livestock through efforts to increase livestock resources of the poor households. In this respect, along with poultry, which has significant advantages due to its low resource and input requirements, the role of small animals (e.g. goat) is important for improving incomes and livelihood of the poor households. The poor and landless farmers often proceed from poultry rearing to more resource-demanding activities (e.g. goat and cattle) as their financial resources increase and management skills improve and credit from

microfinance institutions (MFIs) becomes available. For the land-poor households, goat raising provides an attractive option, as a credit-financed activity.

### **4.3 Using Livestock to Reduce Poverty**

By adopting appropriate livestock practices, the sector (in particular poultry and goat) can make substantial contribution to increasing productivity and incomes of small and poor households. This will enhance family and cash income, contribute to nutrition, and provide fuel and fertilizer with favourable environmental impacts. With expansion of livestock markets, agricultural production can also become more market-oriented. The scale of production, however, needs to expand to facilitate greater use of improved technologies. For instance, while there are limits to improvement of productivity of farm chickens on a small scale, rising productivity becomes possible by reaching a minimum threshold number of chickens to create backward linkages through chick supplies and forward linkages into marketing. This will contribute to increasing both off-farm and on-farm employment and income. With economic growth, markets for eggs, milk and meat will expand rapidly leading to greater demand for livestock products. Through appropriate policies, decentralized urban development can contribute to expanding markets for livestock farmers as well as generating off-farm employment opportunities for the poor farmers. Increased demand for livestock products will also encourage the farmers to expand production and move towards commercial farming.

Another important aspect of the role of livestock in reducing poverty is its impact on poor women. Being the most disadvantaged among the poor, it is clear that specific policies are needed to raise the standards of living and status of poor women through increased participation in productive activities and employment opportunities, and access to education, health and social services. In addition to farming activities, traditionally poor women take the responsibility for, and have some access to, income from poultry (chicken and duck), eggs, milk, and goat. Actions to provide greater access to poor women to traditional livestock resources (poultry, goat) as well as supporting the development of new 'women's' products (e.g. rabbits) can have immediate and direct impact on nutrition levels of poor households, particularly women and children. The additional cash incomes would contribute to meeting the needs of women and children that would otherwise not be met (e.g. schooling). Thus, the potential poverty reduction impact of livestock interventions could be wide not only in terms of reducing income poverty but also through positive effects on human poverty and

demographic transition (e.g. by improving health and nutrition status of women and children).

The improvement of women's economic conditions and social status, however, should not be confined to traditional livestock systems. Opportunities for women's participation in the sector should expand as the sector grows. With increases in the scale of operation, technological and capital requirements will rise. In order to incorporate the poor and women farmers into commercial livestock farming, emphasis is required on raising their level of skills and access to credit and support services to meet the more advanced technological and entrepreneurial needs. This has occurred, to a certain extent, in poultry and dairying through government and NGO efforts. But a more coherent and wider approach is necessary for creating and sustaining larger impacts. Appropriate policies, supported by credit and other services, are needed to involve the poor households, including the destitute women, in livestock activities.

## **5. Concluding Remarks**

Over the years, the Government as well as the NGOs have placed significant emphasis on the livestock sector recognizing its role in the rural economy and poverty reduction efforts. More specifically, the vulnerability of the poor farmers to natural disasters and the scarcity of cultivable land relative to large number of farmer households make livestock animals a significant hedge against risks for the poor rural households. Moreover, livestock (particularly goat) and poultry raising is an important source of cash income for landless and marginal farmers.

### **5.1 Priority Policy Issues**

Several strategic areas need priority in creating a dynamic livestock sector in the future:

First, development of the commercial component of the livestock sector requires a facilitating policy environment and a level-playing field such that private entrepreneurs are able to exploit potentials in both domestic and external markets. Along with ensuring supply to meet domestic requirements, export opportunities (e.g. poultry) need to be explored. In the post-WTO era, the Agreement on Sanitary and Phytosanitary (SPS) measures has implications for

Bangladesh's exports of livestock products. Bangladesh needs to harmonize SPS and Technical Barriers to Trade (TBT) measures with international standards. The application of good veterinary practices (GVPs), good hygiene and manufacturing practices and adoption of quality assurance systems will contribute to opening new opportunities by ensuring safety and quality of livestock products.

Second, for the smallholder livestock production system, in addition to cross-cutting sectoral issues, four critical areas need priority: feed supply; animal health and disease; genetic stock; and marketing network. The issues are intertwined and require comprehensive attention.

The Government's policy of economic reforms and liberalization has generated mixed production responses in the livestock sector. The policy of encouraging livestock activities has attracted private investments in commercial poultry and dairy production. On the other hand, the smallholder farmers, who are the majority in terms of ownership of livestock resources, have not benefited much by increasing productivity largely due to inadequate supportive policies and infrastructure.

Despite recent improvements in policies, the Government needs to pursue competitive exchange rate policy, remove tariff anomalies and end-user discrimination, and complement supply-focused livestock policy with a supportive macro and trade environment. The role of the Government should focus on devising and administering facilitating institutions (e.g. legal system, regulations and policies). The aim should be to ensure efficient livestock production and ensure availability of 'public goods' in the livestock sector (particularly research to supply better breeds, marketing and credit facilities) and bring equity, cost-effectiveness and quality of livestock services. Local government institutions, NGOs and other community organizations can be more effectively involved for delivery of such services.

The central aim of public sector programmes should be to help the livestock sector grow faster by creating conditions that remove supply-side constraints and encourage demand linkages. Public actions need to address specific concerns in two areas where private initiatives are lacking: first, supply side factors channeled through input markets (e.g. research, technology, markets, infrastructure and institutions) that support access and

availability of resources and inputs to the farmers; and second, structure of incentives that provide price signals to livestock producers.

The development of poultry needs to be pursued along three broad lines: (i) production of local birds (under the scavenging system) providing meat and eggs mostly in rural areas where refrigeration and modern processing facilities are not available; (ii) small and commercial poultry farms in urban/peri-urban areas using intermediate technology catering to the needs of urban market; and (iii) modern poultry production with links to the external market. The production of local birds has high potential for providing income opportunities to the rural poor, particularly women, for several reasons: the demand for meat and eggs of local breed of chicken is growing rapidly; the production process of local birds can operate efficiently at a very small scale (household level) under the scavenging system; and premium prices of meat and eggs of local poultry can be received compared to commercial poultry by the local producers (due to consumer preference) providing additional opportunity to earn profits. The smallholder poultry rearers need improved varieties of local birds, better disease control measures, and better management practices. Similarly, increased access and supportive marketing and other services for goat rearing by the poor households will contribute to improving one of their most pressing constraints: lack of productive assets and inadequate investible resources to pursue productive livelihood activities.

## **5.2 Conclusions**

Along with increasing livestock sector growth, it is important for Bangladesh to enhance its poverty reduction role given the structure of landownership and limitations of land to serve as a productive asset for all rural households. It needs to be recognized, however, that reducing poverty is not a question of increasing livestock production or generating higher livestock incomes. Poverty reduction requires addressing the underlying institutional, structural, and socioeconomic factors that determine the access of the poor to resources and voices and regulate competing claims of various groups in the society. At the present stage of development of the livestock sector, the priority is to ensure its productivity growth to generate cash income for the poor livestock farmers, improve their nutritional status, and support seasonal stress management. It is true that household income of smallholder livestock producers will not increase much through improvements in technology due to small size of their herds. Nevertheless, the resulting increased income and access to livestock assets with potentially higher returns will help them to diversify incomes and



enhance chances of getting more remunerative jobs by improving education and skill levels. Moreover, a policy of geographical targeting of livestock development efforts to agriculturally depressed areas (with potential of livestock development) can contribute significantly to overall poverty reduction in the country. These concerns should be considered important parts of livestock development agenda in Bangladesh.

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