

Draft

LIVESTOCK POLICY AND ACTION PLAN

DEPARTMENT OF LIVESTOCK SERVICES

**MINISTRY OF FISHERIES AND LIVESTOCK
GOVERNMENT OF BANGLADESH**

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The study was conducted by a team of national and international consultants, specialized in various fields of livestock and related subjects/areas.

Team Composition

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Methodology

The national team leader initiated the work on 11 September, 2004. The international team leader was available in December, 2004. Other team members joined the study in February, 2005. The study was conducted in an inclusive manner, with a combination of analytic, investigative and participatory approach. Through a process of consultation with stakeholders and the project Steering Committee, the following main areas of focus were identified as important topics to be addressed in livestock policy: (a) dairy development and beef fattening, (b) poultry development, (c) breeds and breeding, (d) feeds and animal management, (e) veterinary services, (f) institutional analysis of DLS and BLRI, (g) hides and skins, (h) marketing of animal products, and (i) international trade, livestock insurance and credit.

The process followed for developing recommendations began with a thorough review of the literature, with particular emphasis on the previous studies and recommendations of the DANIDA supported MOFL-PPSU studies. Field trips were conducted to a wide variety of locations throughout Bangladesh, covering a broad range of production and institutional sites. Emphasis was on small scale production and related services aimed at small scale producers. The field trips enabled gathering of primary information from important stakeholders and to engage in discussion with farmers and extension personnel.

Important stakeholder discussions in separate groups were held, mostly during field visits, for example, District and Upazila livestock officers. Participating farmers and other stakeholders including small industry representatives were encouraged to offer their views as to what constraints needed to be addressed; where the gaps in extension and services exist, and what seemed to be working well. This information was particularly valuable to identifying areas of policy strengths and weakness. These sessions were informal and unstructured to allow free expression of ideas and opinions. Discussion was usually quite lively, often leading to debate over the issue at hand, and always leading to useful conclusions incorporated in this report. Brainstorming sessions were also held with key stakeholders in dairy, veterinary services, hides and skins, poultry, and insurance and credit, representing public and private sector.

National consultants were encouraged to reflect on the constraints identified and focus on the issues surrounding the constraints, rather than list technical or other constraints in exclusion of wider deliberation. This led to identification of potential areas that need to be addressed through policy, development of policy options, and for the most important issues, a brief outline of action plans.

These initial findings have been presented to DLS and MOFL and discussed with other stakeholders. Their valuable feedback has been incorporated into this draft. Further comments are expected and will also be incorporated. Final presentation of recommendations is expected in mid-July 2005.

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EXECUTIVE SUMMARY

Although a national livestock policy was drafted in 1992, it was neither officially approved nor implemented, leaving the country's livestock sub-sector without a federally directed plan for public support services. Furthermore, the document was not developed through a process of analysis of constraints and consideration of a portfolio of options in dialogue with the stakeholders. With the assistance of DANIDA, the livestock sub-sector was reviewed and important recommendations were made for change (PPSU/MOFL, 2004). Most of those recommendations were considered valid but have yet to be implemented, including the strongest recommendation calling for reform of the Department of Livestock Services (DLS) by redefining its functions and organizational setting. A further review of the sub-sector, with the purpose of formulating national livestock policy under a project titled BGD/98/009, "Community Livestock and Dairy Development Project" (CLDDP) funded by the United Nations Development Program, was requested by MOFL. This document presents the findings and policy options, based on the review, built around detailed findings of nine individual thematic studies which made a concerted effort not to duplicate previous work but to build on information already presented. The purpose of the project was to assist MOFL in formulating a national livestock policy and action plan. The nine thematic studies include: (a) dairy development and beef fattening, (b) poultry development, (c) breeds and breeding, (d) feeds and animal management, (e) veterinary services and animal health, (f) institutional analysis of DLS and BLRI, (g) hides and skins, (h) marketing of livestock products, (i) international trade, livestock insurance and credit.

The study was conducted in a participatory manner, with the involvement of livestock farmers, input providers, private small and medium dairy and poultry entrepreneurs, NGOs and public sector organizations, Ministries, Banks, Insurance Companies, Veterinary Colleges and University Faculties, and donor representatives; and it was guided by PRSP objectives and Millennium Development Goals.

Livestock is a growing sub-sector. Its share of agricultural GDP represented by livestock in Bangladesh rose from 7.6% in 1974-74 to 12.9% in 1998-9, mainly due to growth of the poultry sub-sector and to a lesser extent the dairy sub-sector, and has been estimated at nearly 16% in 2004 (GOB, 2004). This share is predicted to rise to 19.9% by the year 2020. The growth rate in GDP in 2003 for livestock was the highest of any sub-sector at 4.5%, compared to 3.2% for crops and 2.3% for the fisheries sub-sector. These changes have been prompted by a rapid growth in demand for livestock products due to increases in income, rising population numbers, and urban growth. This phenomenon has been referred to as the Livestock Revolution.

The current contribution of livestock to the overall GDP is approximately 3.4% (Islam, 2004), which is reported to be underestimated. According to MOFL, the contribution of livestock sub-sector to GDP was about 15% (MOFL, 1991). It provides 15% of total employment in the economy, and its share of employment in the agriculture sector is 39%. The livestock sub-sector offers greater employment opportunities particularly for the rural poor, many of whom regard livestock as their only livelihood option. Small-scale livestock farming during 1993-2002 provided self-employment to approximately 3,000,000 poor women (DANIDA, 2002). Livestock is an integral component of the agricultural economy of Bangladesh performing a central role in the livelihoods of poor people. Of the estimated 134 million people living in Bangladesh, more than 75% rely on livestock to some degree for their livelihood. Livestock provide a source for food, nutrition, income, savings, draft power, manure, transport and a host of other social and cultural functions.

The importance of livestock production has increased in Bangladesh as witnessed by the growth of the sub-sector over the last two decades and the contribution to employment in the country. In 2005, the

numbers of livestock in Bangladesh are estimated to be 22.6 million cattle, 1.06 million buffalo, 18.4 million goats, 2.38 million sheep, 164.1 million fowls, and 13.5 million ducks (DLS, 2005). According to partial figures from Bangladesh Bank (2003), the growth rate in GDP for livestock was the highest of any sub-sector at 4.5% compared to 3.2% for crops and 2.3% for fisheries. Bangladesh Economic Review 2004 shows steady growth of livestock compared to crops, fisheries and forestry

Technological change in livestock sub-sector has been slow compared to crop sub-sector. During the period when Green Revolution was achieved in crop agriculture through technological change and appropriate policy interventions, livestock sub-sector remained less sensitive and responsive to its developmental needs. It is only in recent years, some technological interventions and limited policy reforms, particularly in poultry sector has made significant impact on livestock production. However, the growth of livestock could not be enhanced due to declining public expenditure in the sub-sector. Annual revenue allocation to the Department of Livestock Services has declined from 0.57% of the annual national budget in 1997-98 to 0.38% in 2003-04 (DLS and Bangladesh Economic Review 2004). Annual operating cost available for DLS from revenue budget is only 4.7% and for BLRI is 5.6% (DLS and BLRI 2005). Allocation of development budget appears stable, but in real terms, the allocation has declined (Raisuddin, IFRI 2002).

Poultry and dairy farming has certain specific advantage over crops, fisheries and forestry. They require less land, least influenced by seasonal change, and the supply of animal origin food is disproportionately low against high demand. The current intake per caput of animal protein in Bangladesh is less than 2g per day, against the FAO recommendation of 28g per day. Similarly, domestic milk production accounts for only 14% of the minimum requirement (DLS, 1999). Milk availability per caput is approximately 30 ml per day against the FAO recommendation of 250 ml. In order to meet the shortfall, milk production needs to grow by 4.2 to 5.6 percent per annum to meet the increasing demand (Hossain and Bose, 2000). Two recent studies have found that dairy generates more regular cash income, and dairy production, processing and marketing generate more employment per unit value added compared to crops (Asadduzzaman, 2000; Omore et al., 2002). This is also the experience of Community Livestock and Dairy Development Project of Grameen Matsha and Poshu Shampad Foundation. There is no clear intra-sectoral study on comparative advantage and profitability, but profit margin of small scale dairy and poultry farming is higher than crop and fish farming as reported by many farmers under this study, if feeds, veterinary services, credit and access to market are ensured.

The potential for livestock development, particularly for small scale dairy and poultry is high, but there are constraints too. Livestock development in Bangladesh is seriously affected by a number of critical constraints. Absence of a comprehensive livestock development policy and a national strategy to enhance livestock production, developed in collaboration with the private sector, is a primary constraint. Policy and institutional reforms, particularly of DLS and its functional arms are of critical importance to induce changes necessary to meet the new challenges caused by globalization, trade liberalization and WTO regulations. Livestock development cannot be achieved through public sector interventions alone. Major involvement of the private sector will be essential. Quality assurance is a critical factor constraining future development of livestock. In the absence of legal and regulatory framework, livestock development in the private sector is taking place in an indiscriminate manner, which has already created serious problems of quality control in livestock products, drugs, vaccines, feeds, and breeding materials.

The Livestock Revolution in developing countries including Bangladesh will continue to rely on increasing use of concentrate feeds, drugs, vaccines, and veterinary services, and will be shaped by both private and public policies. Horizontal and vertical integration in livestock industries will become more important, increasing the need for policy to regulate and guide the actions of stakeholders, especially those in a position to improve the lives of poor and landless livestock farmers. The rapid expansion of the livestock sub-sector has tremendous scope for increasing food production, employment, incomes, and improving the livelihoods of millions of people in Bangladesh.

Policy support creating enabling environment in the livestock sub-sector has to target factor productivity, investments and risks by (a) increasing public investment in infrastructure and public good services, and promoting private investment, (b) inducing shift in relative prices of inputs and outputs to correct market distortion, rationalize the incentive structure for investment and mitigate negative impact on environment, (c) putting in place appropriate legal and regulatory framework, and (d) effecting institutional reform and good governance making both public and private sector more transparent and accountable.

This report has outlined issues constraining the livestock sub-sector in several key areas and has outlined options for change through policy formulation, and presented project options with action plan. The high priority policy recommendations are presented below:

1. Direct development thrust to improving small scale poultry farming and smallholder dairy in line with CLDDP (replicate CLDDP) which has the highest potential for reducing rural poverty.
2. Development of goat, buffalo and duck, which has the potential in selected areas, should be addressed through special projects.
3. Initiate institutional reform of DLS by clearly defining its public good functions and restructuring its organizational setting accordingly.
4. Enact and enforce laws and regulations for quality control of drugs, vaccines, feeds, breeding materials and hides and skins.
5. Provide support for accelerating privatization of veterinary services of private good nature.
6. Support development of market information system.
7. Complete and approve the draft animal breeding policy.
8. Explore all alternatives for producing fodder.
9. Establish mechanized slaughterhouse, with Static Flaying Frame in all municipal areas and strict enforcement of the Slaughter Act.
10. Train officials of MOFL, MOC, DLS, and various livestock related industries to enable them to fully understand WTO Agreements and deal with them effectively.
11. Establish Livestock Insurance Development Fund (LIDF) in the Bangladesh Bank.
12. Establish Livestock Credit Fund in the Bangladesh Bank for distribution of low interest credit to small scale livestock farmers through CBOs.

CHAPTER 1

Purpose and Overview of Livestock Sector

1. Bangladesh did not have a comprehensive livestock policy to steer the development of livestock sub-sector. Its development has been guided by ad hoc policy measures. In 1992 a national policy for livestock was drafted, but was not officially approved and implemented. The policy document was neither clearly based on a detailed process of analysis of constraints leading to objective development of policy options nor it had a clear basis for policy recommendations founded on selection from a collection of policy options arrived at through discourse with all stakeholders.

2. This document is prepared based on the detailed findings of ten individual studies (described below), field surveys, discussions with farmer groups and a series of brainstorming sessions and meetings with key stakeholders. The study is a component of a larger project titled BGD/98/009, “Community Livestock and Dairy Development Project” (CLDDP) funded by the United Nations Development Program. The purpose of the project is to assist the Ministry of Fisheries and Livestock (MOFL) in formulating a national livestock policy and action plan. The study builds heavily on a number of previous studies, including the DANIDA-supported livestock sector review (*Livestock Sector Review and Future Development*), closely following the PRSP thrust and objectives and the Millennium development goals of reducing poverty by half by 2015.

3. Livestock is an integral component of the agricultural economy of Bangladesh performing a central role in the livelihoods of poor people. Of the estimated 134 million people living in Bangladesh, more than 75% rely on livestock to some degree for their livelihood. Livestock perform multiple functions including provision of food, nutrition, income, savings, draft power, manure, transport and a host of other social and cultural functions. Livestock allow the poor to exploit common property resources, such as roadsides and open grazing areas, when they do not have own land to raise livestock.

4. The share of livestock sub-sector has increased relative to crops, fisheries and forestry. The share of agricultural GDP represented by livestock rose from 7.6% in 1973-74 to 12.9% in 1998-99, and has been estimated at nearly 16% in 2004 (Government of Bangladesh, 2004). Furthermore, this share is predicted by IFPRI (Delgado *et al.*, 1999) to rise to 19.9% by the year 2020. The changes occurred mainly due to expansion of large-scale poultry production during the 1990s and to a lesser extent, due to medium to large scale dairy in some pockets of the country (Jabbar, 2004) as well as the expansion of smallholder dairy farming under Milk Vita and Community Livestock and Dairy Development Project along with increased involvement of some NGOs in collection and marketing of milk from small scale rural dairy farmers.

Growth of livestock

5. According to partial figures from the Bangladesh Bank (2003), the growth rate in GDP in 2003 for livestock was the highest of any sub-sector at 4.5%, compared to 3.2% for crops and 2.3% for fisheries sub-sector. Bangladesh Economic Review 2004 shows steady growth of livestock compared to crops, fisheries and forestry, which registered unstable growth (Table 1). These changes have been prompted by a rapid growth in demand for livestock products due to increases in income, rising population, and urban growth. This phenomenon has been referred to as the Livestock Revolution.

Table 1. Sectoral Growth Rate of GDP at constant prices (Base Year: 1995-96)

(in percentage)

Sub-Sector	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Crops & vegetables	- 1.66	- 3.42	1.74	6.44	1.05	3.11	8.10	6.18	- 2.39	2.88	1.67
Livestock	2.42	2.47	2.51	2.58	2.64	2.69	2.74	2.81	4.70	4.51	4.48
Fisheries	7.91	6.79	7.39	7.60	8.98	9.96	8.87	- 4.53	2.22	2.23	3.64
Forestry	2.80	2.84	3.46	4.03	4.51	5.16	4.94	4.85	4.91	4.43	4.48

Source: Bangladesh Economic Review 2004

6. The current contribution of livestock to the overall GDP is approximately 3.4% (Islam, 2004), providing 15% of total employment in the economy. Its share of employment in the agriculture sector is 39%. The livestock sub-sector offers greater employment opportunities particularly for the rural poor, many of whom regard livestock as their only livelihood option. Employment opportunity in livestock is comparable to crops (Table 2). Small-scale livestock farming during 1993-2002 provided self-employment to approximately 3.0 million poor women (DANIDA, 2002). The poverty reduction potential of the livestock sub-sector is high, but there are problems too. Productivity is low, and technical knowledge is quite limited. There is little organized farming of cattle and buffalo; land is a major constraint meaning that feed shortages are critical, and there is a desire by most livestock owners to own more livestock rather than focus on improved methods of more efficient production.

7. The importance of livestock production has increased in Bangladesh as witnessed by the growth of the sub-sector over the last few decades and the contribution to employment in the country (Tables 2-3). Some 90% of rural households keep some livestock, and nearly 20 million households keep cattle under traditional farming systems (BBS, 1994). According to DLS, the current population of livestock (2005) comprises 22.6 million cattle, 1.06 million buffalo, 18.4 million goats, 2.38 million sheep, 164.1 million fowl and 13.5 million ducks.

Table 2. Number of Domestic Animals: (1960-1996)

Type of Animals	Census year							
	1960		1977		1983-84		1996	
	Total No. (000)	Per Capita (No.)	Total No. (000)	Per Capita (No.)	Total No. (000)	Per Capita (No.)	Total No. (000)	Per Capita (No.)
Poultry	20096	0.37	53590	0.64	73813	0.72	126668	1.03
Sheep	477	0.01	508	0.01	767	0.01	1690	0.01
Goats	5660	0.10	8436	0.10	13658	0.13	12920	0.11
Buffaloes	455	0.01	469	0.01	567	0.01	723	0.01
Cattle	18961	0.34	20509	0.25	21495	0.21	21572	0.18

Source: BBS 1993, 1998 and authors' calculations.

Table 3. Employment Characteristics of Livestock Sector, 1993-94

	Employment (million-person-year)		Direct labor coefficient ^a	Value added (% 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

a. In person-year per million Taka of gross output

Source: Planning Commission/BIDS 1998

Technological change and policy reform

8. Technological change in livestock sub-sector has been slow compared to crop sub-sector. During the period when Green Revolution was achieved in crop agriculture through technological change and appropriate policy interventions, livestock sub-sector remained less sensitive and responsive to its developmental needs. It is only in recent years, some technological interventions and limited policy reforms, particularly in poultry sector has made significant impact on livestock production. Intensive farming practices, including environment control modern housing system, improved feeds, modern equipment like gas brooder, nipple drinker, etc. have been introduced along with the use of improved management systems. Introduction of hybrid poultry has greatly improved meat and egg production. A new poultry hybrid called “Sonali” has been developed locally by DLS and is being widely used in some areas by smallholder poultry farmers. Grand parent stock of improved poultry breeds is now available in the country. Milk production has also increased due to increased use of cross bred cows. Use of deep frozen semen for artificial insemination has significantly improved cattle breeding program. Small scale dairy farming has increased due to introduction of modern milk processing and packaging techniques. PPR vaccine for goat has been developed along with PPR identification techniques, which has enhanced goat farming by small farmers. Number of goats has increased from 5.6 million in 1960 to 12.9 million in 1996 (Table 3).

9. Significant advances have taken place in commercial and small scale poultry farming due to changes in public policy. Poultry population has increased from 20 million in 1960 to 126.6 million in 1996 (Table 3). The Government has waived taxes and tariffs on imported inputs for commercial poultry production. Tax holiday for poultry enterprises, and land tax has been made equivalent to what is given for crop agriculture. Poultry industry is also given 20% rebate on electric bills. The Government has imposed ban on the import of table and hatching eggs. Dairy processing and feed mills are now considered as agro-based industry by the Bangladesh Bank. A number of livestock Act is under process of approval. Bangladesh Animal Diseases Act, 2005 and Bangladesh Animal and Animal Product Quarantine Act, 2005 have been promulgated. These policy changes have had positive impact on livestock development.

Public sector expenditure in livestock

10. In general, public expenditure in agriculture (crops, livestock, fisheries and forestry) has declined from 14.0% in 1976-81 to 4.5% in 2000-01 (Raisuddin, 2002). ADP share has declined from 31% in 1971-72 to less than 3% in 2003-04. Annual revenue allocation to the Department of Livestock Services has also declined from 0.57% of the annual national budget in 1997-98 to 0.38% in 2003-04 (Table 4). Annual operating cost available for DLS from revenue budget is only 4.7% and for BLRI is 5.6%. Allocation of development budget has remained more or less stable (Table 5) as in other sub-sectors of agriculture, except forestry in which allocation has increased by about 4%. But in real terms, the allocation has declined.

Table 4. Annual Revenue Allocation to Department of Livestock Services (DLS)

(in million Tk.)			
Year	Allocation to DLS	Annual Budget	% of Annual Budget
1997-98	823	145000	0.57
1998-99	818	167650	0.49
1999-00	882	184440	0.48
2000-01	1005	206620	0.49
2001-02	1189	226920	0.52
2002-03	1170	253070	0.46
2003-04	1108	287830	0.38

Source: DLS and Bangladesh Economic Review 2004

Table 5. Intra-sectoral Allocation of Development Expenditure in Agriculture (%)

Sub-sector	1984-1990	1991-1995	1995-2000	2000-2001
Crops	50.5	45.8	51.5	48.0
Livestock	11.8	13.8	14.4	13.9
Fisheries	16.0	16.9	11.7	12.8
Forestry	13.6	16.3	16.6	20.6

Source: Ahmed Raisuddin, Public Expenditure and Rural Development, Bangladesh, International Food Policy Research Institute, Washington D.C. 2002

Comparative advantage, profitability and competitive strength

11. Poultry and dairy farming has certain specific advantage over crops, fisheries and forestry. They require less land, least influenced by seasonal change, and the supply of animal origin food is disproportionately low against high demand. The current intake per caput of animal protein in Bangladesh is less than 2g per day, against the FAO recommendation of 28g per day. Similarly, domestic milk production accounts for only 14% of the minimum requirement (DLS, 1999). Milk availability per caput is approximately 30 ml per day against the FAO recommendation of 250 ml. In order to meet the shortfall, powdered milk worth \$40–60 million is imported every year. Milk production needs to grow by 4.2 to 5.6 percent per annum to meet the increasing demand (Hossain and Bose, 2000). The national deficit for milk, meat and eggs is 85.3, 90.3 and 85.7% respectively. This illustrates the need for increasing the efficiency of milk, meat, and egg production in the country to increase the intake of animal protein and reduce dependence on other countries for importation of livestock products. Two recent studies have found that dairy generates more regular cash income, and dairy production, processing and marketing generate more employment per unit value added compared to crops (Asadduzzaman, 2000; Omore et al., 2002). This is also the experience of Community Livestock and Dairy Development Project of Grameen Matsha and Poshu Shampad Foundation. There is no clear intra-sectoral study on comparative advantage and profitability, but profit margin of small scale dairy and poultry farming is higher than crop and fish farming as reported by many farmers under this study, if feeds, veterinary services, credit and access to market are ensured. Compared to the neighboring countries, livestock farming in Bangladesh is handicapped by low productivity and low product quality. Average milk yield is 6 L/day for an average lactation period of 240 days (210-300 days). Small farmers do not enjoy the benefits of Government policy. The benefit of tax holiday and low tariff goes almost entirely to importers and large commercial farmers. There is no Act in force and no regulatory body to ensure quality of livestock product to increase profitability and competitive strength. Profit margin and competitive strength can be enhanced with appropriate policy and institutional reforms.

12. Policy support creating enabling environment in the livestock sub-sector has to target factor productivity, investments and risks by (a) increasing public investment in infrastructure and public good services, and promoting private investment, (b) inducing shift in relative prices of inputs and outputs to correct market distortion, rationalize the incentive structure for investment and mitigate negative impact on environment, (c) putting in place appropriate legal and regulatory framework, and (d) effecting institutional reform and good governance making both public and private sector more transparent and accountable.

Major constraints

13. Livestock development in Bangladesh is handicapped by a number of critical constraints. Absence of a comprehensive livestock development policy and a national strategy to enhance livestock production, developed in collaboration with the private sector, is a primary constraint. Policy and institutional reforms, particularly of DLS and its functional arms are of critical importance to induce changes necessary to meet the new challenges caused by globalization, trade liberalization and WTO regulations. Livestock development cannot be achieved through public sector interventions alone. Major involvement of the private sector will be essential. Recent developments taken place in poultry and dairy was possible due to private sector interventions coupled with certain positive changes in public policy. DLS so long has been performing the private sector functions. In the context of increasing participation of private sector in livestock development, it is high time for DLS to transfer the private functions gradually to the private sector and engage in delivering public good services such as enforcement of laws and regulations, quality assurance, disease investigation and surveillance, veterinary public health, policy formulation and strategy development, and facilitating greater involvement of the private sector.

14. Quality assurance is a critical factor constraining future development of livestock. In the absence of legal and regulatory framework, livestock development in the private sector is taking place in an indiscriminate manner, which has already created serious problems of quality control in livestock products, drugs, vaccines, feeds, and breeding materials (details are given in the reports of the veterinary and other consultants). This is seriously affecting smallholder livestock productivity. Establishment of a legal body to conduct quality tests and certify product quality is a critical need.

15. Limited availability and lack of quality feed is a serious constraint to livestock development. In Bangladesh, livestock farmers rely on a combination of both local and imported concentrates and other inputs, a trend that is expected to intensify. Land is a scarce resource in Bangladesh. It is rarely available for cultivation of green fodder. Feed and its high price offer a major challenge for livestock development. Similarly, low coverage of veterinary services (disease diagnosis, drugs and vaccines) and supply of poor quality drugs and vaccines in the market pose a serious threat to smallholder dairy and poultry farms.

16. The livestock revolution in developing countries as well as in Bangladesh relies on a rapidly increasing use of concentrate feeds, drugs, vaccines, and veterinary services. The livestock sector will be shaped by both private and public policies that address the provision of livestock services, particularly animal health services, and policies addressing feed and land utilization, the importation of inputs, exports of livestock and their products, and credit support for the purchase of inputs. Horizontal and vertical integration in livestock industries of the country will become more important, increasing the need for policy to regulate and guide the actions of stakeholders, especially those in a position to improve the lives of poor and landless livestock farmers. The rapid expansion of the livestock sub-sector has tremendous scope for increasing food production, employment, incomes, and improving the livelihoods of millions of people in Bangladesh.

Key challenges

17. Livestock sub-sector faces challenges in several fronts. Policy and institutional reform is a major challenge. Over the last decade, particularly after economic globalization, trade liberalization and WTO regulations, the development perspective has changed. The role of government is shifting. Private sector is becoming a major partner in social and economic development. Reflection of this phenomenon is clearly seen in the current trend of development of poultry and dairy in Bangladesh, where growth is coming from the private sector initiatives. The positive changes so far taken place in the sub-sector were induced by ad hoc policy measures at the initiative of DLS. But the transformation that is needed for rapid development of the sub-sector to contribute to poverty reduction is not properly guided by appropriate public policy. The livestock policy that was formulated in 1992 was not implemented. Policy formulation bears no significance, if it is not implemented. The key challenge would, therefore, be to approve and implement the proposed policy.

18. Similarly, renewal of the Department of Livestock Services (DLS) has never been done since its establishment in 1960. DLS is still performing the private good functions defined during its creation. It continues to provide drugs, vaccines and veterinary services to farmers, which are the functions of the private sector. No attempt has ever been made to redefine the function and clearly divide the responsibility between the public and the private sector, and reorganize DLS accordingly. This is a major challenge facing the livestock sub-sector.

19. The other major challenges include establishment of Acts and legal bodies, enforcement of laws and regulations, and ensuring quality control of feeds, drugs, vaccines, semen and day-old chicks. Access of small scale dairy and poultry farmers to disease diagnosis and veterinary services is one of the key challenges confronting livestock development. This is a problem that cannot be solved by public sector alone. Private sector involvement is crucial, which will require a major drive to privatize veterinary services. In addition to ensuring the quality of feed and rationalizing the feed price, mitigating feed scarcity is also a major challenge.

20. These constraints and challenges associated with each of the nine identified areas for this study are discussed in the following chapters, and recommendations made along with proposed projects for the next ten years. Details are available in each of the individual reports of the consultants. The recommendations in this report focus on policy options that have impact on the livestock sub-sector through better use of resources, leading to more efficient production.

CHAPTER 2

Dairy Development and Beef Fattening

Part I: Smallholder dairy

A. Background/overview

1. There are essentially three strata of dairy producers in Bangladesh: small holder farmers with 1-3 local dual purpose cows who account for about 65% of all cattle; smallholder farmers who raise 1-5 crossbred or local cows for milk production only; and, small to medium sized commercial dairy farmers with 10-20 crossbred cows. Smallholder farmers with dual purpose cattle consider cows an asset to be used for generating cash income from direct sales of milk and offspring, and for traction purposes. Milk is rarely consumed by poor households or fed to calves. This category of farmer is independent and does not belong to any societies/groups, although they may enter into contractual agreement with vendors in exchange for cash advances. These farmers have limited access to micro credit, veterinary services, and other such inputs and rarely have formal training and advanced skills.

2. The second stratum of dairy farmers is the small scale producer with 1-5 crossbred or good quality local cows kept for milking as an important but not necessarily primary source of income. These producers either belong to NGO groups, milk producer cooperatives, or organized milk collectors. NGOs and cooperatives provide them with micro credit, feed and veterinary services based on cost recovery, whereas organized milk collectors do not provide such services. NGO cooperatives and organized collectors regularly collect milk for sale to potential markets through processing. The producers with small to medium sized herds (10-20 or more crossbred cows) produce milk for sale only, usually as the primary source of income. They produce milk that will be sold mostly in fresh pasteurized form either directly or through agents.

3. Total liquid milk production in Bangladesh was nearly two million metric tons in 2003-2004, of which an estimated 90% came from cows; the remainder was from buffaloes and goats. Milk composition averages 4.5% fat for local cows and 3.5% fat for cross bred cows. Milk quality is compromised due to climate, low production per cow, and lack of cooling capacity at farm level. There is a pronounced seasonal pattern of production with peak production occurring in two periods – January-February and May-June. The annual flooding of substantial areas (one-third of the country) in the summer causes a great reduction of grazing areas and subsequent decline in production. Lean procurement is about one third of peak production.

4. According to the Household Expenditure Survey (HES), average per capita daily consumption of milk/milk products was 32.5 gm in 1995-96, less than one-sixth of minimum (250 gm) consumption requirements. This increased to 40.39 gm in 2003-2004 with annual increase of 2%. Increased consumption of milk/milk products largely takes place in urban and peri-urban areas. The cost of production per liter of milk with local cows is estimated at Tk.12–14, and between Tk16–18 for crossbred cows. Cost of production for crossbred cows including non-cash expenditures is Tk18.85 and excluding non-cash expenditure is Tk13.32. Farmers depend on traditional milk vendors or traders to sell milk not entering the formal collection system. As such producers receive around 50–60% of final consumer prices.

5. Milk is marketed through formal and informal systems. The informal system is the largest, accounting for 98% of milk marketed. Milk producers or collectors (vendors or gowalas) bring milk for market sale. Price is negotiated directly between buyer and sellers, ranging from Tk.16-24 per liter. A major market for milk from local cows is the sweet shops which have a preference for its higher fat content. Many

farmers convert surplus milk into indigenous milk products such as “chana” (sweet curd or casein), “mawa” (dried cream), sweetmeat, yogurt, sour curd (from skimmed milk), ghee, cream, and cottage cheese.

6. The formal sector milk collection is dominated by the farmer owned Bangladesh Milk Producers Cooperative Union Ltd. (MPCUL – commonly known as Milk Vita), the Grameen Mostsha and Pasusampad Foundation(GMPF), and other organized collectors such as Aarong, Pran, Amo-Milk, Aftab Dairy, Tulip, Silaidah, Bikrampur Dairy, and Savar Dairy. The formal sector produced 0.235 millions tons in 2003-2004 (2.12% of national production). Milk-Vita has the highest share (63.8%) with 90,000 members under its cooperative societies, followed by Aarong (16.2%) with 28,000 members. Members either under cooperative societies or on contractual arrangement rear both improved local cows or cross bred cows, and the average production per cow per day is 5 liters. Price per liter paid to farmers by the formal collection organizations is Tk.14 which is based mostly on fat content. Milk Vita and GMPF provide strong technical services to members.

7. From 1999, when the provision of incentives of Tk.15,000 was made for smallholder dairy farmers having a minimum 5 cross bred/quality cows, each producing at least 5 liters/day, the number of smallholder dairy farms increased by 52,041, with 15% drop outs annually. As a result, the import of powdered milk dropped. The present import is reported as equivalent to 7.6% of the national production, which is likely to be underestimated if one looks at supply and demand gaps.

8. The consumer price for liquid milk in local markets is Tk14-18/liter; in urban areas the fresh milk price varies from Tk.24 to Tk.28/liter as fresh milk. Pasteurized packaged milk costs Tk.30/liter; milk converted from powder costs Tk.30/liter. The price of sweetened condensed milk is Tk.120/kg. Powdered milk is still cheaper for consumers in cities than is processed packaged fresh milk transported from rural areas. Moreover, due to unhygienic production of milk and dairy products, adulteration and short self-life, an estimated 47% of city consumers prefer milk powder regardless of price for safety reasons and convenience.

9. Small scale dairy farm provides employment for the poorer segments of the population, and average wage paid is Tk. 50/day. The availability of this form of self-employment to rural workers with few alternative employment opportunities is important. The role of the traditional smallholder dairying as providers of self-employment to women is also very common in Bangladesh. Women are responsible for household vegetable and fruit production, poultry raising and taking care of milking cows. Smallholder dairying, an important source of employment for women, provides scope for the poor, with limited access to land or capital, to earn a greater share of their income from livestock/dairy.

10. The production of milk is expected to show a significant increase during the perspective plan (1996-2010) period. Milk production will increase from 1.41 million tons (1999-2000) to 3.34 million tons (2004-2005) and 5.38 million tons (2009-2010). Dairy animals play a crucial role in household food security since it can improve the income and the nutritional status of low-income households. The livestock and poultry sub-sector has turned out to be a promising and dynamic sector with enormous potential for rapid poverty reduction in Bangladesh. The livestock sub-sector as a whole showed modest growth of about 2% annually in the 1990s. Dairy and poultry production on the other hand demonstrated an impressive growth of around 10 percent per annum since the mid 1970s.

B. Main Constraints

11. Dairy farming in Bangladesh is affected by myriads of problems. Major problems identified through review of available reports, publications, interactions with different stakeholders (public and private sectors) in brainstorming session and meetings, and farm visits are presented in Box 1.

Box 1. Major constraints facing smallholder dairy farming

- Limited skill of smallholder dairy farmers
- Scarcity of feeds and poor nutrition
- Susceptibility to diseases
- Limited coverage of veterinary services
- Lack of credit support
- Limited milk collection and processing facilities
- Lack of insurance coverage
- Absence of market information
- Absence of appropriate policy and regulatory bodies

12. Many farmers have established small scale dairy farms with crossbred cows without having adequate knowledge about feeding, management and health care, and marketing. As a result, many of these farms are forced to drop out within few years. Some private firms, collecting milks from contract growers are also facing the problem of training the farmers due to non-availability skilled trainers. Institution to offer skill development training to the farmers does not exist in the country. NGOs provide short duration (3-7 days) training to its beneficiaries, which are not effective to improve skill of the farmers, because they also do not have skilled trainers.

13. Scarcity of land for fodder production is a major problem, particularly for developing large dairy farm. Grazing lands are limited due to extension of cereal crop production. Grasses collected from fallow lands, bunds, roadsides are inadequate and of inferior quality. Most smallholder farmers cannot afford to feed anything more than straws, water hyacinths and tree leaves; some provide little rice bran, molasses and pulses only to lactating cows. As a result, most of the dairy animals suffer from shortage of 44% DM, 26% DCP and 20% ME. Minimum cost for balanced feed for a cow producing 4 liter milk/day is Tk. 52, which may go up to Tk. 75.0 for a cow producing 10 liter milk/day. Against the average lactation period of 180 days to 240 days, cows need to be fed for 364 days. As such the farmers always try to feed less when cows are in dry period or producing less milk. Private feed mills are limited and the feed price is high. As such smallholder dairy farmers have to rely on feeding concentrate feed ingredients procured from the local market. These feeds are adulterated and the price is also high.

DM. Dry Matter. DCP. Dried Crude Protein. ME. Mita bolozable

14. Dairy farming is always a bio-risk enterprise, because animals are subject to a number of highly infectious diseases like Anthrax, Haemorrhagic Septicaemia, Black Quarter and Foot and Mouth Disease (FMD). These diseases are endemic and frequently break out in epidemic forms causing mortality up to 15% annually except in the case of FMD where both mortality and morbidity losses could be more than 80%. Other highly morbid diseases are parasitism and deficiency diseases; local cows are less susceptible than crossbred cows. Protozoal diseases like anaplasmosis, babesiosis and theileriosis are causing high mortality (up to 50%) and morbidity losses (up to 30%) among crossbred cows. Farmers have to count Tk. 150 per cow a year as cost of medicine/vaccines. This is exclusive of the amount paid for attending veterinarians or auxiliary staff, which may stand up to Tk. 500/cow/year. Farmers are not aware of increasing disease susceptibility by grazing in infected Paster or feeding cut grasses from such Paster. Few farmers know about hygienic milking, milk collection and delivery or marketing and keeping all

utensils hygienically clean and dry. This exposes the cows to several reproductive diseases and infection of udder. Reproductive problem is the major problem with small scale dairy farms based on crossbred cows; around 30% of the cows produce less due to this problem.

15. Existing apex body for veterinary services, the Department of Livestock Services (DLS), has limited infrastructure, man power and financial capacity to provide necessary veterinary services to small holder farmers. Outreach capacity is very limited; maximum of 10 km radius of the veterinary hospitals in the Upazila. Vaccines are inadequate (only 10% of the requirements); only 6% of the animals can be treated. Diagnostic facilities are rarely available. Although, vaccination, diagnosis, treatment and A.I. services are subsidized, hardly smallholders can get it free, and fees in most cases are not affordable. NGOs have wide outreach network, but their services are cost based and not effective due to absence of competent veterinarians or auxiliary staff. In cooperatives and community based dairy farming, strong cost-effective veterinary services are provided, but these are limited only to the group members.

16. Credit support to small dairy farmers is limited. Formal financial institutes lend money at 8-10% annual rate of interest with collaterals; and procedures to obtain such loan is cumbersome. Only medium sized dairy farmers have access to such credits. The annual rate of interest of micro credit provided by NGOs is above 12%, which is acceptable to the farmers, but strict repayment schedule dissuades them to take such micro-credit.

17. It is estimated that around 15% of the milk collected from the farmers becomes acidic due to absence of cooling and processing facilities. Only the organized milk collector and processing organizations like Milk Vita, Grammen Mostsha and Pashu Sampad Foundation (GMPF), Arong and Pran, which cover an estimated 150,000 smallholders, provide chilling facilities. In some remote milk pockets, vendors use improvised milk cooling jars to collect milk for delivery to potential market areas (up to 30%). Other than these organized bodies, facilities are not available for value addition by pasteurizing, packaging and processing of milk.

18. Insurance companies are reluctant to cover the risk of small dairy farms. Grameen Motsha and Pashusampad Foundation (GMPF) provide 80% insurance coverage of its dairy enterprises at 5% one time premium payment on the head value of the cow. Milk Vita and BRAC also have internal insurance system. Others do not provide insurance coverage.

19. In the rural areas, price of milk varies from Tk.10 to Tk.14 per litre, whereas in the urban areas, it ranges from Tk. 24 to Tk.30 per litre. Smallholders do not have access to this information. They remain in dark about the prices of milk in the cities. Vendors and organized private milk collectors also deprive them of the information for their own interest. As such the farmers are frequently deprived of fair prices.

20. Due to absence of proper recognition of various animal products as a source of food and nutrition in the National food policy, the dairy industry and other livestock farms are not properly evaluated in terms of their contributions to human health and nutrition, and national economy and social life. Regulatory practices for handling, harvesting, preparation, processing, storage, transport, distribution and sale of food for human consumption is absent. As such adulterated and inferior quality milk and milk products are sold in the market. This has direct and indirect negative effects on smallholder milk producers.

C. Policy Issues

Lack of collection and processing facilities

- n Organized (peri-urban) farmers have collection and processing facilities, but generally not non-peri-urban producers
- n Low cost solutions generally not up-scaled to village level

Input constraints

- n Feeds a major constraint (availability and price); genetics and skills also major constraints
- n Animal health delivery weak in terms of coverage and service
- n Reproductive health services (not incl. AI) “non-existent”

Provision of market information network

- n Almost no market information is available for the majority of producers on prices, quantities, predicted supply and demand; farmers are thus forced to be price takers
- n Essential for dairy entrepreneurs

Need for a regulatory body

- n Price regulations (not controls or subsidies)
- n Dairy promotion organization with regulatory authority
- n Food quality and food safety regulations

D. Review of current policy

21. First to Fourth five year Plans of the Government emphasized on increasing the supply of draught power by improving the quality and number of animals, increasing the supply of animal protein of livestock origin and creating additional employment opportunities for poverty alleviation. Budget allocation till the Third Five Year Plan did not match the objectives of the Plan. The allocation was less than 1.0% of the national budget. It increased to 1.39% in the Fourth Five Year Plan (1990-95). In the Fifth Five Year Plan (1997-2002), dairy sector was recognized as a highly viable sector for generation of employment and income for the landless, unemployed youths and destitute women¹. FFYP also emphasized reduction of dependency on import of powdered milk and involve the private sector, local government bodies and NGOs in livestock industry for credit distribution, production of cattle, milk processing, input supply and marketing.

22. The Government introduced several policies conducive to dairy development. The macro-economic policy environment (e.g. fiscal, monetary, credit policies etc) had significant effects on livestock sub-sector growth. Good feeder and rural roads together with adequate market centres provided farmers with better options for livestock farming, and stimulated the expansion of the diversity of livestock products. Waiving of taxes and tariffs on imported inputs for commercial poultry production has made positive impact on poultry industry. Tax holiday for poultry enterprises, and land tax has been made equivalent to what is given for crop agriculture. Poultry industry is also given 20% rebate on electric bills. The Government has imposed ban on the import of table and hatching eggs. Dairy processing and feed mills are now considered as agro-based industry by the Bangladesh Bank. A number of livestock Act is under process of approval. Bangladesh Animal Diseases Act, 2005 and Bangladesh Animal and Animal Product Quarantine Act, 2005 have been promulgated.

E. Recommendations

1. Improve collection and processing facilities

- DLS provide a facilitative role in up-scaling dairy success stories
- Encourage community based small-scale dairying
- Develop pilot sites
- Encourage production of value added milk products in local communities

¹

Rahman, M.M Mia and Haque, SAMM. 2002. A policy study on the Dairy Development in Bangladesh.

2. ***Remove Input constraints***
 - Feed enhancement, veterinary services, diagnostic facilities
3. ***Create provision for market information***
 - Encourage and facilitate establishment of MIS in the private sector
4. ***Establish a regulatory body***
 - Monitor milk prices, penalize collusion/ excess market power
 - Quality control of dairy products

F. Proposed project

Project 1. Establishment of small-scale dairy farmers' organizations

Project 2. Capacity building of DLS for training dairy stakeholders.

Part II: Beef fattening and meat production

A. Background/overview

23. At present, the meat production is 0.78 million tons, of which 26% is beef, 51% is chicken, and the remainder is mutton. Per caput annual consumption is 5.9 kg against the universal standard of 80 kg/head/annum. Total meat production has increased from 0.51 million tons in 1995 to 0.74 million tons in 2002, an annual growth of 6.4%. Increased meat production has accrued primarily from the growth of poultry by about 20%. Beef and mutton production have remained almost stagnant.

24. It is estimated that around 3.5 million cattle are slaughtered annually. About 40% of the slaughtered cattle (i.e. 3.5 million head) are imported / cross-border traded from India. Similarly, around 15 million goats are slaughtered annually which are of local origin. Of the total slaughter of both cattle and goats around 40% are performed during Eid-ul-Azha. In recent years, there has been some organized raising of cattle for meat purposes (e.g. fattening) which is more pronounced preceding festivals such as Eid-ul-Azha. Otherwise, the domestic beef supply is provided by surplus males and culled cows used for dairy and draught purpose and also cattle of Indian origin. Farmers who fatten cattle get a premium of 40% over the normal head price but price premium may rise to 100% during festivals.

25. While the normal daily growth rate of cattle is 150-200 g under better feeding, following de-worming, body weight gain can rise to 500-700 g/day. As such the carcass weight of local cattle is improved to 80 kg by fattening compared to 55-60 kg, when reared on normal feeding conditions. The numbers of improved cows that are sold constitute around 3% of the market. A local cattle weighting 150 kg or a crossbred cow at 200 kg live weight costs Tk.7000.

26. Statistics about the number of cattle fattened is not available. However, during the last two decades, beefing fattening program has increased due to DLS's initiatives and the availability of micro-credit from NGOs. It is estimated that about 30% of the local/cross-bred cattle slaughtered are fattened. Due to increasing demand for quality meat, beef fattening has become a lucrative enterprise for smallholder farmers. Most smallholder farmers use urea-treated straw, slight concentrate and fodder for fattening of 1-3 cattle at a time. Beef fattening is considered to have high income generating potential.

27. Sales are generally operated at convenient open unhygienic and unregulated areas. Contractors of sale yards seem more interested in collecting tolls than performing any regulatory and monitoring functions.

Only a very small amount of meat moves through slaughter houses or slabs. Every district and upazila is expected to have one slaughter house or slaughter slab under the administrative control of the Local Government Body. Sanitary Inspectors are supposed to supervise slaughtering. In Dhaka and Chittagong, qualified veterinaries are employed but without adequate logistics.

28. Hygienic meat production in Bangladesh is either absent or very limited. Meat is handled under the most unsatisfactory sanitary conditions. The management of slaughtering and dressing operations of carcasses are highly disorganized. There are many self-made field abattoirs in rural and urban areas, where slaughtering, flaying and dressing are done indiscriminately in street corners or in yards of homes or in open fields of towns and cities. Enforcement of legislation relating to slaughtering or meat inspection Act is not available. In big cities and towns, although there are few authorized slaughtering places, these slaughter halls or sites where slaughtering operations are performed are not hygienically constructed or developed. There is poor or no attention to pre-slaughter conditions, sanitation, hygienic removal of waste materials and disposal of offals and their efficient destruction in areas located outside the meat plant

29. Butchers usually sell fresh meat, since cold chain does not exist, except in some departmental stores in large cities. Present price of bone-in beef is Tk.110-120/kg and that of chevron/mutton is Tk.140-150/kg. The price of beef and mutton between 2000 and 2005 increased from Tk.80-90/kg to Tk.110-120/kg for beef and Tk.110-120/kg to Tk.140-150/kg for mutton. It is estimated that small holder farmers who rear cattle under improvised feeding systems can make a profit of Tk.1500 per cattle exclusive of labour costs. Around 60% of the carcass meat value is earned by the farmers, whereas butchers earn around 15%, and traders earn 35%.

30. Income elasticity for meat is estimated at 1.23 which is likely to decline to 0.83 by the year 2010. If the population increases by 1.8% by 2010, demand for meat will increase by 4.6% annually. This will necessitate production of around 1.0 million tons by the year 2010. Export of beef and mutton from Bangladesh as halal meat has high prospect, especially in Muslim countries of East Asia and Middle East. But due to absence of modern and hygienic slaughter house and absence of regulatory framework and certification by OIE for freedom from certain diseases, meat export is seriously constrained. Internal demand for hygienically produced and frozen meat is also increasing.

B. Main Constraints

31. Major constraints in beef fattening and developing meat industry are given in Box 2.

Box 2. Constraint in Beef fattening and meat production

- Limited skill of farmers in beef fattening
- Limited skill of butchers
- Outdated Meat Control Act
- Poor quality slaughter houses

32. Most cattle are fattened at the age of 24 months or more or from culled cows and bullocks/bulls. Many farmers do not know the appropriate age of fattening which is 18-22 months, when growth of meat is optimum. Fattening for 5-6 months, frequently practiced by many farmers, unnecessarily increase the cost of production, which could be significantly reduced, if done for 3-4 months at the appropriate growing stage i.e. 18-22 months. Fattened animals are apparently healthy and reared under specific care with appropriate vaccination, but many customers have dislike for these owing to use of urea-treated straw or block.

33. According to the Animal Slaughter and Meat Control Act of 1957, slaughter and sale of meat is prohibited for 3 days in a week. This has serious negative influence on the operation of beef and mutton stalls. The slaughter prohibition of young animals is a direct impediment to the development of beef fattening industry; because beef fattening targets early age group for improved growth rate, higher carcass weight and tender meat. The main problem in the Act is that it does not cover sanitary and disease issues. Existing legal frame allows meat inspection to be carried out by Sanitary Inspectors who do not know the basics of meat inspection. As a result diseased or poor quality meat is easily marketed by butchers, which may cause serious health hazards to consumers.

34. The butchers slaughter animals in open place using traditional skills, which do not allow adequate draining of blood from slaughtered animals, proper flaying and hygienic meat production. There is almost complete absence of modern slaughterhouse and meat processing industry. Existing slaughterhouses are unhygienically operated, resulting in poor quality meat production. In the absence of modern slaughterhouse and processing plant, by-product utilization is not possible, which limits income potentials from the slaughtered animals.

C. Policy Issues

Training of farmers and butchers

- Lack of adequate skills and knowledge of farmers and butchers adversely affect productivity, quality, and safety of meat and other by-products. Training facilities for them are almost nonexistent.

Reform of regulations

- The existing Meat (control) and Slaughter (restriction) Act does not address the sanitary aspects of meat production. It only imposes restriction on consumption and sale. The increased domestic demand and export potential needs new laws with a changed vision. DLS has drafted a new law which is now in the hands of the Ministry.

Establishment of slaughterhouses

- Slaughter is conducted in unhygienic and unscientifically designed slaughter houses or in open places, causing serious threat to human and animal health and ecosystems. Establishment of slaughter houses in the private sector needs adequate government financial, institutional, regulatory and technical support. Establishment of slaughter slabs in rural areas is also necessary for safe meat, protection of health, promoting the use of byproduct, and protection of the environment.

D. Review of current policy

35. The Ministry of Fisheries and Livestock and the Department of Livestock Services took the initiative to draft the Animal Disease Act and the Animal and Animal Production Quarantine Act. These Acts have been approved. But the much needed Act of public health importance i.e. the Slaughter Restriction and Meat Inspection Act remain to be addressed for revision and enactment.

E. Recommendations

1. The proposed Animal Slaughter Act should be quickly enacted to promote hygienic production of quality meat.
2. Training should be organized and supported for butchers particularly in scientific procedures for slaughter, processing, and meat preservation techniques.
3. Private sector establishment of modern slaughter houses in each district and slaughter slabs in Upazilas should be facilitated.

F. Proposed project

Project 1. Establishment of Slaughter Slabs in Upazilas

Project 2. Consumer Awareness Campaign

G. Action Plan

Projects	Duration	Estd. Cost (US\$)	Actions	Responsibility
1. Establishment of small-scale dairy farmers' organizations	5 years	0.10 m	1. Identification of project area. 2. Cooperative group formation. 3. Development of service package 4. Reducing market barriers.	DLS/MOFL
2. Capacity building of DLS for training dairy stakeholders.	5 years	0.50 m	1. Assessment of training facilities 2. Renovation of training institutes 3. Development of training modules. 4. Conducting training of trainers 5. Conducting training of farmers.	DLS/MOFL
3. Establishment of Slaughter Slabs in Upazilas	5 years	1.50 m	1. Identification of market place. 2. Designing an ideal slaughter slab 3. Consultation with Upazila Authority. 4. Establishment of slaughter slab	DLS/MOFL
4. Consumer Awareness Campaign	5 years	0.50 m	1. Development of campaign strategy involving partners, media local government and other stakeholders. 2. Development of a contingency plan for serosurveillance 3. Development of TV filler, Radio filler and documentary, leaflet, booklet, etc. 4. Publicity using prepared document and other means 5. Organizing campaign workshop. 6. Observance of awareness week.	DLS/MOFL

CHAPTER 3

Poultry Development

A. Background/overview

1. In Bangladesh, about 80% of the 20 million households in the rural areas rear poultry along with other domestic animals. Livestock along with poultry are intricately interwoven with the social life of the rural poor like in many societies in the developing world, and constitute the main, if not the only, capital reserve of the farming households. Livestock and poultry's share of agricultural income has increased from 7.6% in 1973-74 to 12% in 1998-99, and is expected to increase further to 19.9% by 2020. This sub-sector provides 15% of total employment and 40% of agricultural employment, indicating that poverty reduction potential of this sub-sector is high.

2. Two distinct poultry production systems exist in Bangladesh. These are:

- a. Unorganized/backyard/traditional scavenging system.
- b. Organized Commercial system.

3. Duck production in Bangladesh is also increasing. Many small farmers are involved in duck farming with both local and exotic strains in selected areas. DLS has been promoting this program for quite some years and it has started to take off.

4. The unorganized/backyard/traditional scavenging system has some features which distinguish it from the commercialized intensive and semi-scavenging units. These backyard units require minimum inputs and directly contribute to the social and economic development of the family who rear them. They have little impact on environment and are highly integrated in the crop livestock system, which makes them sustainable under the prevailing socio-economic conditions. Women and children generally remain in charge of this poultry rearing system. Birds are left to scavenge during the day and put in improvised shelter at night. Low level of supplementation in the form of kura (rice bran) are provided in the morning and evening only. However, during the time of crop harvesting and processing, they get additional supplementation of grains. The level of production of these birds is very low compared to those under high inputs system. A scavenging hen lays, on average, 45 to 50 eggs per year; and mortality is high.

5. Commercial production systems use birds of improved genetic stock and rear them under improved management. Optimum performance of these birds can only be achieved if high quality inputs in optimum quantity are used. The current best commercial layer strains produce 280 to 290 eggs under improved management. Similarly, the best meat strains now reach the weight of more than two kg in six to seven weeks, a large improvement over past records.

6. As reported by DLS 43,601 duck farms have so far been established in the country, semi-scavenging in nature. Integrated duck and fish farming systems or duck rearing in the rice field during weeding and harvesting time have not developed in Bangladesh, unlike China and Vietnam. Adoption of these systems could improve duck production almost equally as that of fowls for poverty reduction and employment generation. Although high potential exists for production of ducks as a means for poverty reduction through income and employment generation, development investment from the public and private sector has been small.

7. DLS started research with various blood combinations and finally succeeded in producing a type of bird known as Sonali (Fayoumi x RIR) suitable for semi-scavenging system. These birds with little supplemented (30% - 70%) feed under semi-scavenging condition lay higher number of eggs (160 – 200 per

year), which is 3 to 4 times higher than the local hens. In 1990s, 8 hatchery farms (6 for fowls and 2 for ducks) started in the public sector (DLS), producing 4-5 million chicks and ducklings of exotic breed annually for distribution to the farmers. During 1990s and onwards, several development projects with and without international assistance have been implemented for poverty alleviation, income and employment generation at smallholder level by using semi-scavenging poultry model. More than 3.67 million beneficiaries have been involved in these programs.

8. In the commercial sector, public interventions have been limited. “Eggs and Hens Ltd.” was the pioneer in commercial poultry production, which began in 1973. Subsequently, Biman Poultry Complex, Phonix Poultry Ltd, United Food Complex and others gradually entered into the competition, and the number has now increased by many folds. According to DLS, the number of Grand Parent Farms is 4, Parent Stock Farms are 69 and commercial poultry farms (broiler and layer) are 118,526. Commercial farms (layer and broiler) are not evenly distributed in the country but are concentrated around the large cities and district towns.

9. The number of poultry per caput registered a uniform increase from 0.37 in 1960 to 1.03 in 1996 - a three-fold increase over four decades. The sub-sector, dominated by smallholder producers, has large potential for improving productivity and income of the rural poor. The national survey on livestock and poultry in the year 1988-89 published in 1994 indicates that the total number of households rearing poultry birds was 10.35 millions and the number of poultry was 96.75 millions (DLS projections for 2002 are poultry 175.12 millions and ducks 13.70 millions). Of the total poultry population, 83% were chicken, and the number of chicken has increased by 26% as compared to the figure of 1983-84 livestock survey. The population of chicken in Bangladesh has increased at an average rate of 7% per annum. The production of poultry meat and eggs also increased at an average annual rate of 4.6% and 5.5% respectively (FAO quarterly bulletin of statistics, Vol. 8, 1995).

B. Main Constraints

10. The main constraints identified in the course of the study are described below. Some of these constraints are common to production of traditional and commercial poultry, and some are specific to traditional and some are specific to commercial poultry production.

- Lack of infrastructure at and beyond the Upazila Head Quarters for providing services to poultry farmers (diagnostic facilities, storage and preservation of inputs, etc.)
- Shortage of technical/skilled manpower
- Shortage of quality chicks/breeding materials
- Shortage of poultry feed/feed ingredients
- Lack of quality control facilities for medicine, vaccines and biological products, feed and feed ingredients, chicks, eggs, birds
- Shortage of vaccines (both locally produced and imported)
- Lack of organized marketing system
- Poor provision of veterinary services
- Institutional support (credit, capital)

11. The main constraints normally faced by duck farmers are shortage of natural feed supply during the dry season (March – June), and incidence of disease like, duck plague and duck cholera.

C. Policy Issues

- Health care, feeds, drugs and chicks quality
- Price of chicks and feeds

- Non-availability of credit
- Community vs. individual entrepreneurship
- Price and marketing

D Review of current policy

12. The first livestock development policy was formulated in 1992; but hardly any attempt was made to implement the policy. The main policy objectives included in the 1992 policy document are the following:

- i) Development of improved varieties of cattle, poultry and ducks
- ii) Production of feed for cattle, poultry and ducks
- iii) Treatment and control of diseases of cattle, poultry and ducks
- iv) Appropriate livestock education, training and research
- v) Capital investment and credit management
- vi) Insurance arrangement
- vii) Establishment of cattle and buffalo bank
- viii) Marketing management
- ix) Institutional development

13. Since 1992, events on the ground have rendered large part of the 1992 livestock policy superfluous, as private sector growth in key areas such as feed production, credit, insurance and marketing has overtaken DLS. Moreover, few staff in DLS are aware of the existence of 1992 policy as a key reference point for strategically guiding the work of DLS. The livestock policy was never translated into an operational strategic action plan, backed up by concrete activities and budgets.

14. The lack of overall vision and clear idea of the public sector functions is a major weakness of DLS. This has resulted in lack of focus, which did not allow DLS for targeted use of the limited resources. Some people also did not want the policy to be implemented as DLS had to undergo major changes to reflect the comparative advantages of the private and public sector, as well as reorient DLS to perform new public good functions, with more focus on regulatory aspects, quality control, disease surveillance and other activities targeted to reducing rural poverty.

15. Another draft poultry development policy was developed in 2004. But approval of the draft is reported to be pending in the light of the on-going exercise for formulating a national livestock policy, covering the policy for poultry development. The draft focuses more on public sector development, without making any demarcation between public and private sectors. A lot of functions that can be better performed by the private sector are included in the public sector.

E. Recommendations

1. The poultry farms of DLS should be fully utilized in the following manner:

Breeding and multiplications farms to be retained by DLS

- Central Poultry Farm
- Savar Poultry Breeding Farm
- Zonal Poultry Farm Rajsahi
- 7 District Farms (Sitakunda, Faridpur, Jessor, Comilla, Bogra, Rangpur and

Jamalganj)

Farms to be attached to Colleges

- Zonal Poultry Farm Pahartoli, Sylhet, Dinajpur, Barisal Poultry Farm

Remaining Farms and Units to be developed as growth centers for

- Training of smallholder poultry farmers/feed sellers/chick selling agents
 - Technology testing and demonstration
 - Training of private paravets
2. Quality assurance of feeds and feed ingredients
 3. Ban on the import of eggs and broiler meat should be continued for another 5 years
 4. Criteria should be fixed to ensure quality supply of chick
 5. Specific guideline for establishment of environment friendly farms
 6. Support establishment of Grand Parent Stock Farm
 7. Support establishing plants for poultry processing and utilization of byproducts

F. Proposed project

Project 1. Conservation of Local Germplasms and Development of Suitable Semi-scavenging Breeds.

Project 2. Transforming the Feed Analytical Laboratory of DLS into “Feed Analysis and Quality Assurance Institute”

Project 3. Establish a Multi-disciplinary Training Program

Project 4. Utilization of existing duck farms as training center for duck rearer.

G. Action Plan

Name of the Project	Activities	Duration of the Project	Approximate cost (US\$)	Implementing Agencies
1	2	3	4	6
1. Conservation of Local Germplasms and Development of Suitable Semi-scavenging Breeds	<p>1. Study the performance of Sonali and its acceptability by the beneficiaries.</p> <p>2. Procure Fayoumi and RIR from abroad or use the already adopted ones, if available in the country.</p> <p>3. Selection of 2/3 local best breeds and preservation of the same through deep frozen semen or in the farm.</p> <p>4. Selection of two exotic breeds, based on the experience in neighboring country.</p> <p>5. Develop breeding programme for multiple breeding of local breeds with the exotic ones.</p> <p>6. Field testing of the offspring at community level involving beneficiaries</p> <p>7. Recommend the tested improved breeds.</p>	3 yrs.	0.25 million	BLRI/ CGVC
2. Transforming the Feed Analytical Laboratory of DLS into “Feed Analysis and Quality Assurance Institute”	<p>1. Critically examine the current mandate and functions, structure, organization and management system of the laboratory and identify the lapses and gaps in consultation with BAU, DLRI, BSTI, Science Laboratory and the Nutrition Laboratory of DU.</p> <p>2. Redefine the mandate and functions as per development needs.</p> <p>3. Reorganize the present laboratory into a Feed Analysis and Quality Assurance Institute, based on new functions.</p> <p>4. Assess the additional resource requirements in terms of manpower and facilities (accommodation, machineries, equipments and training), including operational funds.</p> <p>5. Explore the possibility of alternative funding</p>	2 yrs	0.5 millions	DLS/ MOFL
3. Establish a Multi-disciplinary	1. Assessment of the present resources available at different	10 yrs	5.0 million	MoFL/ DLS/ NGO/ Donor

Training Program	<p>training venues</p> <p>2. Assessment of the additional resources, including modern training tools, books, leaflets, journals etc.</p> <p>3. Renovation and modification of different training venues as necessary</p> <p>4. Review the available training materials, more specifically training modules developed by PLDP, SLDP, DLS and Ministry and Department.</p> <p>5. Develop appropriate training modules for different kind of stakeholders</p> <p>6. Posting of officers having suitable qualifications and past experience in conduction training program, especially community based training programme</p> <p>7. Develop training master plan for three years, five years, and ten years.</p> <p>8. Make provision of fund sufficient for field visit. Visit to demonstration farm and provision of sufficient funds after the end of the project so as to continue yearlong training and refresher courses for each category of stakeholder at least three times a year.</p>			
4. Utilization of existing duck farms as training center for Duck rear.	<p>1. Identify the present constraints in expanding cost effective duck rearing system in the country.</p> <p>2. Develop ways and means by which the farmers can be relieved of these constraints.</p> <p>3. Develop training modules for training the duck rearers.</p> <p>4. Develop 5 year training master plan.</p> <p>5. Arrange posting of qualified and experienced personnel for conducting the training programme</p>	5 years	0.25 million	

CHAPTER 4

Breeds and Breeding

A. Background/overview

1. Like other developing countries of Asia, Bangladesh is rich in farm animal genetic resources (FAnGR). Most species are indigenous except for about 10% of cattle and 20% of chickens, originating from exotic crosses and commercial types. These indigenous types possess many positive qualities; for example, considerable adaptability to harsh climates, able to survive on poor nutrition, requiring minimal management, resistance to local diseases, and suitability to the economy of subsistence farmers. Productivity is low compared to improved breeds / types of livestock available in the country. A wide variation in terms of coat colour, size, body weight, production, and fecundity has been found to exist among all indigenous FAnGR of Bangladesh (Bhuiyan, 2003a and 2003b).

2. In the last 60 years or so exploitation of exotic ruminants and poultry germplasm has taken place in Bangladesh. As a result, some quasi-indigenous animals have been generated as well, but their impact on the total production system is negligible except in the case of cattle. The main reasons for such failure are significant genotype-environment interaction, indiscriminate crossbreeding, and unscientific operation of breeding programs. Early efforts to improve local cattle through Hariana, Tharparker, Red Sindhi, and other breeds produced positive results and still form the basis of improved bloodlines in several milk-shed areas in the country. However, no sustained policy has been pursued to maintain the selection process for continuous improvement. This has put the Bangladesh's breeding improvement potential behind by several decades.

3 Livestock development through the application of science-led methods of breeds and breeding in Bangladesh is still at a rudimentary stage, without any defined national strategy or concrete vision. There is enthusiasm for applying breeds and breeding interventions to enhance livestock productivity, but lack of a national breeding policy, use of inappropriate (unsustainable) breeds and types, weak infra-structure (human capacity, national service delivery, breeding farms), limited technical knowledge, and unclear marketing possibilities has constrained the development of improved breeds. In the private sector, specialist human resources are limited although there is some recruitment from abroad including India, Thailand, and the Philippines, particularly in the commercial poultry industry.

B. Main Constraints

4. There is a gap in understanding among the entrepreneurs, livestock officers, farmers and policy makers about the value of breeding program for improving the domestic breeds. Many people do not understand the difference between breeding and artificial insemination which is nothing but an efficient breeding tool only. It is true that animal breeding is time consuming, the annual rate of progress is small (1-3 % of population mean) and initial investment is high, but the improvement is permanent and the accumulated benefit over generation / time is high. It is not easily recognized that animal breeding, on a longer term, is highly cost-effective and remunerative. There are a number of promising well-adapted native livestock breeds / types in the country (e.g. Red Chittagong cattle, Black Bengal goat, Naked Neck chicken etc), which could be developed into high yielding breeds through cross breeding in a systematic scientific manner. Indiscriminate crossbreeding (cattle, goat and chicken) and a clear neglect of indigenous breeds have created a situation, where a number of native breeds / types of livestock are now under threat of extinction. The available high yielding seed materials (in cattle and chicken industry) are mostly exotic and regularly imported. These imported exotic species do not adapt well under Bangladesh climatic condition.

5. Shortage of well qualified personnel in animal breeding is one of the major problems, faced in this field. Those, available in limited number, are engaged in areas other than breeding. This is particularly true in the case of the Department of Livestock Services. It has not been possible to design and implement a sound and sustainable impact generating livestock breeding program due to unclear concept, shortage of skilled human resources, absence of demand driven national priority and plan, lack of high yielding livestock breeds and inadequate breeding services.

6. It is not even known what animal resources (species and breed/type) are available in the country, which is essential to examine the prospects and promises for formulating an animal breeding plan and strategy. The breeding programs, so far attempted, have clearly neglected the potential of the indigenous livestock breeds/ types. No data pertaining to the relative economic value of indigenous versus exotic or crossbred animal under a production system exists in the country. In all species, the attempts made were mainly oriented towards the use of high profile exotic breeds without adequately considering their adaptability under the existing agro-climatic conditions and farming systems.

7. Unplanned sporadic attempts that were made for breed improvement of various species failed to create an impact, because these initiatives were not based on thorough breed/ genotype testing results. They also did not take the existing production systems into account. This resulted in significant genotype-environment interaction (GE). The programs were not based on well-thought out and sound breeding goal, breeding criteria, animal recording system, animal evaluation procedure, animal selection and mating plan. Therefore, the programs could not make any sustainable impact. The breeding programs were basically an indiscriminate crossbreeding approach without any clear vision and goal to achieve. These programs did not follow the right scientific approach; thus failed to ensure production of consistently high yielding and quality breeding animals/semen (indigenous and exotic) to serve the needs of the farmers.

8. Animal identification, pedigree and milk recording system are almost absent in the country. Government procedure for evaluating breeding animal is far away from the standard procedure. Karyotyping breeding bulls, status of inbreeding at the individual as well as at the herd level is not known at all and ways to control it is also not known. Sound and strict national semen distribution policy is not in existence. No computer facility for animal information entry, processing and animal genetic evaluation is available at the disposal of government farms and CCBS. A progeny testing scheme to produce proven bull to cater for national cattle breeding program and AI service has recently been started but need to be streamlined in line with scientific breeding methodology. The commercial dairy farmers are progressive to form association and to take part in field recording on condition that production of high merit breeding bull is ensured.

9. Breeds and breeding program inherently demands heavy initial investment and regular and timely flow of resources. Sustained funding support of the government and the donors for breeding work is not available. As a result, the existing manpower in this field is being used in other areas.

10. There is no regulatory body and national Breeding Act to regulate breed import and price of breeding materials as well as to regulate the merit and quality of breeds, breeding materials and breeding services. For example, in the existing cattle breeding and AI services, the farmers have no idea of the merit and quality of semen being given to them for insemination. The same is true for other species such as goats and buffaloes. Similar is the case with import of livestock breeds or germplasm (animal, semen, embryo etc). Due to importation of inappropriate genetic material, indigenous livestock breeds / types are under threat of extinction.

C. Policy Issues

No national livestock breeding policy is in place

- n There have been some starts and stops
- n 10% of dairy cattle are crossbred as a result of the limited success
- n Virtually all breeding programs (except cattle) are non-functional
- n Indigenous livestock are preferred, fetch a higher price, and are easier to manage

Weak breeding services

- n Breeding males are rarely available at village level
- n The national AI service for cattle only covers about 25% of the country
- n There is no AI service (public or private) for buffalo/ small ruminants/ poultry

Poor quality control

- n No quality control of animals/ semen is used (possibly resulting in inappropriate imports)
- n Farmers complain that high yielding livestock are not affordable
- n Farmers are disappointed with performance of progressive generations

Under-developed human resources

- n Farmers and technicians lack technical awareness
- n There are 4 MS/ PhD degrees in livestock breeding in Bangladesh (c.60 PhDs in crop breeding)

D. Review of current policy

11. In 1992 Livestock Development Policy, a statement on general policy objective was made, which reads as “promote large scale practice of modern and improved technologies for livestock treatment, feed production and breed improvement for overall livestock development”. Another statement specifically referred to “Development of improved varieties of cattle and poultry/ducks” as an element of livestock development plan and program. These policy objectives were not translated into action plan for implementation.

12. The 1992 policy also states, “Existing breeding policy to up grade local cattle by crossing with pure Friesian or Friesian x Sahiwal in 100 selected Upazilas will be further strengthened keeping dairy development in mind. For meat production “crossbreeding of local with pure breeds like Sahiwal, Brahman etc will be undertaken to improve meat quality of cattle and increase draft power for land tillage and traction. Some minor elements in the Livestock Development Policy of 1992 include “(i) A program will be developed to improve artificial insemination of cattle in the rural areas by using frozen semen and embryos; (ii) Facilities for raising pure exotic breeds such as Sahiwal and Friesian will be established in the government farms; (iii) Attempts will also be made to establish gene bank for the conservation of genetic characters of local breeds / types of cattle”. No one is following any of these policies. What cattle breeding policy BRAC, Milk Vita and other organizations are following and on what technical ground is not clear and the quality of services are not checked by any authority. No attempt to test beef cattle genetics has yet been pursued and therefore worth testing first under experimental conditions only.

13. The evolution of cattle in the territory of Bangladesh has taken place through natural and directional selection over centuries (Nasim, 1965, Ahmed and Islam, 1987 and Bhuiyan, 1997). DLS first drafted a breeding policy in 1982, which states, “The existing breeding policy envisages that cattle of urban, semi-urban and milk potential area will be upgraded by using bulls produced out of crossing between pure Friesian bulls and pure Sahiwal cows. The bulls having 50% Friesian blood and 50% local blood will be put into breeding operation for up grading cattle of the rural areas”. This policy was taken on the basis of

performances of different breeds used and progeny performances recorded at the Central Cattle Breeding Station (CCBS), Savar, Dhaka.

14. In the recent past (1997), DLS took the initiative to review the status of cattle breeding and improvement strategy. After a series of discussions at the policy makers level, it has been suggested that the policy should be revised into two practical groups: (1) for intensive dairy production system, implement breeding and dairy farming with 50 % Friesian – 50% Deshi cattle and follow long-term Open Nucleus Crossbreeding System (ONCS); and (2) for extensive traditional system, implement breeding program with improved Deshi cattle (Pabna, Red Chittagong etc) following Open Nucleus Breeding System (ONBS). The scientific reasons behind these breeding policies were genetic theory (additive versus non-additive model of gene action) and world experience generated in Bangladesh and in countries, with similar cattle breeding history.

15. The genetic make-up of the semen produced and used does not concur with the existing breeding policy (1982 or 1997). Revised cattle breeding policy (1997) is under implementation, but breeding program with indigenous cattle called " Deshi " (Red Chittagong, Pabna etc) are yet to be executed. There are more than 56 (fifty six) genotypes of cattle at the Government Savar Dairy Farm. Pure breed Holstein and Jersey bulls are being repeatedly imported and used at Milk-Vita, ignoring the cattle breeding policy. Nobody seems to be responsible for overseeing the implementation of the policy.

E. Recommendations

1. ***Formulation of a National Breeding Policy/Strategy***
 - ₪ Finalize and approve the draft breeding policy of 1997
 - ₪ Develop a strategy for breeding programs with available genetic resources
 - ₪ Identify priority species based on national demand
2. ***Conservation of Indigenous Livestock***
 - ₪ Indigenous breeds/ types such as Deshi chicken, Naked Neck chicken, Black Bengal goat and Red Chittagong cattle are under threat of extinction
 - ₪ Program needed for conservation of these potential native breeds/types
3. ***Pricing and quality control of breeding material***
 - ₪ Technical Committee to advise on pricing of breeding services, based on the genetic merit of animal or semen
 - ₪ Quality control
4. ***Human resource development***
 - ₪ Encourage graduate student enrolment in MS/PhD animal genetics and breeding
 - ₪ Upgrade technical skills of staff

F. Proposed projects

- Project 1. Survey and database development on livestock population.
Project 2. Establishment of Pilot Breeding Program
Project 3. Human Resource Development

G. Action Plan

Project Title	Duration	Estimated Cost (US\$)	Actions	Responsibility
1. Survey and database development on livestock population	2 years	2.0 million	1) Questionnaire development 2) Training of recorder / enumerator 3) Breed survey 4) Phenotypic characterization 5) Molecular characterization	BLRI, BAU,DLS
2. Establishment of Pilot Breeding Program	4 years (Chicken) 6 years (Goats) 10 years (Cattle)	3.0 million 6.0 million 20.0 million	1)Introduction of the concept of ONBS and implementation requirements 2) Field screening to determine scope for selective breeding 3) Participatory drawing up of the breeding and management protocols 4) Finalization of community participation rules 5) Establishment of the community-managed nucleus herd/flock 6) Training of enumerators/data recorders (who will train farmers) over project period 7) Development of data captures systems (e.g. recording) 8) Mating and subsequent selection from the resulting progeny over generations 9) Data analysis and identification of breeding animals at the nucleus and redistribution 10) Training of farmers – on ONBS process with project management skills 11) Regular field screening to identify candidates for the nucleus	DLS, BLRI,BAU
3. Human Resource Development in Breeds & Breeding	5 years	5.0 million	1) Short courses on various aspects of breeds and breeding 2) MS courses on various aspects of breeds and breeding 3) Ph.D. courses on various aspects of breeds and breeding 4) International seminar / symposium in the relevant field	BLRI, DLS, BAU, NGO Private

CHAPTER 5

Feeds and Animal Management

A. Background/overview

1. In Bangladesh, feed resources for livestock are derived from crop residues and cereal by-products as well as grasses, tree leaves and aquatic plants. Livestock also scavenge for grasses or feeds available on non-cultivated areas along waysides and bunds. The bulk of roughage for livestock consists of rice straw, wheat straw, wayside grasses, aquatic plants and tree fodder. Very little grains are available for feeding animals. About 2 kg of straw is available per head per day and supplementation is limited to about 1 kg of green fodder plus marginal quantities of cereal and oilseed by-products (Saadullah, 1995). Concentrates consist of rice bran, wheat bran, oil cakes, pulse bran, and molasses. In some cases, fish meal contributes 6.8% of the total dry matter.

2. Feed resources for rural poultry comprises of scattered grains from threshing floors, left over grains, pulses, broken rice, kitchen wastes, green grasses, insects, worms, left over boiled rice, etc. Scavenging diets contain around 80-85% dry matter and 8-9% crude protein. Common ingredients used for preparation of poultry feeds for hybrid poultry are wheat/wheat bran, rice polish, till oil cake, fishmeal, oyster shell, common salt, and vitamin-mineral premix. Traditional hand mixing of concentrates constitute 66.45% of total production and the rest by automatic mixing.

3. In the early 1990s, a number of improved varieties of forages, such as napier, para, guinea and German grasses and forage trees such as ipilpil (*Leucaena*) have been introduced by DLS. This program has succeeded in promoting the cultivation of improved varieties of fodder in about 5500 acres of farmlands, in addition to creation of nurseries in about 200 acres in DLS farm campuses. Furthermore, about 160 tons of ipilpil seeds are distributed annually by DLS for plantation in homesteads (DLS, 2000). DLS does not have trained manpower to launch a major field program for fodder production. It has been reported that Savar dairy farm produced about 6576 tons of green forages, while seven other DLS dairy farms produced only about 7162 tons (DLS, 2003).

B. Main Constraints

4. The main constraints of animal feeds and feeding include:

- Shortage of feeds and fodder
- Shortage of land for fodder production
- Seasonal fluctuation of feeds and fodder
- Low feed quality
- High feed price

5. The single most important constraint to livestock development is the acute shortage of feeds and fodder as indicated in UNDP report (1998). This shortage has grown over the past decades mainly due to the following facts:

- a) The traditional grazing fields have been brought under cereal crop production for intensive drive to increase rice production to provide food to increased population.
- b) The introduction of modern variety (MV) of short stemmed paddy by replacing the traditional variety has resulted in low volume of production of paddy straw.

- c) Out of total rice straw produced annually about 7.7 million tons of straw dry matter are being rotten during the monsoon (June-August) in Bangladesh (Chowdhury and Huque, 1996), resulting in further shortage straw.

6. According to UNDP Human Development Report (1998), about half of the rural household own less than 1.0 acre of land; 52 percent of the people own less than 0.5 acres; bottom 40 percent of households possess less than 3 percent of total land. Out of the total land, 60% is utilized for cultivation of different crops, 80% of which is cereal crops (Saadullah, 1992). About 80 thousand hectares of crop land are lost every year to meet the requirements of increased population for their dwelling houses, roads, markets and other purposes. Because of increasing demand for human food, land is intensively used for cereal production. Neither any grazing land nor spare land is available for growing fodder. This has resulted in shortage of green forage for ruminant livestock, and they are to live mainly on rice straw, which is deficient in protein and micronutrients. Poultry mainly subsists on post harvest grains, sharing food crops with human and scavenging around homestead area. This situation has led to low productivity of livestock in the rural area.

7. Rice straw, with little or no supplementation, almost exclusively covers the nutritional needs of livestock. This causes stunted growth, impairs reproduction, lactation and working ability. Shortage of quality and quantity of poultry feeds also causes lower growth rate, and affects meat yield and egg production.

8. Several authors (Madamba, 1985; Dicky and Huque, 1986; Tareque, 1985; Saadullah, 1995) indicated that the values ranging from 44% to 87% of dry matter (DM), 51% to 86% of total digestible nutrients (TDN) and 26% to 52% of digestible crude protein requirements are being met from the current feed resources available in Bangladesh. From these studies, it seems that the available feeds can support 70% of ruminants and 30% of poultry under normal condition (Shahjalal and Islam, 2001). In another study, total deficiency of livestock and poultry feed resources has been estimated to be 45% in terms of dry matter (DM), 50% in terms of TDN and 80% in terms of DCP (Huque, 2005). Available ingredients for intensive poultry production do not ensure balanced ration having 20-22% crude protein and 2700-2900 kcal/kg energy. An estimate of supply and demand for poultry feed shows that there is a shortage of 39% DM, 38% TDN and 43% DCP. The approximate annual demand of prepared feed for poultry is 789,000MT against which 33.5% come from the specialized feed mills mostly in private sectors, which produce about 265,000MT only (ADB, 2002).

9. From a study (Tareque, 1991) on the availability of feeds and fodder, it is evident that out of the total dry matter available, 70% constitutes dry roughage, 87% of which is rice straw. Feed nutrient supply and demand balance sheet indicates that the availability of nutrients is 33.3 % DM, 22.5% CP and 29.5% ME with the deficits of 66.7% DM, 77.5% CP and 70% ME. Other sources estimate that the roughage and concentrate available for feeding livestock can meet only 50% and 10% of dry matter requirements respectively (Shahjalal and Islam, 2001).

10. Herman (1984) reported seasonal effects on the types and quantity of feed offered to livestock. It was found that peaks in the availability of straw alternated with peaks of green feeds. More straw-based rations are offered in January, February and April-July and again in November and December. Most green materials are supplied from middle of March until July-August and during the months of November and December (Saadullah and Hossain, 2000). These fluctuations follow more or less the succession in dry and wet season and the harvest, with the straw peaks corresponding to the dry season and the green peaks to the wet season. Water hyacinth, banana leaves, jackfruit leaves and some climbing vines are the main green grass during the shortage period.

11. Under-nutrition due to inadequate or fluctuating nutrient supply is also a major constraint to animal production. Animals are traditionally raised in extensive system under ranged condition without any supplementation. It is often characterized by poor growth and high mortality. The strategy for improving livestock production has therefore been to maximize green forage production and to improve the efficiency of utilization of the available feed resources (crop residues and byproducts) in a logical manner.

12. Most of the dairy and poultry farmers are facing the problem of adulterated and inferior quality of prepared feeds and feed ingredients. Feed ingredients are imported by 17 registered importers, including some parent stock farms (PSF). However, most ingredients are used by PSF feed mills or some private feed mills. Except some small and medium entrepreneurs, who are in contractual agreement with PSF, procure feed ingredients and make balanced feed, pack them with own company logo, indicating percentage of different ingredients. Both PSF and private feed mills sale their products through agents distributed all over Bangladesh. Although some millers claim that their products are of high quality, but in many cases, they are found to be of inferior quality.

13. Most of the feed millers never disclose the information on packaging with regard to composition, ingredients, date of manufacturing, date of expiry, storing guideline, energy level, and protein and vitamin contents. Poor quality feed and packing result in poor feed conversion ratio (FCR) and lower the shelf life. Feed constitutes 70-75% cost of poultry industry and 90% success of a farm depends on the quality of feed and farm bio-security. Recently, it is observed that most of the feed millers minimize feed production cost either by adulteration of inferior quality ingredients or inclusion of lower proportion of valuable items like meat and bone meal, vitamin-mineral premix, soybean meal, maize etc. or by replacing with low grade rice polish or other raw materials in the manufactured feeds.

14. Increasing number of livestock and poultry farms in Bangladesh is constrained by high price of grains and cereal byproducts. Protein concentrates, available in the market are imported by the feed millers, which are very expensive and small scale producers are not able to purchase these items to incorporate in poultry feed formulation. The chronic scarcity and high cost of protein supplements, such as fishmeal, soybean meal, oil cakes etc. and other cereal byproducts (wheat bran, rice bran and broken rice) seriously affect performance and cost of livestock and poultry production. The information provided in Table 6 indicates that price of wheat bran, pulse bran, rice bran and broken rice increased by 37.5%, 40.0%, 88.0% and 75.0% respectively during 2003 to 2005. On the other hand, milk price remained almost the same during this period.

Table 6. Increase in price of different byproducts during 2003-2005

Feed ingredient	Price (Tk./maund)		
	2003	2004	2005
Wheat bran	240.00	280.00	330.00
Pulse bran	250.00	280.00	350.00
Rice bran	90.00	120.00	170.00
Broken rice	600.00	650.00	1050.00
Milk (Tk/kg)	20.00	20.00	20.00

Source: Adapted from a dairy farm at Hemayetpur, Savar, Dhaka.

C. Policy Issues

Few alternatives for producing fodder

- n There is simply not enough forage for all livestock; development of alternatives is essential
- n There is strong support for crops in Bangladesh (self-reliant in grain production) but not for forages

Poor utilization of crop residues, byproducts, alternatives

- n Lack of awareness, training
- n Poor storage of straw and other feed resources
- n Seasonal fluctuation

Lack of feed quality assurance

- n No control of quality, process, toxic substances
- n Bangladesh “Feed Act 2002” under preparation but not implemented
- n Inter-institutional constraints

Weak institutional support and services

- n Feed price not regulated and highly variable
- n No GoB branch responsible for nutrition; laboratory available

D. Review of current policy

15. The draft livestock policy of 1992 has not been formally adopted by the Government and hence not implemented, although DLS tried to initiate some activities according to the policy. Production of feed (fodder and concentrate feed production) for cattle and poultry/ducks was one of the policy objectives of the 1992 policy. Critics argue that the past policy did not have a pro-poor focus resulting in lack of recognition of the role of livestock in poverty reduction. Needless to say, the policy formulated about a decade ago does not reflect the requirements of the country for the 21st century. Furthermore, the changes that have occurred in the last decade have made some of the policy objectives obsolete. The whole exercise needs rethinking.

16. The past policies have been made following a top-down, and what was perceived as beneficial at the top was given priority and resources allocated accordingly. These policy measures have largely failed to recognize the prevailing ground realities/processes in the community areas targeted for development. Another weakness of the past policy is the narrow sectoral approach. The problems related to livestock production cannot be solved through isolated interventions because they are obviously interrelated and interdependent. Moreover, interventions did not take fully into account the socio-economic dynamics prevailing in the communities targeted for interventions. The above mentioned issues are the prime concern to which the present policy formulation will pay particular attention in the analysis and proposal for solution.

17. The strategies adopted by the government during the Fifth Five Year Plan (FFYP, 1997-2002) related to fodder production include: (i) increasing fodder supply through intensive use of available land; and (ii) improvement of livestock management through manpower training and skill development. The targets of the FFYP were set, based on the policy of 1992 and that could not be met as adequate attention was not paid to increasing feed production.

18. The Bangladesh Feed Act 2002: The main objectives of adopting legislation on animal feed are basically to ensure that (i) the animal feeds produced or imported do not create animal or human health hazard; (ii) the users are provided with accurate and meaningful information on the levels of analytical constituents having a direct effect on the quality of the feed; and (iii) a fair competition exists in the feed market. This requires certain provisions covering the origin of feed, operation of feed mills, analysis of feed, quality control and labelling. The present draft Act is well prepared, but for ensuring proper implementation, the following aspects need to be taken into account:

- Strengthening the capacity of the Animal Nutrition Laboratory of DLS, and clarifying its duties and functions. One single laboratory will not be enough to satisfy the demand of the customers. BAU and BLRI Animal Nutrition Laboratory could also be included as reference laboratories for which development of some additional infrastructure may be required.
- Appointment of members, size, and functions of the Feed Control Committee should be more precise. The stakeholders, feed importers and manufacturing companies, animal nutritionist, feed analyst should be represented in the Committee.
- Functions and duties of the Licensing Authority should be clearly defined.
- Functions and duties of the Quality Control Agency should be clearly defined.
- Provisions and cautions in using additives and growth stimulants should be included.
- Role of Bangladesh Standard and Testing Institute (BSTI) should be reviewed in the light of the proposed feed legislation, particularly with regard to the preparation of feeding standards, feed analysis, and inspection of feed plants.
- Hygienic measures during collection, storage, processing and distribution should be addressed in the proposed feed Act.

E. Recommendations

1. *Alternatives for producing fodder*

- ₪ Integration with other crops, overlapping cultivation, legumes
- ₪ Farmer field schools, demonstration sites, pilot villages
- ₪ Partial irrigation

2. *Utilization of crop residues and agro-industrial byproducts*

- ₪ Various methodologies to be demonstrated as above
- ₪ Collection, processing, handling logistics to overcome
- ₪ Storage solutions – ensiling, fodder banks

3. *Feed quality assurance*

- ₪ Establish a Nutrition and Forage Production Division
- ₪ Revitalize and charge for Animal Nutrition Laboratories of DLS
- ₪ Implement Bangladesh “Feed Act 2002”

4. *Institutional support and services*

- ₪ Establish Information Division in DLS
- ₪ Feed regulatory body established, enforce “Feed Act 2002”
- ₪ Monitor feed prices, penalize collusion/ excess market power

F. Proposed project

Project 1. Enhancing forage production

Project 2. Promotion of conventional and alternative feed resources

Project 3. Institutional reform

G. Action Plan

Project Title	Duration	Estimated cost (US\$)	Action	Responsibility
1. Forage production	10 ears	20 million	1. Screening of potential forage species 2. Establishment of a forage germplasm centre and nurseries 3. Development of forage production pockets 4. Training of DLS officers and field workers	DLS/MOFL
2. Promotion of conventional and alternative feed resources	5 years	5 million	1. Farmers training on the use of conventional and alternative feeds 2. Training of DLS officers 3. Establishment of Nutrition and 4. Forage Production Division 5. Establishment of Information Division 6. Training of trainers on livestock nutrition and feeding 7. Assist private sector to establish feed mills	DLS/MOFL
3. Institutional reform	3 years	5 million	1. Training of DLS officers 2. Establishment of Nutrition and 3. Forage Production Division and 4. Information Division 5. Training of trainers on livestock nutrition and forage production 6. Training on new and proven feeding technologies 7. Reinforce Central Nutrition Laboratory 8. Establish nutrition laboratories at district level	DLS/MOFL

CHAPTER 6

Veterinary Services and animal health

A. Background/overview

1. Until 1947, the Civil Veterinary Department shouldered the responsibility of controlling epidemic animal disease. In 1948, the name of the Civil Veterinary Department was changed into the Directorate of Animal Husbandry; and the dairy and poultry farms of the then Agriculture Department were merged with the newly created department. In 1960, the Directorate of Animal Husbandry was transformed into the Directorate of Livestock Services, which was, renamed as the Department of Livestock Services (DLS), the current location of veterinary services.

2. The Government of Bangladesh has established an extensive network of veterinary hospitals. There are 464 Upazila Veterinary Hospitals (UVHs), 17 District Veterinary Hospital (DVH)/District Diagnostic Laboratories (DDL), 1 Central Veterinary Hospital and 8 Regional Field Diseases Investigation Laboratories (FDIL) and one Central Disease Diagnosis Laboratory (CDIL). The Upazila Livestock Officer supervises the animal health activities in the Upazila and reports to his immediate supervisor, the District Livestock Officer (DLO). The reporting channels from there are via the Division Directors (DDs) to the DG and the MOFL. Monthly disease reports are compiled at the Upazila level and forwarded to the DG-DLS via the DLOs. The structure and functions of veterinary services in Bangladesh are addressed below under three sub-headings: delivery of animal health services; control of animal disease; and veterinary public health and regulatory affairs.

3. Comprehensive reports are available on the different aspects of animal health, in which an integrated approach to disease surveillance and monitoring, epidemiology, and a stronger veterinary public health service is described. Rahman (2003) comprehensively describes the current situation, while the “Summary of the Livestock Sector Review and Future Development”, PPSU-MOFL, (2004), provides a good summary of findings, observations and recommendations for the livestock sector. Implementation of Disease Control, Animal Slaughter, and the Meat Inspection Acts has been suggested. Private sector involvement in the production of vaccine, drugs, animal feeds, and breeding tools has also been recommended (Chipeta, 2003; Rahman, 2003b; Siddiqui, 2003). Hansen (2003) suggested an institutional reform of DLS with a strategy and action plan to strengthen its capacity to provide public good services such as disease monitoring, control and prevention strategies and implementation of trans-boundary disease transmission, veterinary public health, quality assurance of private sector services, information and database with other promotional activities towards pro-poor services, new technologies and management practice and farming system.

Delivery of animal health services

4. Current private veterinary services functions are being delivered on the basis of a public good. That is, most veterinary treatment and clinical support services, including some provision of veterinary pharmaceuticals, are being delivered by DLS. Veterinary clinical services and diagnosis is provided by the government free of charge by the network of UVHs. The UVHs, DVHs, FDILs, and CDIL are all part of the DLS infrastructure, and are all directly or indirectly answerable to the DLS section director for Research, Training and Extension (RTE). Although the CDIL is supposed to coordinate the FDILs, all are administratively directly accountable to the RTE director. There are however indications that private provision of services is in demand – veterinary officers and some animal husbandry officers (working at all levels) are providing clinical veterinary services outside office hours for cash payment, although the average amounts are undocumented.

5. Each year, the DLS purchases Tk. 30 million worth of veterinary drugs that are supposed to be distributed free of charge to farmers. However, as the quantity is not enough to cover all treatments all year round, veterinarians are put in a difficult situation in which a limited number of farmers – mostly in the vicinity of the UVH – are served free of charge, while others have to buy from a local pharmacy. The cost of drugs in the pharmacies includes, besides profits, over 50% in fees and duties charged by the government. Generally speaking, it is the poorer and more remote livestock owners who benefit less from free drug provision. Most drug shop owners or personnel have not received formal training in pharmacology and dispensing, but sell a wide range of drugs without prescription. Basic necessities such as refrigeration are often absent.

6. Private sector investment in vaccines and drugs amounts to roughly Tk. 2,100 million per annum, of which feed additives, vaccines, and drugs constitute 15%, 22% and 63% respectively. Sales of local products constitute 55% of the market; imported products cover 45% of the market (Rahman, 2003b). There are more than 35 pharmaceutical companies, which are either national enterprises or subsidiaries of multinational companies. These companies either manufacture or import veterinary drugs, vaccines, premixes and vitamins.

7. The limited coverage of the veterinary services has created opportunities for NGOs and cooperatives to develop their own veterinary service delivery systems. The UVH provides AI services only to farmers who bring their animals to the station, but NGOs and Cooperatives provide AI ambulatory services. The latter however only cover a limited geographical area of the country and only serve members. Local non-governmental private organisations (many of them operating as private enterprises) and cooperatives such as Milk-Vita provide veterinary services to their members. They provide treatment, vaccination, and AI services without fee for service, although costs are recovered from milk sales. Some NGOs have introduced ward contact farmers, who assist in vaccination, primary treatment, deworming, and simultaneously provide an example of improved breeding and fodder production. Other service providers include community poultry workers who provide 50% of all Newcastle disease vaccinations, a very limited number of individual private veterinarians, and traditional animal health service providers who are particularly active in remote areas. Finally, the Central Veterinary Hospital in Dhaka provides free of charge clinical services to nearby animal owners, including pet owners.

8. There is high demand for laboratory diagnosis. BRAC manages a full-time advanced poultry laboratory on a full cost recovery basis. BLRI, with assistance from JICA, also established an advanced poultry disease diagnostic laboratory that serves mainly farmers in the area. The government does not compile the information generated by these laboratories. There is also demand for private delivery of high quality veterinary services in both the poultry and dairy sectors. On the other hand, the prospects for establishing a private veterinary practice in more remote production areas are limited. In the absence of a clear policy on how to provide veterinary services to all livestock owners, an increasing number of veterinarians will be employed by private enterprise to serve the commercial sector, while more traditional livestock owners will be served by whatever public sector service is available. On top of this, poor farmers living outside the 10 km radius of a UVH are not likely to receive veterinary clinical services.

9. There are now four veterinary faculties established in the country. The output of veterinarians will increase from currently about 150 (Mymensing and Chittagong) to about 250 per year. The DLS will not likely absorb these kinds of numbers on an annual basis. Therefore, fresh graduates are likely to look for alternatives and establishing a private practice will be one of the options.

Control of animal disease

10. The following are necessary public sector roles that should be provided by a government veterinary service in order to secure animal disease control:

- Develop, co-ordinate, and implement disease control strategies and programs including emergency preparedness planning
- Establish and maintain capacity in disease outbreak investigation and laboratory confirmation
- Establish and maintain a national disease reporting and information system
- Report disease outbreaks to in-country, regional, and global (OIE) authorities

11. These functions are either non-existent in Bangladesh or are insufficiently supported to be properly functional. Full details are available in the numerous reports cited; a summary of findings and conclusions is presented here.

Disease information and control strategies

12. After a first attempt by the Asian Development Bank (ADB), the EC funded the Livestock Health Production and Information Unit (LHPIU), introducing a disease reporting format and database. Since cessation of funding, the unit is struggling to maintain activities without operating funds. Nevertheless, it is commendable to note that the unit still receives monthly disease reports from over 90% of the districts and all data are entered in the database. This is a solid basis for improving the system in line with new international reporting requirements and to improve the linkages between the LHPIU and laboratories.

13. Due to the fact that the whole veterinary service is preoccupied with the provision of clinical services, all laboratories are involved in the provision of diagnostic services rather than disease investigation and surveillance for transboundary animal diseases. Furthermore, there is no disease information exchange between DLS and NGO or private sector service providers, and there is duplication of services. Streamlining the provision of services will require clear policies and strategies.

14. DLS does not have a national strategy for the control or eradication of transboundary animal diseases. Immunization taking place at Upazila level is uncoordinated and normally a ring-vaccination response to outbreaks using vaccines produced by DLS. Most vaccinations at the Upazila level are performed by Veterinary Field Assistants (VFA). NGOs and other private operators cover 80% of poultry vaccinations. The current capacity of DLS vaccination coverage is about 10% of all farm animals, partly due to low funding and limited production facilities but also due to infrastructural barriers such as transportation networks and cold chain technologies.

15. The spread of peste des petits ruminants (PPR) in Bangladesh is a good example of what happens in the absence of emergency preparedness plans and disease control strategies. PPR was introduced in 1993 and by 1995 almost 75% of districts were affected. PPR outbreaks are now common and not well controlled. The DLS does not have emergency preparedness plans in place for possible emerging diseases. In response to the avian influenza threat, for example, only the capacity to diagnose the disease was established at BLRI.

16. Weekly market places are not inspected by the Upazila veterinary staff, nor are the 10,000-15,000 cattle that enter every day from India, despite a tax of Tk. 1000/head. The enormous revenue from this tax alone could pay for scores of needed services and programs.

Veterinary public health and regulatory affairs

17. The 1999 joint FAO/WHO expert committee agreed on the following definition of veterinary public health: "Veterinary Public Health is the sum of all contributions to the physical, mental and social well-being of humans through understanding and application of veterinary science". This definition involves attention to the risks at the level of both production and consumption of food of animal origin. It includes the risks stemming from zoonoses, risks related to occupational diseases and to environmental health as these may be affected by the health status of farm and pet animals.

18. While it is understood that VPH systems are "public good" tasks, all stakeholders and health professionals should be involved in the delivery of these services. Clearly a close cooperation has to be established between human public health and veterinary public health in controlling zoonoses and implementing food safety programs.

19. The draft PRSP document (PPSU/MOFL, 2004) identifies veterinary public health, food hygiene, and control of zoonotic diseases as areas that are weakly addressed and require improvement. Poverty is recognized as being a major risk factor associated with zoonoses and food borne illness for all consumers. Currently, VPH services are either deficient or absent at almost all administrative levels. This situation needs to be addressed urgently to control long-standing and persistent zoonoses including rabies, anthrax, brucellosis, and tuberculosis.

The Veterinary Public Health Unit and control of zoonotic diseases

20. In 1985 DLS established a Veterinary Public Health (VPH) Unit under the Research, Training, and Evaluation (RTE) section of DLS. Its mandate is to perform diagnosis, surveillance, and control of zoonotic diseases, and to ensure safe and wholesome food of animal origin through all stages of production to final consumption. The VPH Unit has weak relations with the human Health Department and the Public Health Institute, with which it should be implementing surveillance and control programs for zoonoses and food safety activities. VPH services in Bangladesh are further constrained by lack of a supporting legal framework directly addressing food safety and inspection, although the *Animal Slaughter Restriction and Meat Inspection Act*, 2005, is under review.

21. Meat inspection is non-existent in most rural areas and as a consequence the population in those areas does not have the opportunity to buy safe, inspected and hygienically produced meat but rely on meat originating from informal slaughter. The Bangladesh Parliament recently passed the Animal Disease Act, 2005 although implementation is a problem and subsidiary regulations facilitating local enforcement are not yet ready.

Drug quality control and registration

22. The Ministry of Health and Family Planning through the Directorate of Drug Authority controls the registration of both human and veterinary drugs, pharmaceuticals and biologicals. There are three committees established under the Drug Administration Authority: the Recipe Evaluation Committee; the Technical Committee; and the Drug Control Committee. The DG-DLS or his nominated representative is a member as the veterinary expert for registration of veterinary drugs. Once a product is registered, which may take several years in its entirety, the quality of imported and locally produced products is not controlled on a regular basis, which leaves room for fraud and adulteration. The UN has recently cited the common occurrence of false and adulterated drugs as one of the greatest global threats to health control. The veterinary pharmaceutical industry and other stakeholders are a part of correcting this problem, but it requires a solid foundation of institutions, regulations, and enforcement for registration and quality control to have any impact.

23. Registration is not required in Bangladesh for some feed additives such as toxin binders, antibiotics and vitamin-mineral premixes, leaving the country open to the importation of harmful and possibly banned substances. Importers may not import drugs produced and available in Bangladesh, although this is ironic given that there is no quality testing and control mechanism in place to assure efficacy and safety.

International opportunities

24. If Bangladesh is to compete globally in the market for livestock and their products, it needs to address how it can meet standards of the SPS agreement, as required under WTO for trade purposes. Similarly, Bangladesh is expected to meet the standards for animal disease testing, diagnosis, and reporting under the OIE guidelines. In both cases, institutional and technical capacity falls short of what is needed to meet WTO and OIE standards, particularly as laid out in the OIE standards for risk analysis and evaluation of veterinary services.

25. The OIE specifically states in Chapter 1.3.3 of the *Evaluation of Veterinary Services* that "... veterinary services must be able to demonstrate by means of an appropriate legislation and organisation that they are in a position to have control of the establishment and application of animal health measures, and of international veterinary certification activities". In this regard, Bangladesh falls well short of having the necessary capacity to address an adequate animal identification system, control of animal movement, animal disease control and reporting systems, epidemiological surveillance, and the communication of epidemiological information.

26. Any discussion of international market development for processed meats from Bangladesh will be more meaningful if Bangladesh also addresses the capacity for these necessary elements of public veterinary services.

B. Main Constraints

27. The main constraints of providing the most essential veterinary services, plaguing the development of livestock sub-sector are summarized below:

- Limited veterinary services, including disease diagnosis provided by DLS Veterinary Hospitals
- Lack of quality control of veterinary vaccines, drugs, feeds and breeding tools and materials
- Lack of strategic disease control program
- Poor disease investigation facilities and weak linkage between diagnostic laboratories and surveillance system. No epidemiological unit in DLS for disease surveillance.
- Lack of regulations pertaining to veterinary public health and food hygiene
- Absence of continuing veterinary education and training of veterinarians and auxiliary staff.
- Inadequate support for veterinary research
- Absence of quarantine service

C. Policy Issues

28. The issues summarized below are the primary issues that need to be addressed in order to make veterinary services more effective in Bangladesh. This section is divided into three main areas of focus which roughly coincide with the institutional reorganization that is needed in veterinary services of DLS (private veterinary services – animal health; public veterinary services – animal disease control; and, public veterinary services – veterinary public health and regulatory affairs).

Private veterinary service functions – Animal health

- Spatial coverage of veterinary service delivery
- Harmonisation and privatisation of AI service delivery
- Veterinary drug distribution and dispensing

Public veterinary services delivery – Animal disease control

- Institutional reform
- Capacity for preparation and response to trans-boundary animal diseases
- Disease emergency preparedness
- Privatization of vaccine production and QC of veterinary pharmaceuticals
- Assessment and continuing education

Public veterinary services delivery – Veterinary public health and regulatory affairs

- Unclear definition of functions, duties, and responsibilities of MoLF – DLS and MoH – DH and collaboration between them.
- Expert/advisory inter-ministerial committee (Animal and Human Health) for periodic monitoring of VPH issues in the country and initiating collaborative work between the two ministries.
- Capacity to perform surveillance, diagnosis, epidemiological analysis and to conduct studies on specific veterinary public health issues and veterinary public health education.
- Participation in international forums, i.e. FAO/Codex, OIE and WTO as the role of these institutions is likely to intensify in the future.
- Sanitation of the meat industry

D. Review of current policy

29. ***Livestock Development Policy 1992.*** The 1992 livestock development policy was formulated, covering the following areas: (i) development of improved breeds of cattle, poultry/ducks; (ii) production of feed for cattle, poultry/ducks; (iii) treatment and control of diseases of cattle, poultry/ducks; (iv) appropriate livestock education, training and research; (v) capital investment and credit management; (vi) insurance arrangement; (vii) establishment of cattle and buffalo farms; (viii) marketing management; and (ix) development of institute. This policy mainly focused on disease control issues with the following recommendations:

- Provision of one mobile veterinarian in addition to existing one veterinary surgeon.
- Encouragements of private sectors involving veterinary services with credit facilities.
- Withdrawal of subsidy in the provision of free medicine supply except anthelmintics.
- Increase of vaccine production capabilities.

30. The livestock development policy initiated in 1992 did not reflect the requirements of this sub-sector for the new millennium. The policy planning process was not broad to reflect the livelihoods of the poor people, particularly the landless, destitute women and children. The 1992 policy did not address the following critical issues: (i) diseases surveillance, reporting and development of data-base; (ii) transboundary diseases and quarantine measures; (iii) reproductive health, fertility control and AI; (iv) food and feed quality control; (v) veterinary public health, food hygiene and zoonosis control; (vi) veterinary drugs, vaccines, sera, chemicals, semen, embryo control; (vii) regulatory framework; (viii) zoo sanitary control; (ix) certification, registration and licensing; and (x) implementation of legislations and Acts relating to animal health, production, quality, veterinary education and research.

31. In the Fifth Five Year Plan, the following problems, especially related to health care facilities were identified. These policies were not fully implemented.

- Inadequate supply of vaccines,
- Medicines,
- Equipments and Appliances,
- Local stock conservation,
- Quality breeds,
- Feeds,
- Credit facilities and
- Other inputs.

32. In order to update the present veterinary services with specific emphasis on the reduction of poverty and its sustainability, a comprehensive review and assessments are done to fill-up the issues which are not addressed as per national need and the framework of the Animal Health Code (OIE, 2003).

E. Recommendations

33. Protection of livestock health requires a dedicated veterinary service focused on the objectives and addressing all the issues relating to disease control. This extends well beyond the provision of clinical veterinary services (treatment services). The recommendations for public and private sector functions of a comprehensive veterinary service are summarized below.

Private veterinary service functions – animal health

1. *Spatial coverage of veterinary service delivery*

- Support private veterinary services
- Soft loans
- Establish “community veterinarians”, privatize
- Legislation linking vet drug distribution to vet profession; license a vet pharmacy linked to a Veterinarian who is licensed to dispense
- Stimulate collaboration between vet pharmacies and veterinarians
- Stimulate and assist establishing community based private practices.
- Develop options for CAHWs
- Regulatory changes encouraging fair play

2. *Veterinary drug distribution and dispensing*

- Stop provision of free drugs to livestock owners
- QC vet drugs dispensed via private pharmacies
- Set up licensing system for vet drug vendors and pharmacies
- Increase supply/distribution of high quality vaccines to Upazila veterinary offices

Public veterinary services – animal disease delivery

3. *Institutional reform*

- Establish a dedicated official veterinary service and amend legislation

4. *Capacity for preparation/ response to TADs*

- Disease emergency preparedness

- Establish a disease emergency preparedness planning unit
- Existing staff, new focus
- Works closely with the epidemiology unit
- CDIL acts as the diagnostic co-ordinating centre
- Improve communication (e.g. between FDILs, public, media)
- Establish/improve disease information system

5. ***Privatization of vaccine production and QC of veterinary pharmaceuticals***

- Improve vaccine production capacity and quality
- Move to privatize vaccine production
- Outline vaccine regulation including external laboratory testing

6. ***Assessment and continuing education***

- Operate DLS training facilities on cost-recovery basis
- Privatize or contract with private trainers
- Extensive revision of staff training and pay-for-merit
- Fellowships to training to MSc level
- Workshops for animal health staff and national training course
- Align graduate programs with need

34. Along with the above recommendations, an assessment of the division between public and private goods in the context of veterinary services is clearly needed. The definition of the roles of the public and private sectors is an important component of livestock development policy and should be based on an evaluation of the relative institutional capacities and comparative advantages of the public and private sector. The Government of Bangladesh has indicated that it accepts the changed global environment and wishes to establish a public sector that deals with the core public functions.

35. It is prudent at this point to revisit an earlier set of recommendations because they are consistent with the findings of this investigation, and will be summarized here. A core function analysis was conducted by DANIDA to establish the functions and roles of the private and the public sectors (Hansen, 2003, p23). The general conclusion was that more of the activities should be outsourced to the private sector.

36. In principle three types of activities are identified and can be categorized on the basis of the public, private, or mixed domain and responsibility of the activities. These are:

- Activities that are the responsibility of the *public sector and should be implemented and paid for by government* (e.g. disease surveillance; emergency preparedness planning);
- Activities including necessary regulations that are the responsibility of the *public sector* and should be paid for, coordinated, and monitored by government *but may be implemented on contract by the private sector or by public/private sector partnerships* (e.g. vaccination campaigns for diseases of national importance); and,
- Activities that are the *domain of the private sector* or in a transitional phase a public/private sector partnership with the full cost recovered from the beneficiary (e.g. veterinary drug input supply and treatments).

37. The first step needed by DLS in restructuring is to assess the public and private sector roles and responsibilities as suggested, and move to reorganize DLS along those lines. This process may, of course, require a long and detailed action plan with continued input from external experienced expertise. But the absolute first step must be a commitment by DLS to undertake the exercise of assessing which goods and

services it deems in the public, private, and mixed domain. The following suggested categorization is consistent with the above recommendations.

Public sector functions

- Policy formulation and strategy development (e.g. fiscal, capital for service provision including disease control and surveillance, education and training, and research);
- Regulation and enforcement of the private sector (e.g. quality control and assurance, licensing of service providers, certification, animal welfare);
- Disease surveillance, disease intelligence gathering, maintaining a disease information system and provision of information to international organizations such as OIE;
- Control of transboundary animal diseases (e.g. rinderpest, PPR, and FMD);
- Maintain reference laboratory capacity for disease investigation and surveillance;
- Emergency preparedness planning and coordination of implementation;
- Veterinary public health including control of zoonotic diseases, food, and feed safety (quality control and quality assurance) and meat inspection;
- Quality control and assurance of veterinary drugs, vaccines, semen, etc.;
- Quality assurance of private sector service deliverers; and,
- Enforcement of regulations.

Private sector functions

- Provision of clinical services and treatment of individual animals;
- Conduct of herd health programmes and routine vaccinations;
- Production and/or importation and distribution of veterinary drugs, biologicals, pharmaceuticals and semen;
- Provision of credit; and,
- Training farmers, entrepreneurs, and veterinary auxiliaries including community animal health workers.

Joint Public-Private sector functions

- Vaccination and related activities for the control of transboundary animal diseases;
- Reference laboratory services for disease investigation and surveillance;
- Research and development with follow-up extension (e.g. Farmer Field Schools);
- Information – collection, collation and dissemination, including extension services;
- Human resource development and in service training;
- Meat inspection (through contractual agreement supported by regulation).
- Promotion of the livestock industry and exports;
- Implement activities (as a sanitary mandate and on a contractual basis) on behalf of national transboundary animal disease control programmes;
- Meat inspection on contract from the public sector.

F. Proposed project

Project 1: Strengthening Disease Surveillance and Trans-boundary Disease Control Capacities

Project 2: Strengthening the Veterinary Public Health Services

Project 3: Poverty alleviation through community based veterinary services

Project 4. Establishment of Animal Quarantine Service

G. Action Plan:

Project Titles	Durations	Estimated Costs (US\$)	Actions	Responsibilities
1. Strengthening Disease Surveillance and Transboundary Disease Control.	5 years	10 millions	<ol style="list-style-type: none"> 1. Assessment of current status of surveillance and transboundary animal disease control. 2. Development of facilities and provisions for training. 3. Establishment of an epidemiology unit in DLS 4. Initiation of strategic control programme for prioritized diseases. 5. Development of electronic based disease warning and forecasting system. 6. Verification of freedom for rinderpest and BSE. 7. Development of mini-laboratories at UVH. 	DLS/MOFL
2. Strengthening the Veterinary Public Health Services.	5 years	10 millions	<ol style="list-style-type: none"> 1. Assessment of current status of veterinary public health. 2. Development of facilities and provisions for training. 2. Framing of regulations and standards 3. Carrying out zoonotic and food-borne diseases surveillance 5. Provisions for inspection of abattoirs and food establishments. 	DLS/MOFL & NIPSOM/DOH/MHFW
3. Poverty alleviation through community based veterinary services.	5 years (1 st 5 years)	10 millions	<ol style="list-style-type: none"> 1. Identification of pilot project area. 2. Development of farmers group or community. 3. Recruiting veterinarians 4. Training of veterinarians, staff and community leaders. 	DLS/MOFL and LGRD/MOLGC
4. Establishment of Animal Quarantine Service	5 years	5 million	<ol style="list-style-type: none"> 1. Survey on animal and animal product import. 2. Identification of points for quarantine stations. 3. Setting of rules and standards. 4. Training of quarantine personnel. 5. Establishment of quarantine stations 	DLS/MOFL

CHAPTER 7

Institutional analysis of DLS and BLRI

I. Department of Livestock Services

A. Background/overview

1. Three major public sector institutions are dedicated to livestock development in Bangladesh. These are: (1) Department of Livestock Services (DLS); (2) Bangladesh Livestock Research Institute (BLRI); and (3) Bangladesh Agricultural University (BAU), Mymensingh. BLRI is fully dedicated to livestock research. The Faculties of Veterinary Science and Animal Husbandry of BAU provide undergraduate and post-graduate education, and also carry out limited research. The four Veterinary Colleges under DLS offer Bachelor's degree in veterinary science. DLS is solely responsible for improving livestock production and providing livestock services to farmers. Ministry of Youth has a program of training unemployed youth in livestock rearing and vaccination. Private sector engagement in livestock development has increased significantly, and NGOs, foundations, para-veterinarians, commercial input providers, and private veterinary practitioners are increasingly providing services to livestock farmers.

2. In 1862 the first Military Veterinary Hospital was established in Bombay in British India, eventually establishing the civil veterinary service. After the division of India in 1947, veterinary services were placed as a separate entity under the Ministry of Agriculture, and livestock production activities were associated with crop agriculture. Later on, livestock production and veterinary services were merged and reorganised into a Livestock Division. This Division was, again, transformed into a Directorate, called the Directorate of Livestock Services in 1960. The Government of Bangladesh renamed the Directorate as the Department of Livestock Services under the Ministry of Fisheries and Livestock in late 1980s.

3. The mandate and functions of DLS include all activities related to livestock development and control of livestock diseases. This includes provision of veterinary services and training, research, development of improved livestock breeds, artificial insemination, development of feeds and fodder for improving livestock nutrition, vaccine production, procurement and distribution of drugs and equipment, dissemination of technology, extension of livestock services, collection of data and economic assessment of livestock production, and the development of zoological and survey of wild life. Since 1960, the mandate and functions of DLS have remained almost unchanged.

4. DLS is organized into five divisions, headed by five Directors. The five divisions are: (i) Animal Health and Administration; (ii) Research, Training and Evaluation; (iii) Extension; (iv) Officers Training Institute; and (v) Production. The divisions are functionally split into sections to deal with different subject matters. It has 5 Divisional Livestock Offices, 64 District Livestock Offices and 464 Upazila Livestock Offices. Divisional offices coordinate and supervise the activities of the District offices, and carry out liaison functions with the sister and other related organisations. DLOs supervise and coordinate the livestock development activities at the Upazila level and maintain liaison with the concerned departments and the district administration. ULOs are charged with performing the following functions: (i) technology transfer; (ii) disease control and prevention, including clinical treatments; (iii) disease reporting; (iv) collection, documentation and dissemination of information; (v) farmers' training; (vi) implementation of special projects; (vii) management of Upazila Veterinary Hospital; and (viii) distribution of micro credit (by a special order).

5. Other entities of DLS include a Livestock Research Institute (LRI), a Central Disease Investigation Laboratory (CDIL), 7 Field Disease Investigation Laboratories (FDIL) and 64 District Veterinary Hospitals. DLS also has 35 poultry farms, 4 duck farms, 7 cattle breeding and/or dairy farms and one buffalo breeding farm. The Director General is the executive head, at the top of the line of command, followed by the Directors, Deputy Directors, Unit Heads and so on. DLS follows a highly centralized management system.

6. Since the creation of DLS, its mandate and functions, structure, organization and management system have not been reviewed and updated. It is only recently during the livestock sector review in 2003 (PPSU/MOFL, 2004) that institutional analysis of DLS was conducted. The report extensively discussed the areas of deficiency and weaknesses and made recommendations for change. Action to implement the recommendations is still pending. This section of the policy recommendations heavily draws on the findings of the previous studies; as well, it includes analysis of areas that were not adequately addressed.

B. Main Constraints

7. Over the last decade, particularly after economic globalisation and trade liberalisation, the development perspective has changed. The role of government is shifting. Private sector is becoming a major partner in social and economic development. Reflection of this phenomenon is clearly seen in the current trend of development of poultry and dairy in Bangladesh, where growth is coming from the private sector initiatives despite many policy, technical, regulatory and management constraints. This is elaborately dealt with in the reports of the national consultants on dairy and poultry. The positive changes so far taken place in the sub-sector were induced by ad hoc policy measures at the initiative of DLS. But the transformation that is needed for rapid development of the sub-sector to contribute to poverty reduction is not properly guided by appropriate public policy. The livestock policy that was formulated in 1992 did not address the institutional issues so critical to provide support to smallholder livestock development.

8. The major constraints identified in the sector study (2003) and in this study are given in Box. 3. The constraints are described in detail in the sector study and in the consultant reports of this study. Here the main issues are discussed covering the constraints given in Box 4.

Box. 4: Main Constraints

- Inappropriate mandate and functions
- Structural and organizational deficiency
- Frontline services (Upazila) thin and weak
- Weak linkages with BLRI and other organizations/Ministries
- Weak management system, including MIS
- Slow recruitment and promotion system
- Shortage of skilled manpower
- Lack of regular training
- Lack of facilities
- Limited budget allocation

C. Policy Issues

9. The main policy issues for improving the effectiveness and efficiency of DLS in providing public good services as identified in this and other studies are:

- Updating of mandate and functions
- Structural and organizational change, including management
- Retraining of DLS staff in line with new functions
- Increased and alternative funding support

10. The current mandate and functions of DLS are inappropriate in the context new developments and changes in the national and international economic and trade environment. DLS is basically performing the private good functions. It is not providing the public good services such as disease surveillance and reporting, food safety, enforcement of laws and regulations, quality control of feeds, drugs, vaccines, semen and breeding materials and other public good services by reorganizing DLS into a more effective and efficient public sector organization to meet the challenges of the 21st Century. Clearly there are areas where private sector is far ahead of the public sector. Private poultry industry is a good example. Smallholder dairy is also growing under private sector. Veterinary clinical and animal management services are expanding at private initiatives. Feed mills are already in the hands of the private sector. Private farms and NGOs are also engaged in artificial insemination program. Many foreign and local drug companies are manufacturing and selling animal drugs in Bangladesh. These are positive developments. But in the absence of regulatory frameworks, livestock development in the private sector is taking place in an indiscriminate manner, which has created serious problems of quality control in livestock products, drugs, vaccines, feeds, and breeding materials (details are given in the reports of the veterinary and other consultants). This is seriously affecting smallholder livestock productivity.

11. In the context of increasing participation of private sector in livestock development, there is a need to redefine the mandate and functions of DLS in a fashion that will allow it to gradually withdraw from the areas with greater involvement of the private sector, and engage in delivering public good services (enforcement of laws and regulations, quality assurance, disease investigation and surveillance, veterinary public health, policy formulation and strategy development). Rapid development of livestock and poultry hinges on mutually supportive and complementary role of the public and the private sector.

12. The current structure of DLS is a mix of everything with little focus on the issues that matter most for a public sector organisation. The functional Divisions are not structured in a logical fashion. Elements of veterinary services are scattered in different divisions/sections and they function in an uncoordinated manner. The Veterinary Public Health Section exists in name; it is neither equipped nor have the funds to deal with disease surveillance and reporting, food safety and control of zoonotic diseases and other public health issues. It has no linkage with the Health Department and the Public Health Institute. It also does not have supporting legal framework to implement its mandate. Almost nothing is done for disease surveillance, including trans-boundary diseases. LRI, CDIL and BLRI are involved in doing one and the same thing in isolation. There is no collaboration among these institutions; not even information exchange. This is discussed in detail in the report of the veterinary consultant. LRI and CDIL are vital organs of DLS for providing public good services; but they have been turned ineffective by not providing operating funds for years. DLS is giving greater emphasis on production and clinical treatments that can be efficiently done by the private sector.

13. DLS does not have a central policy and planning unit. It also does not have a management information system in place in real sense. At least two attempts were made to establish livestock information system – first with the support of the Asian Development Bank (ADB) and second with the support of the European Commission (EC). The first attempt totally failed after the end of the project. The second attempt initiated with the support of EC ignored what has been achieved under the first project. However, EC-supported project called “Strengthening Livestock Information System” created an Information Unit to provide information service on production and disease surveillance. This Unit has all the facilities, but remained inoperative after the end of the project due to lack of funding support from the Government. Linkages of DLS with BLRI and other institutions/ organizations/Departments/ Ministries are very weak. There is no coordinating mechanism or official forum, where they can meet and exchange views and ideas.

14. The management system of DLS is highly centralized. The Director General retains the authority to decide and approve almost all businesses and transactions. Delegation of authority to the Unit Heads (heads

of divisions, heads of cattle and poultry farms and heads of District and Upazila offices) is limited. Internal coordination among functional units and monitoring system are weak. Capacity to undertake master planning, strategic planning, priority setting, and building and managing partnership with private sector, NGOs and CBOs for livestock development is also limited. Most of the Division/Unit Heads are not holding a regular post. They are acting as in-charge for years. The Director General himself is also not a regular appointee. He is also an acting DG. Many livestock officials are serving as Upazila Livestock Officers for 30 years.

15. The Ministry retains the authority to approve transfer of staff on the recommendation of DLS, but many a times they ignore the recommendations; sometimes transfers are made without the knowledge of DLS. Staff management in terms of promotion and deployment is, in many cases, improperly executed due to external pressure. In many instances, officers are posted in positions for which they neither have the qualifications and skills nor experience. This is not only causing wastage of expertise but also creating negative effects on the performance of individuals as well as of DLS.

16. DLS does not have a human resource development policy in line with the functions it performs and also to address the attrition problems as well as to appropriately fill the vacuum created after the retirement of skilled and experienced staff. Often posts that require specialised skills are filled with persons having inappropriate qualifications and experience. DLS also does not have a master plan for short and long term training and retraining of technical and managerial staff to upgrade their knowledge and skills. The managers of DLS do not have management training. Many staff did not receive any training after their graduation. Some, of course, have received training in a sporadic fashion through disjointed development projects (Table 7). DLS has an Officers Training Institute (OTI) without having a regular short-term training program. Training is not included as a separate line item in the annual budget. As a result, OTI and the three Staff Training Institutes (V.T.I and L.T.I.) under DLS remain idle due to lack of funds and programs. OTI is occasionally used only for training of staff under development projects. Staff Training Institutes (V.T.I. and L.T.I.) have remained unused for years. The Principal and his staff are sitting idle or doing something else. This is a sheer wastage of government resources. Heavy investments were made in creating the training infrastructure, but ironically, they are not utilized because the Government does not provide operational funds. OTI can be reactivated with minimum resources to provide management training. The resources available with CDIL, CVH, Analytical Laboratory and Public Health Section of LRI can be pooled to provide technical training on epidemiology, disease surveillance, veterinary public health, quality control, quarantine services, etc. These training facilities should either be properly used or the entire training activities should be privatised, if opportunities exist.

Table 7. Staff training status of DLS 1999-2004

Year	Abroad			Local		
	> 2 Week	2 weeks – 16 weeks	16 weeks and above	> 2 week	2 weeks –16 weeks	16 weeks and above
1999	6	24	11	160	-	-
2000	18	2	19	400	245	-
2001	4	24	9	544	30	5
2002	8	20	7	975	117	-
2003	20	8	-	386	5	-
2004	28	9	4	231	6	-

Source: Department of Livestock Services

17. One of the critical issues is inadequate allocation of funds to DLS under revenue budget. In recent years, the allocation has further declined. Operating cost received through revenue budget has dropped from 6.15% in 1999-00 to 3.18% in 2003-04 (Table 8). DLS cannot perform many of the essential and core functions due to shortage of funds. About 58% percent of revenue allocation goes to salaries and

allowances; 36% for overheads; and only 4.7% is spent for meeting the operating expenses that mainly includes medicine and small equipment. Very little fund is available for livestock nutrition, management and extension. In real terms, the allocation is gradually declining. In a recent paper “Bangladeshe Poshushampader Unnyan: Karma Parikalpana” (Quasem, 2001), it is reported that on average, more than 15,000 families in an Upazila raise about 40,000 cattle. The average annual budget for livestock development for the Upazila during the reporting period was Tk. 756,186. This means that the annual allocation per livestock family was Tk. 50 only. Major part of this allocation is spent on salary and allowances and overheads. Virtually nothing is left for veterinary services. The picture is not different now.

Table 8. Annual Allocation to DLS under Revenue Budget (in ‘000)

Year	Total Allocation	Salary and Allowances	Overheads	Operating Cost
1999-00	950,818	54,39,56 (57.21%)	30,83,62 (32.43%)	5,85,00 (6.15%)
2000-01	1002,775	60,33,33 (60.17%)	34,44,42 (34.35%)	5,50,00 (5.48%)
2001-02	1156,975	71,55,84 (61.85%)	38,76,78 (33.51%)	5,37,13 (4.64%)
2002-03	1132,063	59,64,81 (52.69%)	48,55,82 (42.89%)	5,00,00 (4.41%)
2003-04	110,16,35	64,71,76 (58.74%)	41,94,59 (38.07%)	3,50,00 (3.18%)
Average	106,88,53	62,13,06 (58.13%)	38,91,04 (36.40%)	5,04,42 (4.72%)

Source: Department of Livestock Services

18. If the Government has to provide public good services to livestock farmers, it has to increase the annual budget allocation substantially and introduce subsidies as India has done for the small and marginal livestock farmers in order to reduce poverty. The Government may explore the possibility of alternative funding sources to support DLS’s private good services that they are now providing due to limited involvement of the private sector in those areas. As the involvement of the private sector increases, DLS should gradually withdraw from those areas. BAU has a veterinary clinic, which provides veterinary services on partial cost recovery basis. DLS can also provide veterinary clinical services, a private sector function, on cost recovery basis. DLS should also try to generate funds by productively using the unused or underused facilities (Training Institutes, Poultry Farms, A.I. Centres) to reduce pressure on revenue budget, with the condition that the funds so generated are not returned to the treasury but kept in a separate account of DLS to spend the amount for the services, and submit the annual expenditure statement to the Government at the end of the fiscal year.

19. DLS has to heavily depend on development budget that comes through time-bound projects. The difficulty with the development project is that in most cases, the important activities that need to be followed up cannot be continued due to lack of funding support from the government after the end of the project. DLS should not be left to perform the core public good functions with funds from development projects. To quote from PRSP document, “One major shortcoming is that the Government budgetary provision for livestock sub-sector has been traditionally too meagre compared with crop sector allocations. This has to be increased manifold if there has to be significant development in this sub-sector”.

D. Review of current policy

20. There is no comprehensive policy for livestock development. The sub-sector mainly follows the plans and programs defined in the national five-year plans and the ad hoc policy measures taken by the Ministry at the initiative of DLS from time to time. The livestock development policy, prepared in 1992,

described a number of policy objectives of which the main ones are given below. This policy paper did not deal with institutional issues.

- Self-sufficiency in milk, meat and eggs
- Increased supply of animal draft power
- Speedy reduction of import of milk powder
- Poverty reduction through creation of self employment
- Support to private sector for export of broiler meat, mutton, etc.
- Improve marketing system

21. The last two five-year plans (fourth and fifth plans) also did not address the institutional issues of the livestock sub-sector. They focused on:

- Genetic improvement and husbandry practices
- Animal health services
- Fodder supply
- Poverty alleviation through poultry farming
- Market improvement
- Strengthening extension service
- Price information service
- Introduction of livestock products purchasing program

22. Other policy objectives also focused on production increase. The fifth five-year plan almost maintained more or less the strategy of the fourth five-year plan. None of these plans addressed the institutional problems.

23. DLS felt the need for reviewing and updating its mandate and functions, and structure and organization in the context of national and global changes, including the international treaties in which Bangladesh is a signatory. A specific study on institutional analysis, supported by DANIDA, was done during the livestock sector review and the report was submitted in 2003. In the report, many good recommendations have been made, which are yet to be implemented. DLS has, again, taken the initiative through the current policy study to bring the issue in the policy agenda. Renewed attempt is being made under this study to address the institutional issues; but the desired institutional changes will take place only if the recommended policies are religiously implemented.

E. Recommendations

1. Redefine the function of DLS
2. Reorganize DLS, based on new functions
3. Train DLS staff to deal with new functions

24. After careful review and analysis of the current mandate, functions, structure, organizational setting and management system of DLS, the following policy recommendations are made for adoption to address some of the critical institutional problems. Other important institutional problems are dealt with in the reports of other consultants.

- § Initiate institutional reform focusing on redefining the mandate and functions of DLS, adjusting the structure and organization in line with the redefined functions within the existing framework, and improving management system, including management information system (MIS).

- § Undertake a retraining program to equip the existing staff with new knowledge and skills within the framework of a clearly defined human resource development policy and plan to effectively perform the new functions.
- § Increase revenue budget and introduce subsidy for small and marginal livestock farmers to support the public good functions, and explore the possibility of finding alternative funding mechanisms to support the private good functions, being carried out by DLS, until the private sector gets significantly involved in delivering those services.

F. Proposed projects

Phase I (Short Term)

1. Renewal of DLS through institutional reform
2. Human resource development
3. Reactivating the training institutes

Phase II (Medium and Long Term)

1. Reforming DLS (5-year project to be designed in Phase I)
2. Skill development training (5-year project to be designed in Phase I)
3. Capacity building of the Training Institutes (3-year project to be designed in Phase I)

G. Action Plan

Project Title	Duration	Estimated cost	Actions	Responsibility
1. Renewal of DLS through Institutional reform Phase I: Determining the nature of reforms to be made Phase II: Implementation of the reforms	15 months 5 Years	US\$ 200,000 To be determined in Phase I	1. Redefining the mandate and functions of DLS 2. Designing new organizational structure based on new functions 3. Designing improved management system, including MIS 4. Preparing a five-year project proposal for implementing the reform Work plan to be detailed in a 5-year project proposal in Phase I	DLS, MOFL, DLS, MOFL DLS, MOFL DLS, MOFL DLS, MOFL
2. Human resource development Phase I: Developing policy and training master plan Phase II: Implementing the training plan	12 months 5 years	US\$ 150,000 To be determined during 5-year project preparation	1. Drafting human resource development policy 2. Developing a 5-year Training Master Plan 3. Developing annual training program for 5 years, based on Master Plan 4. Preparing a 5-year project proposal for implementing the training program Work plan to be developed during 5-year project preparation	DLS, MOFL DLS, MOFL MOFL, DLS DLS, MOFL DLS
3. Reactivating the Training Institutes Phase I: determining the requirements for building the training capacity Phase II: Building the capacity of the Training Institutes	18 months 3 years	US\$ 250,000 To be determined at the time of preparing the project	1. Assessing the requirements in terms of training materials, logistics, manpower and renovation of physical infrastructure 2. Preparing a detail 3-year project proposal for building the training capacity of the Institutes Work plan to be developed during project preparation	DLS, MOFL DLS, MOFL DLS

II. Bangladesh Livestock Research Institute

A. Background/overview

1. Livestock research was the mandate of DLS before 1984, although very little research was done due to shortage of funds. DLS used to carry out some important research through development projects although continuity of research was problematic after project completion. Furthermore, research was done in a disjointed fashion on topics in which donors had specific interest. Regular and continued research on livestock started in 1985 after the establishment of the Bangladesh Livestock Research Institute (BLRI). BLRI is a semi-autonomous body created by Presidential Ordinance with the following main functions:

- § Identify and solve the basic livestock problems of the country through research;
- § Develop suitable methods for quick diagnosis and treatment of various livestock diseases;
- § Study epidemiology and immunology of existing various diseases and their effects;
- § Develop appropriate technologies for production of suitable biologics;
- § Develop suitable breeds of livestock for increasing production of milk, meat and draught power and poultry for eggs and meat;
- § Develop methods for improving production and preservation of fodder and feeds, and for better utilization of agricultural by-products, wastes and non-conventional food stuff for improving livestock production;
- § Improve management and production practices that will ensure better health and production of animal and birds;
- § Develop improved methods for collection, processing and storage of livestock products that will reduce spoilage and improve storage quality;
- § Assess production and marketing of various livestock and their products and develop suitable grading and marketing systems;
- § Disseminate information regarding research of livestock to farmers and through the literature;
- § Organise seminars, symposiums, and workshops on problems of national importance in the field of livestock.

2. The 1984 Ordinance was amended in 1996 as an Act in line with the amendment of the Act of the Bangladesh Agricultural Research Council (BARC), the apex body of research. There was no substantive amendment of the Ordinance other than replacing a few words to keep it in line with the Act of BARC. For example, the word “Governing” has been replaced with the word “Management” to change the Governing Board to the Management Board. But the composition of the Board and its powers has remained the same, meaning little if anything has changed.

3. BLRI is organized into five research divisions and one administrative division, called the support service division, with a number of sections under it. There are two separate sections, one dealing with training and one dealing with planning, apparently operating directly under the office of the Director General. The five research divisions include: (i) Animal Production; (ii) Poultry Production; (iii) Animal Health; (iv) System Research; (v) Socio-economics; and (vi) Goat and Sheep Production. BLRI also has two regional research stations.

4. The Ordinance provides a Board of Governors for the general direction, administration and supervision of the affairs of the Institute. The Director General of the Institute is appointed by the Government as the chief executive of the Institute, responsible for efficient management and proper execution of the decisions of the Board. An Additional Director is in charge of administration. The Research Divisions are headed and guided by Chief Scientific Officers. There is no built-in system of career progression within each research division as is the case for the research institutes in the crop sector.

Unfortunately this has resulted in vacant positions not being transferred by the Ministry of Finance under the revenue budget, resulting in a serious problem of research program management.

5. A Technical Committee headed by the Director General provides technical inputs and reviews the annual research programs, including the research budget for submission to the Board for approval. The composition of the Committee is well balanced. The Board has also established a Finance Committee (not functioning) and three Appointment and Promotion Committees for recruitment and promotion of officers and support staff. The Secretary of the Ministry chairs “Committee No. 1”, which deals with appointment and promotion of PSO, CSO and the equivalent positions. The Executive Chairman of BARC chairs this Committee in the case of crop Research Institutes and it would seem prudent that the same arrangement be maintained in the case of BLRI.

B. Main Constraints

6. In one hand, dramatic changes have taken place in Bangladesh with the sprawling of rural commercial centres having forward and backward linkages with agriculture. On the other hand, globalization and trade liberalization combined with WTO regulations and OIE requirements have changed both the domestic and the international market needs. The market (domestic and international) has become far more competitive now than ever before. There are many important new issues that must be reflected in the functions of the Institute to guide the research programs based on market needs. In the context of these changes, the functions of BLRI need to be reviewed and necessary adjustments made. Accordingly, structural and organizational adjustments will also be needed. Gaps already exist in information management, planning and coordination of research activities. Breeding and biotechnology research are hidden in Animal Production Division. Recently, BLRI has created two more new Divisions: (i) Biotechnology and (ii) Planning, Training and Technology Demonstration. This will take care of some of the gaps, but not all, if the Divisions become operational. Veterinary research is done in a limited scale under the Animal Health Division. This Division is also engaged in providing some important service functions to meet the demand of the private sector, which should be done by LRI and CDIL as per their mandates or these could be done on a collaborative basis because of shortage of expertise in the area.

7. Major deficiencies exist in planning and management, particularly in human resource management and information management. There is no Unit and no staff to deal with planning, evaluation and monitoring. BLRI neither have the capacity to formulate long-term plan, rolling plan or strategic plan nor have the capacity to conduct internal evaluation and monitoring of research. There is no provision a Director (Research), responsible for research planning, coordinating and monitoring the implementation of research projects; evaluating and reporting research outputs on a regular basis; and maintaining direct contact with DLS and sister research institutions, and liaison with other concerned Departments. Information management, particularly management information system (MIS) for research is totally absent at BLRI. Like DLS, BLRI also has problems with training of its personnel. There is no provision for staff training and no built-in system of career progression within each research division like the research institutes in the crop sector, where the entry post is Scientific Officer (SO) who can move to SSO to PSO to CSO positions within the same technical division. This has caused a serious problem of managing the research programs. This has resulted in high attrition rate. Qualified scientists leave the Institute as soon as they find a better job.

8. BLRI as per the Act is supposed to be a semi-autonomous Research Institute, governed and managed by a Board. But in practice, it is governed and managed by the Ministry. Almost nothing can be done without the approval of the Ministry. Recruitment, promotion and transfer everything needs Ministry’s approval. The Director General has limited authority. Some of the Clauses have been introduced in the Act in such a manner that they could be interpreted in favour of the Ministry, although the spirit is different. One such Clause is Appointment of officers. The spirit of this Clause is that the Board will

determine the total requirement of staff, their qualifications and grades for approval of the Government. Once the Government approves these requirements, the Board is responsible for recruitment, appointment and deployment of staff. But the Ministry is exercising full authority to recruit and appoint staff. The autonomy of the Institute and the authority of the Director General have thus been curved, and virtually the Institute has become a Government Department like DLS.

9. Funding problems of BLRI are more serious. Annual allocation not only shows a declining trend in real terms but there is almost no allocation for meeting the operating costs for research. Average allocation for research is only 6.5% for the last five years (Table 9). Spending on salaries and allowances is about 41%; but expenditure on overheads is unusually high (51%); much higher than DLS (38%). BLRI has been entirely depending on development budget and the contract research grants from BARC (also under development projects) for carrying out research. This has never allowed BLRI to develop and undertake meaningful research programs that could support the poverty reduction program of the Government.

Table 9. Annual Allocation to BLRI under Revenue Budget (Tk. in ‘000)

Year	Total Allocation	Pay and Allowances	Overheads	Operating Cost for Research
2000-01	147,50	82,00 (55.60%)	65,50 (44.40%)	0
2001-02	148,00	82,00 (55.40%)	66,00 (44.60%)	0
2002-03	177,45	82,00 (46.21%)	85,45 (48.15%)	10,00 (5.63%)
2003-04	334,85	92,00 (27.47%)	209,85 (62.67%)	33,00 (9.85%)
2004-05	241,13	95,00 (39.40%)	120,93 (50.15%)	25,20 (10.40%)
Average	209,78	86,60 (41.28%)	107,55 (51.20%)	13,64 (6.50%)

Source: Bangladesh Livestock Research Institute

C. Policy Issues

10. The main issues for turning BLRI into a more effective and efficient institution that provides technological support to development agencies engaged in livestock and poultry development, moving towards poverty alleviation, are summarized in the following box.

- Amending the existing Act to sharpen the functions, with delegation of authority to BLRI to make it compatible for carrying out research more efficiently and effectively
- Adjusting the structure and organization, based on functional analysis
- Improving research management (planning, priority setting, monitoring and evaluation) by involving the main stakeholders
- Improving staffing pattern and providing career development opportunities
- Increased and alternative funding support

D. Recommendations

1. Strengthen BLRI by sharpening its functions, adjusting the structure and organization and improving management, including research management.
2. Increase revenue budget and find alternative funding mechanisms to support priority research programs of national importance

F. Proposed project

11. Only one project is suggested to remove the deficiencies exist in the function, structure, organization and management of BLRI. The project may have two phases - Phase I and Phase II. In phase I, a group of consultant will work on amendment of the Act, sharpening the functions, adjusting the structure and organization, designing the management system of BLRI and developing a long-term project for implementing the changes in Phase II.

Project 1. Renewal of Bangladesh Livestock Research Institute

G. Action Plan

Project Title	Duration	Estimated Cost	Actions	Responsibility
Renewal of Bangladesh Livestock Research Institute				
Phase I: Working out the changes to be made	6 months	US\$ 50,000	<ol style="list-style-type: none">1. Drafting amendments of the Act2. Defining mandate and functions3. Adjusting structure and organization4. Designing improved management system5. Drafting a detail 5-year project proposal for strengthening BLRI	BLRI, MOFL
Phase II: Implementation of the changes through a 5-year project	5 years	To be determined in Phase I	Work plan to be detailed in a 5-year project proposal	BLRI

CHAPTER 8

Hides and Skins

A. Background/overview

1. The annual availability of hides and skins in Bangladesh is 180 million square feet (from cattle and buffalo 116 million sq. ft.; from sheep and goats 64 million sq. ft.) Leather is the third most important export earner for Bangladesh, contributing about 6-7% of total export earnings. Bangladesh earns about Tk.1600 million annually from exporting crust and finished leather and leather goods. A large proportion of the materials is downgraded and rejected due to various defects. Leather defects are responsible for a 55.2% cut in the value of leathers. In 1990-91, an economic loss of Taka 818 million or US \$220.95 million (cattle US \$194.5 M, buffalo US \$ 1.9 M, goat US \$ 24.1 M, sheep US \$ 0.5 M) was estimated due to leather defects (Dey and Nooruddin, 1993). Nooruddin and Samad (1989) reported the prevalence of individual ante-mortem (47.2%) and post-mortem (14.7%) defects in wet salted-goat skins. They also reported 71.8% and 61.8% defects in wet-blue goat leather respectively.

2. In addition to leather from Bangladeshi livestock, a sizeable quantity of cattle hides and goat skins come from India. The government allows duty free import of raw hides and skins as well as semi-processed leather for re-export with value addition. Hides and skins of Bangladesh origin are smaller in size and thinner in substance compared to those of the other countries due to under feeding and slaughtering at early ages for economic reasons, which results in loss of meat and footage in leather. The average size and weight of Bangladesh cowhides are 18 sq. ft. and 6 kg respectively, which are equivalent to European and American calves. The size of goat and sheepskins varies from 1.5-7.0 sq. ft.

3. About 35-40% of the total annual slaughtering takes place in two days at Eid-ul-Azha called Qurbani Eid, one of the main Muslim festivals. Usually, defect-free best animals are sacrificed at the Eid festival and the hides and skins of sacrificed animals are generally bigger in size and better in quality.

4. There is no mechanized slaughterhouse in Bangladesh. Most of the slaughtering takes place in the nooks and corners of cities, towns, and villages, often ill equipped with weak facilities for electricity, water, and sewerage. There are about 192 improvised slaughter houses at district level, 1215 at Upazila/thana level and more than 3,000 slaughtering points in hats and bazaars as well as by road sides of cities and towns. Hides in most of these cases are removed by unskilled persons using ordinary pointed knives, giving rise to irregular shape and flay cuts resulting in financial losses. Defects in goat and sheepskins have been significantly reduced in recent years with the introduction of hang and pull system of flaying. There are 19 hides and skins grading parties working under the Department of Agriculture Marketing to demonstrate flaying and preservation of hides and skins, although they account for less than 10% of the annual slaughter.

5. Hides and skins are generally collected by a complicated but well organized chain of middlemen (figure 1). Tanners often buy their raw materials directly from the main hides and skins bazaars at different collecting points. Aratdars act as commission agents or dealers. Purchase is made on credit or in cash.

6. Besides hides and skins, the slaughtering of animals generates various kinds of valuable by-products including blood, bones, hoofs, rumen and visceral contents, hairs, etc. Only a part of certain by-products, generated mainly in organized slaughter houses, are collected and processed by the cottage level factories. The major portions including entire blood, rumen contents, etc. are drained or thrown away, resulting in large economic losses and environmental pollution.

7. Once infrastructure is improved, the cost of transforming crust leather into finished leather and leather products should be considerably less than the cost in developed countries, increasing the

competitiveness of exportable Bangladesh leather goods. This will in turn generate higher export earnings, create employment opportunities, and add value to leather goods contributing to increased incomes for producers and investors.

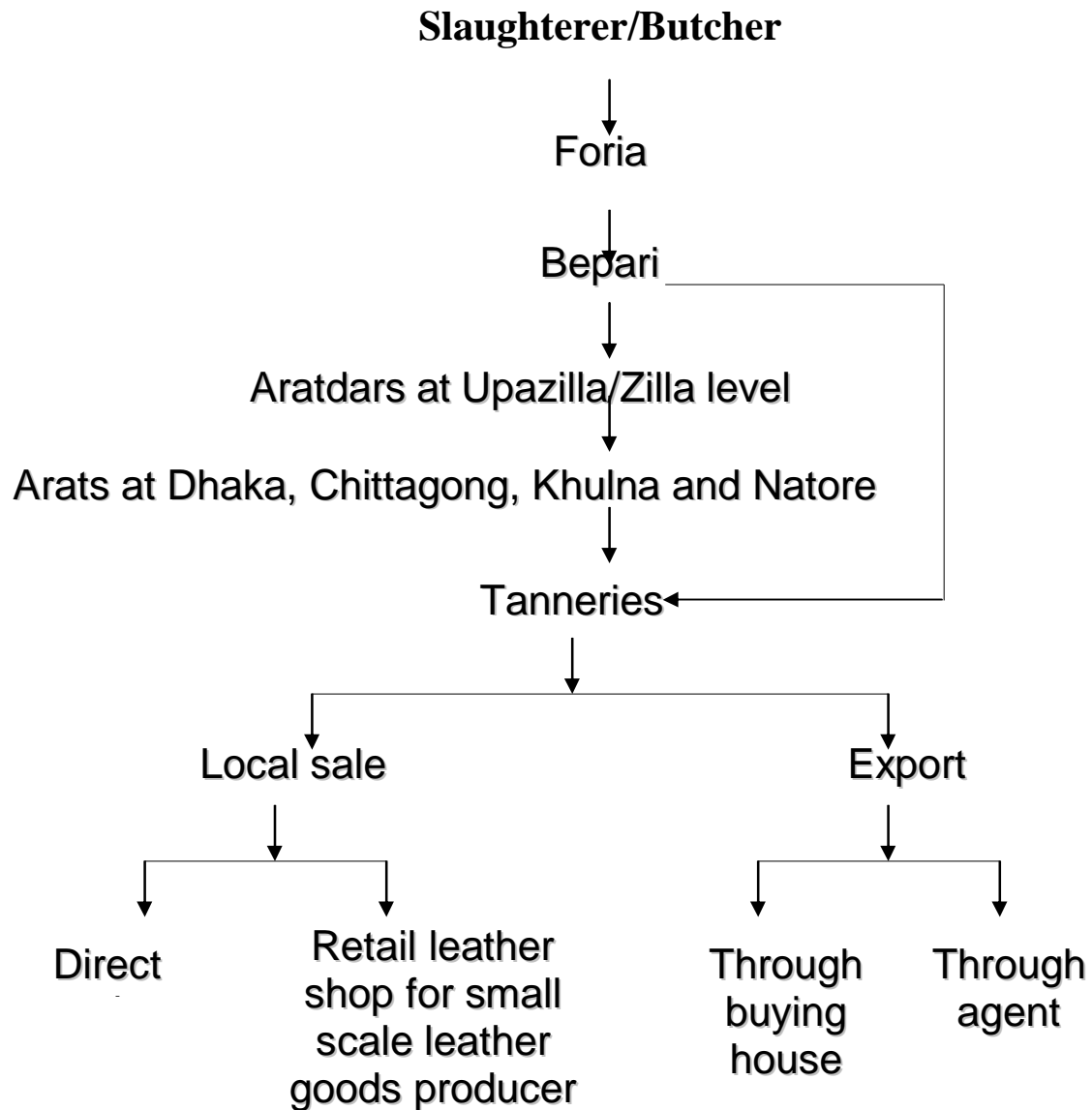


Figure 1. Collection route of hides and skins

B. Main Constraints

8. There are technical, infrastructural, finance and marketing constraints. Among the technical constraints, the major ones are poor flaying, late and improper method of curing, poor health and disease management, poor breed quality, cattle age and poor nutrition. Improper care of animals makes them susceptible to different kinds of diseases. There are some diseases, which leave everlasting damage to the skin. Eczema, pox, ringworm, mange, dermatitis, wart, tumor etc. cause permanent damage to the skins.

9. Infrastructural constraints include lack of mechanized slaughter house and proper storage facilities. About 8-10% slaughtering takes place in semi-mechanized houses at district level under the supervision of local authorities. Rest of the slaughtering is done by inexperienced and unskilled butchers or public, resulting in flay cuts, scratch marks, loss of area and irregular shape of hides and skins.

10. Considerable damage to hides and skins occurs due to lack of proper storage facilities. The storage facilities available in the markets are inadequate and of primitive nature. Most of the Beparis do not have storage facilities of their own. They store their goods in the premises of other merchants (Aratdars), which involves additional costs. In Barisal Sadar, it was found that, the Beparis had no specific go-downs and they stored their goods in a room of their dwelling houses.

11. Financing is a major problem. The intermediaries, particularly the primary market intermediaries like farias and beparis suffer much due to lack of adequate working capital, because most of them are subsistence trader. They do not get banking facilities and have no other source of capital; some of them have to depend on credit supports extended by their friends and relatives. Late payment by the higher intermediaries is another problem. Shortage of capital reduces the purchasing capacity of the lower intermediaries and consequently, a large quantity of hides and skins are pilfered in the neighboring country, especially during the Eidul-Azha.

12. The primary sellers of hides and skins do not get appropriate price, especially in the Muslim festival 'Eid-UI-Azha', when a large quantity of hides and skins are produced. These hides are not properly flayed and preserved due to low price and improper care by the people.

13. Transporting hides and skins from one place to another creates marketing problem due to high rate of transport charges. Inadequate transport like trucks and railway wagons is a bottleneck in the marketing channel. The ultimate transportation of the crust and finished leather and leather goods for foreign buyers is made by ships and planes, which are not always available. This affects export of hides and skins.

C. Policy Issues

Technical issues

- Improving slaughtering and flaying
- Improving curing and storing
- Improving disease and health management

Quality control and certification

- Graders process <10% of peri-urban product
- Little to no grading elsewhere
- Price erosion due to low feedback on technique used

Pricing and marketing

- Strong role of middlemen
- Information asymmetry
- Hides exported, not finished products = loss of revenue

D. Review of current policy

14. A number of positive public policies were adopted during the Third and the Fourth Five Year Plan. During the Third Five Year Plan, emphasis was given to improve the quality of raw materials and processing technology through improved slaughtering, flaying and curing procedures and providing incentives through marketing, quality grading and price policy for hides and skins. Emphasis was given on improvements in quantity and quality of Black Bengal goats and indigenous sheep to be pursued through selective breeding programs, and expanded veterinary services. None of these policies was pursued. Government imposed a ban on exporting wet-blue leather for getting increased benefit of value addition. This has worked very well. Again, in the Fifth Five Year Plan, Government planned to impose another ban on exporting crushed leather with effect from July 2001 for value addition but that did not come into effect till now.

E. Recommendations

1. Establishment of mechanized slaughterhouse, with Static Flaying Frame in all municipal areas and strict enforcement of the Slaughter Act.
2. Initiate awareness campaign and training program for butchers, Farias, Beparis and Aratdars to impart basic knowledge of flaying, curing and storing.
3. Ensure quality control and certification of hides and skins by an appropriate body, if necessary through promulgation of an Act.
4. Strengthen animal nutrition and management program and expand veterinary services of DLS for preventive measures against diseases, and of private sector for clinical treatments.
5. Encourage and support private sector to establish small to medium scale industries to utilize tannery byproducts (blood, bones, hoofs, ruminal contents, intestines, stomachs, hairs, bile liquid, etc) for producing high quality animal feeds.
6. Establish a Working Group to prepare a comprehensive pricing and marketing policy for hides and skins.

F. Proposed project

Project 1. Training of Butchers, Farias, Beparis and Aratdars

Project 2. A Pilot Project for Improving Animal Nutrition and Management

Project 3. Establishment of a Feed Manufacturing Plant from byproducts

G. Action Plan

Project Title	Duration	Estimated cost	Actions	Responsibility
1. Training of Butchers, Farias, Beparis and Aratdars	5 years	US 1.00 million	<ol style="list-style-type: none"> 1. Determine the mode of training 2. Develop detailed training programs. 3. Determine resource requirements 4. Develop monitoring and evaluation systems 	MOC/DLS/MOFL
2. A Pilot Project for Improving Animal Nutrition and Management	5 years	US\$ 1.5 million	<ol style="list-style-type: none"> 1. Identify a suitable project area 2. Determine resource requirements 3. Develop programs for implementation 	DLS/MOFL
3. Establishment of a Feed Manufacturing Plant from Byproducts	10 years	To be determined after the feasibility study	<ol style="list-style-type: none"> 1. Conduct a feasibility study 2. Determine the nature of joint venture 3. Identify a private partner 4. Enter into an agreement with the partner 5. Formulate detailed proposals 	Joint venture DLS/MOFL

CHAPTER 9

Marketing of Livestock Products

A. Background/overview

1. There are a wide varieties of livestock products of which milk, meat, eggs, hides and skins are more important. Their processed products, especially of milk are powder milk, butter, ice-cream and gee etc. The existing marketing systems of these products are not similar and their nature of problems varies depending on the type of product, intensity and extensity of productions, markets served (domestic and international) and the marketing practices followed. In Bangladesh, both the traditional and the commercial marketing systems are in existence and they operate side by side. The traditional marketing is more prominent in live cattle and small ruminants where commercial farms are almost totally absent. The private sector is not participating considering it less profitable and risky under the existing price environment.

2. The predominance of traditional marketing in milk is due to scattered rearing of cows throughout the country and their small marketed surplus. Goalas as their inherited occupations have been continuing with it and rendering useful services to rural community. Their efficiency in marketing is not high due to inadequate rural road net work. Goalas sometimes work as supplying agents to the private milk firms such as Arong, AFTAB, Tulip etc. They of course, operate in the less accessible areas where the firms cannot move with their refrigerated vans having capacity of 3000 litres. The firms need assured supply of its full load which is not possible outside the milk pocket areas of the country. This suggests that to encourage the private sector participation milk production at household level of dairying should be raised fast. This is possible through rearing of cross-bred cows under improved management where state supports may be necessary, the issue needs be carefully examined.

3. In this context, it is relevant to report that in the early 90s the government highly subsidized cattle purchases by rural farm households against its program of fast expansion of milk production in the country. Initially it was claimed to be successful but later with the faster rise of feed prices than that of milk and the scarcity of green grasses dairying has overtime become a losing concern and many farms were closed down and this was happening more among the marginal land owners which understandably made many households defaulters in credit repayment.

4. In case of poultry, Deshi (local) birds are marketed traditionally by piece rate depending on the size. Its producing areas are widely scattered throughout the country and its marketed surplus is concentrated in the Rajshahi and the Barisal Divisions. The small holder poultry farmers market them in the primary markets through higgling with petty traders (Farias). They cannot bargain with them successfully as they have little retaining capacity. To give them benefits and alleviate poverty special marketing system need to be developed where institutional reforms may be required. Commercial marketings have already been developed with the expansion of commercial broiler and layer farms. These farmers being established in the more accessible locations, little problems are faced in their marketing.

5. The serious limitation to the present policy study is the lack of relevant statistics either with the BBS or the DLS. Thus, the facts and figures used here are just estimates and are definitely subject to criticisms and refinements. But the overall situations described relating to country's productions and marketing and the changes taken place overtime are believed correct and can lead to right policy formulations and decisions.

B. Main Constraints

Milk and milk products

1. There is no systematic marketing network for milk and milk products. Farmers sell milk either in the local market or to goallas. Commercial marketing was started by Milk Vita in 1990. They have established milk processing plants in different places to collect milk from the members of the cooperatives. Milk Vita is also processing ice cream, butter, ghee and condensed milk. BRAC and CLDDP project have recently started milk processing. Seven other private firms are also dealing with pasteurized milk. These enterprises do not cover the whole country. Majority of the small scale dairy farmers are not getting fair price of their product due to lack of marketing facilities. They sell their milk in local markets at Tk. 8-12 per litre, whereas in cities milk is sold at Tk. 25-30 per litre.

2. Goala milk prices in Dhaka are around Tk.25 per litre against the purchased price of Tk.15 at farm gate which, of course, varies depending on the seasons and the local demand. Many milk producers are highly indebted to Goalas who pay advances (Dadan) to the producers for an assured supply of milk. Low prices and the price fluctuations are found to be an important constraint to increased production and higher income of milk producers. Farmers understandably are not aware of current milk price information and also do not know how to make use of such information for marketed surplus of this highly perishable product. Furthermore, milk production has become costlier with the increase in feed prices (wheat and rice bran) and the improved management needed for raising cross-bred cows.

Marketing of Poultry and eggs

3. Marketing chains and channels are long for local or Deshi birds as they are procured from remote places. Local traders known as Farias buy them from the rural households and the local markets, and sell to the outside traders, called Beparis who carry them to different city and town markets, where they transact through commission agents, commonly termed as Aratdars. From these Beparis retailers buy and carry them to their shops. Beparis use bamboo-made cages of 150-175 birds for transportation by bus. Costs of marketing are high and price fluctuations are prominent, which is caused mainly by transport problem and natural hazard. The main constraints are related to price instability and inadequate access to bank credit.

4. Broilers represent roughly half of all birds marketed, including commercial layers' meat. Broilers are usually transported from farms by pick-ups either owned or rented by poultry Beparis/Paikars engaged in wholesaling. The Beparis/Paikars buy mainly in cash from broiler farms generally through agents, locally called Dalals and sell them immediately to retailers often from the same carrier pick-ups, on credit extended for one or two days. They also buy directly from the farms who have taken Dadan (loan provided as security for assured supply) and sell to the retailers. Sales prices are largely determined by Beparis depending on day-to-day supply and demand. Fluctuation in farm gate prices is reportedly high.

5. Egg prices experience highly seasonal price fluctuations. Information available for the year 2004 reveals a price range of Tk240– 350 for 100 eggs. Price falls generally occur during February to May with the abundant supplies of fish at that time. The highest prices are found to prevail in October while the lowest occur in April (Sabur and Rahman, 2004). Such ups and downs are mainly due to peoples' consumption patterns relative to availability of fish. The Aratdars' Associations seems to have a strong influence on pricing, especially noticed in the Tejgaon Egg Market of Dhaka city where the committee decides every day's wholesale prices in the evening, based on supply and demand situations. Understandably, the egg marketing in Dhaka city is functioning under an oligopolistic system. This is somewhat clear from the credit supports extended by the Aratdars to the farms who are thus obliged to sell through them for regular repayment of loans. Waste in the marketing of deshi eggs is high as the time from

collection to market is long and the transportation is traditional. Thus, spoilage and broken eggs constitute a common problem.

Marketing of live animals and beef

6. In cattle marketing, problems include inter-market transportation of cattle, lack of adequate space within markets, lack of shelter for animals, and little or no arrangements for feeding. Cattle are generally slaughtered by the roadside of the towns. Although slaughter houses are available in the city, none of them is in use due to inadequate facilities. Beef sellers (butchers) need a consent certificate seal costing Tk15 per cattle from the Dhaka Municipal Corporation. They do not however, certify the quality of meat as there are no such standard criteria to be followed.

7. An important constraint to long-term development of the beef industry in the country is its relatively depressed price, caused by informal imports of cattle from India without quarantine checks. So far, no quarantine Act is in effect in the country despite serious public concern. According to cattle traders the domestic beef industry, if established now, cannot survive as the present cost of production is high.

8. Goat markets are relatively poorly developed and the inter-district linkages seem to be weak. Few beparis deal with marketing of goats, but their working capital is small. They buy goats from nearby primary markets and transport them to urban markets by hired pick-ups or small trucks. These Beparis sell live goats and sheep to retailers (butchers) both for cash and credit. Their sales to hotels are transacted mainly on credit (40%). Beparis and retailers in town markets face serious space constraints and thus at times use roadsides creating traffic problems.

9. Farm gate prices of live goats are settled through bargaining and the transactions are done mainly in cash. As farmers are little aware of current price information, bargaining is done on the basis of previous prices. The most vulnerable time for producers is the time of hurriedly called strikes or hartals when they are compelled to sell at the dictated price by Beparies. According to Monayem et al. (2004), strong price fluctuations occur in January and April in Mymensingh and in October and March in Sylhet, indicating segmented markets for small ruminants. Over-all, goat prices remain high in the winter and comes down in monsoon in the low lying areas due to flooding, when the farmers are compelled to dispose them off.

C. Policy Issues

- Scattered production and inadequate number of marketing institutions
- Imperfect markets
- Poor bargaining power of farmers
- Price instability and lack of market information
- Inadequate infrastructural facilities
- Inefficiency in farming

D. Review of current policy

10. The livestock policy formulated in 1992 had the following main policy objectives. But this policy has not been formally approved and implemented.

- i) Attainment of self- sufficiency in milk, meat and eggs within a short time
- ii) Poverty alleviation through creation of self employment for the landless and the marginal land owners
- iii) Increased supply of animal draft power for different apicultural works

- iv) Speedy reduction of import of milk powder by increasing production of milk
- v) Extend support to the private sector for large-scale export of broiler meat, mutton etc
- vi) Improve marketing system to ensure fair price to producers etc;

11. The Fourth Plan (1990-95) recommended ten strategies to fulfill the national objectives of increased supply of livestock products and poverty alleviation of them the top five were:

- i) Improved livestock husbandry with genetic upgrading;
- ii) Increased animal health services with special attention to the treatment of infectious diseases and parasitic infestations;
- iii) Emphasis paid to non-ruminants having better feed conversions and fewer vocational constraints;
- iv) Emphasized poultry husbandry towards poverty alleviation; and
- v) Increased fodder supply.

12. All the above five are related to faster increase in production through provision of technical services and improvement in production efficiencies. Among the remaining five, the eighth and the ninth are about marketing with particular reference to pricing of inputs and outputs. The former suggests for adequate policy supports e.g. price incentives and development of marketing facilities, strengthening extension systems etc. The latter plans for proper review of import policy for livestock products. Both these policies are very much relevant as incentive price levels can encourage efficient use of inputs, improved management and consequently aggressive private participation. It has also recommended for appropriate price of livestock products especially of milk keeping in view its cost of production and the international price of milk powder. These two strategies do not mention anything about prices for meat and poultry products; meaning that they are left to the forces of market supply and demand although their markets are not competitive enough to ensure fair price to growers. As far as the remedies are concerned, they suggest for price information service and introduction of purchasing programs for milk, eggs and poultry meat.

13. Critical examinations of the details of the Fifth Plan (1997-2002) indicate some changes in the priority objectives, although the strategies enlisted in the Fourth Plan kept almost unchanged in the new plan. The two main objectives enlisted in the Fifth Plan document are to:

- i) Increase people's participation through development of entrepreneur groups and
- ii) Intensify adoptive research and dissemination of new technologies.

The Fifth Plan instead of referring to any definite policy suggestions simply mentions of eleven development programs inclusive of the improvement of marketing facilities and discouragement of import of milk powder. With respect to marketing of livestock products the document emphasizes for improvement of the marketing channels to ensure quality and equitable distribution of benefits at different stages of production process. However, interventions were limited to improve the existing market structure and its poor functions despite recognition of imperfect market competition in livestock products, and little price incentives were given to dairy farmers.

13. Some ad hoc policy interventions were made in terms of provide tax holiday to private sector livestock entrepreneurs and waving taxes and tariff on imported inputs. Poultry industry is also given 20% rebate on electric bills. The Government has imposed ban on the import of table and hatching eggs. Dairy processing and feed mills have been recognized as agro-based industry by the Bangladesh Bank. A number of livestock Act is under process of approval. Bangladesh Animal Diseases Act, 2005 and Bangladesh Animal and Animal Product Quarantine Act, 2005 have been promulgated and waiting for enforcement.

E. Recommendations

1. Collective marketing by community organization
2. Price incentives and improved cattle farming
3. Increasing credit support and enhancing access to credit
4. Price monitoring and dissemination
5. Infrastructure development
6. Enhancing private participation

F. Proposed project

Project 1. Construction/renovation of wholesale markets with all infrastructural facilities for livestock in cities and main towns

Project 2. Construction of slaughter houses with necessary infrastructural facilities inclusive of cooling chambers for meat and also for hides and skins.

Project 3. Study on current livestock situation inclusive of commercial farms by agro-ecological regions of the country;

Project 4. Review the trade and tariff policies vis-à-vis WTO rules and regulations toward the development of dairy industries in Bangladesh.

G. Acton Plan

Name of the Project	Duration	Estimated Costs (US\$)	Actions	Implementation Agency/ organization
1. Review Trade and Tariff Policies Vis-à-vis the WTO Rules and Regulations	2 years	0.05 million	1. Preparation of a concept paper and review of all relevant livestock policies at home and abroad with special reference to import and export rules and regulations; 2. Studying price policies of exporting countries; 3. Studying the WTO rules which are in use and those being debated and under preparation. 4. Preparation of comprehensive report.	Ministry of Fisheries and Livestock
2. Study the current livestock situation	3 years	0.10 million	1. Designing of survey methodology, recruitment of Field Officers and their training; 2. Collection of data and editing; 3. Analyses and report writing.	Ministry of Fisheries and Livestock and the Department of Livestock Services
3. Construction of Wholesale Markets in selected cities and towns	4 years	1.0 million	1. Selection of top ten wholesale markets from 100 short-listed cattle markets; 2. Undertaking of feasibility study relating to availability of suitable land, estimate costs of land and constructions and expected amount of revenues; 3. Designing and implementation of the cattle sheds; 4. Evaluation of the impact on farm gate prices and market efficiency	Department of Livestock Services of the Ministry
4. Establishment of Mechanized Slaughter Houses in Dhaka and Chittagong	5 years	1.5 million	1. Preparation of a project proposal initially for Dhaka and Chittagong; 2. Searching of suitable private land and/or acquiring of Government, if available; 3. Construction and procure procurement of equipment and leasing out to the private sector.	The City Corporations of Dhaka and Chittagong, Ministry of Local Government, Rural Development and Cooperatives.

CHAPTER 10

International Trade, Livestock Insurance and Credit

I. International trade

A. Background/overview

1. One of the major agreements of the World Trade Organization's meeting at the Uruguay Round was the Agreement on Agriculture (AOA), to which Bangladesh is signatory as member country. The AOA provides a framework for the long term reforms of agricultural trade and domestic policies to move towards the market orientation of agricultural trade. The obligations and disciplines incorporated in the AOA relate to four aspects, namely: i) agreement on market access; ii) agreement on domestic support; iii) agreement on export competition/subsidy; and iv) agreement on sanitary and phyto-sanitary (SPS) measures signed in 1994.

2. The AOA provides detailed rules for member countries regarding the use of tariff barriers, domestic support, acceptable and unacceptable subsidization of agriculture, and market access commitments including allowable quantitative restrictions on imports. Many of these terms are favorable for Bangladesh, a developing country with weak balance of payments relative to other developed countries. Almost all developed countries provide support to their farmers ranging from as high as 76% in case of Japan, 52% in case of EC and 43% in case of USA (Paswan, 2003). Under the Green Box measures of WTO there is provision of subsidy of 10% of the value of agricultural produce. The amount of subsidy provided by Bangladesh government in agriculture falls below 2% of the agricultural GDP which is far below the minimum ceiling allowed in the WTO framework. Thus, Bangladesh not only can continue with the present subsidy but also can enhance the level of subsidy. Further, the reduction of subsidy by developed countries may lead to improvement in world prices of agricultural products which may have stimulating effects on agricultural exports of developing countries like Bangladesh. Reduction of tariffs and subsidies, particularly in Japan, EU, and US will improve export possibilities for livestock products from Bangladesh. However, this measure alone will not open markets.

3. Bangladesh has work to do in order to meet the recommended safety and quality standards of livestock products consistent with the SPS guidelines, as regulated by the World Animal Health Organization (OIE) in Paris. Not only the food processing and agri-production standards below acceptable levels, but also the incidence of certain trans-boundary animal diseases (TADs, such as foot and mouth disease) prevents declaration of freedom from these diseases, effectively locking Bangladesh out of many markets for livestock products. As the problem of TADs is being addressed on a larger scale, regional initiatives are becoming more important and Bangladesh will see the opportunity to enter into regional agreements to control TADs. However, this will require significant change in the current situation of veterinary services (particularly diagnostic services) and veterinary public health.

4. Under the provision of Special and Differential Treatment (SDT), developing countries are exempted from the commitment of reduction of export subsidies. Subsidies can be provided in the form of (i) exemption of export profits from the income tax, and (ii) subsidies on the costs of freight on export shipments of certain products like fruits, vegetable, and agricultural products. This presents an opportunity for Bangladesh to enhance the export infrastructure for specific livestock products such as leather goods and highly processed meat products, including halal meats.

B. Main Constraints

5. Lack of adequate infrastructure is one of the important bottlenecks to the expansion of trade and investment in Bangladesh. Technical assistance is required to assist in the infrastructural development. Some of the important infrastructures required for development of livestock production and trade in the country includes roads, highways, storage and processing facilities, marketing network, and flow of information. Although the country has abundant cheap labour, there is shortage of skill labour in the production and marketing of livestock and livestock products. Low productivity, lack of appropriate technology, inadequate veterinary services, inadequate credit support and investment, and lack of insurance program are some of the major constraints in trading livestock products.

6. Most of the export oriented enterprises in Bangladesh are small and medium size, with limited capacity to undertake market research, to make investment in technology adoption, acquisition or access, collect, store, process and disseminate trade information. All these aspects are considered essential conditions for effective market access. Lack of capacity to ensure quality and standardization is particularly important in export sector like shrimp, meat, leather, etc., where stringent demands of importers (e.g. in the EC) in terms of technological adequacy, quality control and hygiene requirements can deter expansion of production and jeopardize market access. Other obstacles include lack of good design, high quality, attractive packaging, and up-to-date information relating to consumer preferences in export markets. Many enterprises in Bangladesh have neither the in-house capacity to gather the necessary trade information nor the networking facility to access such information. Enterprises in Bangladesh lack in-house capacity for producing products of high quality that would give the buyers good value for money. The capacity of trade support institutions in Bangladesh is limited due to lack of resources and expertise to deal with the emerging problems.

7. Market access constraints are becoming increasingly complex and diversified. The market access problems, faced by Bangladesh in international trade relates to (i) non-tariff and para-tariff barriers; (ii) stringent quality and standard requirements; (iii) stringent rules of origin requirement; and (iv) strict labour and environmental standards.

8. Membership in the WTO entails compliance with the rules, provisions and obligations contained in the agreements. The WTO Arrangements are not only complex but demanding, in terms of their intellectual rigour as well as its human capacity development and institution building requirements for Bangladesh. Bangladesh has scarcity of technical assistance for institutional development as well as human resource development for trade policy administration and trade facilitation. Liberalization commitments, tariff reductions, removal of QRs by member countries have increased access to export markets both for livestock and livestock products. In order to derive the full benefits of such liberalizations, Bangladesh has to develop new export products, satisfy product standard requirement of importing countries and obtain market information of different markets.

9. Regarding fulfillment of Sanitary and Phytosanitary Services (SPS), Bangladesh has some key problems (FAO, 2000, IFDC, 1999 and Hossain, 2000, and WOA, 2003): (i) inadequate veterinary services; (ii) lack of skilled human resources; (iii) lack of diagnostic facilities; (iv) lack of financial support; (v) lack of disease surveillance and monitoring of animal health; (vi) lack of updated food legislation; and (vii) lack of improved national food export inspection and certification program.

C. Policy Issues

10. Technical support

- WTO Arrangements are complex and demanding. Technical assistance is needed in addressing the WTO standards.

- Assessment of trade related technical assistance needs of the Ministry of Commerce, Ministry of Fisheries and Livestock, Department of Livestock Services, Tariff Commission and Export Promotion Bureau (EPB).
- Assistance in setting standards and quality control facilities, particularly for processed meats, hides and skins and leather as well as in setting information networking system.
- Infrastructure for supporting the terms of the SPS agreement is weak, particularly with regard to provision of veterinary services, diagnostic facilities, food quality and food safety regulation and enforcement, and certification programs. Assistance is needed for setting the sanitary and phytosanitary standards.

11. *Institutional issues*

- Training of manpower of MOFL, MC, DLS, Tariff Commission (TC), and Export promotion Bureau (EPB) on sanitary and phytosanitary standards.
- Credit support from the public and private sector is inadequate, particularly with regards to opportunities for SME investment and insurance programs.
- Assistance in establishing information network for effective market access, because the small and medium enterprises have limited or no capacity to undertake market research, including acquisition, processing, and dissemination of trade information.

D. Review of current policy

12. Custom tariff is the main instrument of Bangladesh trade policy, directly affecting livestock and product manufacturing. Judging by the effective rate of protection (ERPs), the average level of tariff protection has declined by nearly two thirds during 1992-93 to 1999-2000; the average ERP dropped from 75.7% in 1992-93 to 26.8% in 1999-2000 (WTO, 2000). In case of livestock the ERP was reduced from 74.3% in 1992-93 to 24.8% in 1999-2000. In case of livestock trade, Bangladesh imports dairy products, livestock feed ingredients, vaccines, veterinary drugs, breeding stock and beef cattle. It exports leather and leather goods. The dispersion in ERP across 40 agricultural and manufacturing has also dropped, which means that the potential distorting effects of the tariff on domestic resource allocation have declined (WTO, 2000). Manufactured products are considerably more protected than agricultural products. EPRs for manufacturing and agriculture were 30% and 23.5% respectively in 1998-99. Rice, wheat, coarse grain receive very little effective protection. By contrast, the export oriented textiles, garments, processed food and tobacco products are accorded relatively high levels of effective protection.

13. Bangladesh Bank provides loans at concessional interest rates for livestock supporting industries like feed mill, hatchery, and agro- processing industries through NCB, BKB and RAKUB. Subsidy is also provided for veterinary services through DLS. Now-a-days there is also subsidy on electricity use for agro-processing industries. Administrative pricing is also fixed by the Government for certain goods and services that includes petroleum products, fertilizers, pharmaceuticals, utilities, and transport (MOF, 1998b).

E. Recommendations

1. *Technical support:*

- Set up a focal point in the relevant Ministry to carry out work related to WTO Agreements and to ensure implementation of notification and other WTO obligations
- Strengthen the MOC to enhance capacity to handle increasing volume of WTO work
- Train officials of MOFL, MOC, DLS, and various livestock related industries to enable them to fully understand WTO Agreements and deal with them effectively

- Assess trade related technical assistance needs of the Ministry of Commerce, MOFL, DLS, Tariff Commission and Export Promotion Bureau (EPB)
- Assign DLS responsibility for quality control of imports and exports of livestock related products. This would require capacity development

2. ***Institutional support:***

- Develop capacity to address the SPS agreement by strengthening DLS in general through institutional reform (see section on veterinary services)
- Support credit reform as outlined earlier in this section
- Establish a farmer's information network, with both public support (data gathering, analysis, availability) and private support (training, further processing of trade related information)
- Establish internet communication system (ICT) and regular broadcasting of trade related information and forecasting of prices of livestock products at local and regional level

II. Livestock insurance

A. Background/overview

1. Livestock production is subject to the risk of disease, accident, and death. Farmers face consequent losses of investment and future income, and are incapable of mitigating such risk through institutional means due to insufficient financial resources. The result is often serious decline in farm income and consequent failure on the part of the poor farmers to maintain their livelihoods. Following failure, they borrow money from the village money lenders at high interest rate to restock. This creates further problems and instability to the farming community.

2. Livestock insurance provides farmers with a means of offsetting the burden of financial losses. Insurers protect farmers and his agribusiness from the adverse effects of unfavourable events such as death of livestock due to disease and accident. Livestock insurance can: i) provide protection against loss of livestock from accident or disease, stabilizing income; ii) raise credit worthiness; iii) contribute to reduction of the incidence of animal death and accident by requiring certification of a minimum standard of animal husbandry practices; and iv) encourage development of cattle breeding and dairy industries.

3. The insurance sector in Bangladesh now consists of both public and private companies. The sector has shown rapid growth in terms of institutional set up over the last two and a half decades (Azad, 2001). Sadharan Bima Corporation (SBC), a public sector general insurance company under the Ministry of Commerce, first introduced the livestock insurance in 1980. This Unit was an adjunct to Agricultural Insurance Wing of SBC. Although its crop insurance program was discontinued in 1995, the livestock insurance is still continued with a very slow growth; only 7,567 dairy cows were insured during 1981 to 2003. The cattle insurance of SBC is voluntary but is allowed only to projects financed by Bangladesh Krishi Bank (BKB) and other nationalized Commercial Banks. The period of insurance is for one year and the insurance scheme is operated by a separate Department at the Head office of SBC.

4. Livestock insurance premiums for the last 25 years have been TK 5.67 million with claims settled of Tk 3.2 million. The loss ratio, which is the ratio of premium earned to claims settled, thus was 1:0.56. Likewise, loss:cost ratio, which is the ratio of sum insured to claims settled and a measure for premium calculation, was 1:0.02. Both these indicators are positive pointers to the potential profitability of livestock insurance, in spite having its poor management in SBC.

5. Bangladesh can learn from experience of other countries like Egypt, Morocco, Tunisia, Iraq, Cyprus and India, where insurance scheme vary in their level of development and operation. In some countries, insurance is voluntary and in some countries, it is semi public. Cyprus is cited to have a successful agricultural insurance system, which is run by a semi-public Agricultural Insurance Organization. Livestock insurance received greater importance in India. Livestock insurance in India was standardized in 1974-1975, with the idea of launching it on a large scale. Initially, livestock insurance was transacted in India on a restricted scale for the benefits of co-operatives society members who owned cattle. With the humble beginning in 1974, covering 30,000 cattle, Indian General Insurance Companies covered 20 million livestock in 1988-89, which was 5% of India's total number of livestock population of 425 million and the total amount of premium received was Rupees 1000 million. At the beginning, livestock insurance in India covered dairy cattle - Cows and buffaloes, bulls/bullocks and young female calves/heifers. Gradually this was extended to other animals. India launched large dairy programs to augment the milk supply, which ultimately resulted in up-scaling the standard of living, poverty alleviation and improving health of its people. Indian Government pumped thousands of millions of Rupees through its banks, insurance and other financial institutions for developing the livestock sector.

B. Main Constraints.

6. Out of 62 insurance companies in Bangladesh, 60 are private companies and none is involved in livestock insurance. Only state owned insurance company, SBC, is providing livestock insurance in Bangladesh. SBC covered only 7,567 animals during the last 25 years against a total cattle population of about 24 million, indicating negligible insurance coverage for livestock. Since inception in 1985, SBC is dealing with the same livestock insurance program. No modification of the program has been made to coop with the changing scenario, particularly of poultry and dairy industry in the country. In stead, they have drastically reduced the manpower and suspended the agricultural insurance programme in 1995, which seriously impeded operation of livestock insurance program (Miah. 2005).

8. Private sector companies neither have the skills nor funds to initiate livestock insurance. There is also no collaborative arrangement between the insurance companies and the public sector organizations (BB, DLS, SBC, GOB) to assist the companies in setting up the insurance scheme. There is no suitable model for setting the standard procedures of insurance policy, charging of premium and settlement of claims that can help restart the insurance program, involving SBC and the interested private sector insurance company.

10. Some level of subsidy on premium or concessional rate for the smallholder enterprises is necessary, at least, at the initial period. In India, the poor beneficiaries are enjoying such concessional premium rate which has been fixed at 2.25% as against the market rates ranging from 4% to 6%. Of the 2.25%, poor beneficiaries pay only 1%, while the remaining 1.25% is borne by the scheme authority and financing bank. The secret behind the spectacular success in the dairy sector of India lies in the availability of low cost animal insurance matching with other development initiatives. During 1990-91, the number of animal insured was 18.8 million.

11. There is no donor support in the form of technical assistance and training program for the staff of the private sector insurer. As the private sector has no experience of operating livestock insurance program, initially they will need donor supported technical assistance and training for building their technical capacity.

12. There is no time series database on livestock mortality, disease incidence and productivity of livestock, which are necessary for developing sound livestock insurance program. Small scale livestock do not understand the implications and benefits of livestock insurance.

C. Policy Issues

- Institutional support from both public and private sector
- Government initiative and support for developing insurance scheme
- Database development

D. Review of current policy

13. In 1972, both life and general insurance companies were nationalized by the President Order No. 95 entitled “The Bangladesh Insurance (Nationalization) Order, 1972”. With the implementation of the order, 5 corporations were established to absorb, own and control the business of existing 75 inherited insurance companies. In 1973, the Government of Bangladesh decided to restructure the governance as well as the organizational set up of the insurance business in the country by establishing a Sadharan Bima Corporation (SBC) to take over the life insurance business, and for the dissolution of the Bangladesh Jatiya Bima Corporation. In view of the decision, the Insurance Corporations Act, 1973 was enacted by the then Parliament. Accordingly, the SBC and the Jiban Bima Corporation (JBC) came into existence in 1973.

14. As the only state-owned general insurance institutions, SBC exclusively dealt with 100% of all types of general insurance business and the JBC exclusively dealt with 100% of the life insurance business until 1984 and early 1985 respectively. The Government of Bangladesh allowed operation of insurance companies in the private sector through the Insurance (Amendment) Ordinance, 1984 and Insurance Corporations (Amendment) Ordinance, 1984. The primary objective was to improve the services of the insurance company and to ensure the spirit of competition for the benefit of the insuring community. By virtue of the insurance Corporation (Amendment) Act 1990, the government in the same year allowed private sector insurance companies to underwrite 50% of public business keeping the rest 50% in the hands of SBC. Through this Act, private insurance companies were also given option to re-insure 50% of their re-insurable business either with any local or foreign insurance companies. Accordingly, SBC distributes 50% of all public sector general insurance business to the private sector general insurance companies equally and thereby assist them financially. On the other hand, SBC underwrites private sector business on competitive basis with the companies operating in the private sector.

E. Recommendations

1. Promote institutional development of both public and private insurance companies
2. Develop standard procedures of insurance policy, charging of premium and settlement of claims
3. Establish Livestock Insurance Development Fund (LIDF) in Bangladesh Bank
4. Develop database on livestock mortality, disease incidence and productivity of livestock

III. Credit

A. Background/overview

1. The livestock revolution in developing countries including Bangladesh has rapidly increased demand for concentrate feeds, drugs, vaccines, and veterinary services. These trends will both continue and increase rapidly. Hinging on increased support of such inputs is provision of credit and credit support needed for the purchase of livestock and inputs.

2. Apart from smallholders, there is also increased demand for credit for establishing commercial livestock farms, feed mills, hatcheries, agro-veterinary farms, processing of livestock products and its marketing in Bangladesh. Already there is considerable horizontal and vertical integration in the livestock industries of the country. Expansion of supporting input and output industries, often funded on credit, are very important to developing the sub-sector.

3. Financing of agricultural and other rural economic activities have not attracted adequate spontaneous interest of banks and institutional lenders in Bangladesh (BB, 2003). Although directed lending was abolished in the early 1990s, annual program-based monitoring and occasional refinance support from the Bangladesh Bank has been necessary to ensure necessary credit flow to this important economic sector producing a quarter of the GDP and employing more than three fourths of the total labour force.

4. The total amount of agricultural and rural credit disbursement of state-owned lending institutions (NCBs, BKB, RAKUB, BRDB, and BSBL) was TK 32.78 billion in 2003 of which the highest disbursement was in crops (51.8%), while it was only 4.5% in livestock (BB, 2003). In 2003, disbursement of livestock credit was 1.48 billion; the trend sharply increased over the last three years (Table 10).

Table 10. Agricultural and rural credit disbursement of state-owned Commercial Banks and Institutes (2001-03)

(in billion Taka)			
Types of credit	2001	2002	2003
Crops (other than tea)	13.62	12.65	16.97
Irrigation equipment	0.04	0.01	0.04
Livestock	0.79	1.09	1.48
Marketing of agricultural products	3.54	3.81	3.05
Fisheries	0.81	0.70	0.59
Other agricultural activities	7.09	6.60	2.94
Poverty alleviation	4.31	4.68	7.71
Total disbursement	30.20	29.55	32.78

Source: BB, 2003

5. Apart from the state-owned lending institutes there are also 700 NGO Micro Finance Institutes (NGO-MFIs), engaged in the distribution of micro credit for self employment and poverty alleviation. Around 20 national and 150 local NGOs are involved in livestock program activity (ADAB, 2000) operating in urban and rural areas. Under livestock program so far 34 NGOs have been involved in project implementation of ADB's SLDP-1, PLDP, SLDP-2 funded by IFAD and DANIDA in northern and Southern part of Bangladesh in collaboration with DLS (Islam, 2004). These NGOs are provided training, credit and livestock services to the smallholder poultry farmers and developed a very useful poultry model with the help of DLS for poverty alleviation. Grameen Matsha and Poshu Sampad Foundation is also implementing project called CLDDP. This NGO also provides training, livestock services and insurance, and distributes micro credit for livestock rearing. It has developed a community based dairy model.

6. The total coverage of microcredit programme (MCP) was 13 million households in 2002 of which 15% borrowers were borrowing from more than one MFI. The effective coverage was 11 million households by MCP, about 80% of them were below poverty line. Nearly 18% of the total micro credit amounting to Tk 60 billion, disbursed by the NGOs till June 2001, was given to the livestock sub-sector (CDF, 2001). These were used by the poor women mostly in rural areas. In addition, a variety of programs of different government agencies, e.g., Bangladesh Rural Development Board (BRDB) and other line Ministries/agencies provide micro credit. The important sources of microcredit are PKSF, local banks,

foreign donation, members' savings and service charge. Livestock micro credit have created good impact on income, employment and livelihood of the rural poor.

B. Main Constraints

- Size of livestock credit is small and inadequate in relation to actual requirement of the smallholders
- Collateral requirement problem of Commercial Banks reduces credit access of the smallholders
- Lack of close supervision in case of commercial bank loan
- Lack of training in case of commercial bank loan
- Lack of technical support in case of commercial bank loan
- High interest rate charged by NGOs for micro credit
- Risk from natural disaster like disease, livestock death and non-fulfillment of production target cause repayment problem
- Insufficient funds for the loan both in public and private sector

C. Policy Issues

- Increasing credit support at low interest rate and facilitating access to credit
- Linking credit with insurance to cover the risk from natural disaster and accident
- Reducing interest rate of micro credit

D. Recommendations

1. Establish farmers' Community Based Organization (CBO). As self-help group initiative it has proved to be a very useful approach for the distribution of micro-credit through small savings and this process can help to build rural organization. Establishment of linkages of CBOs with Commercial Banks, DLS, NGOs and insurance company can deliver Livestock Services, Credit and Insurance Packages to the door step of poor smallholder livestock farmers. Farmers CBOs can increase credit access of smallholders and solve the problem of collateral requirement.
2. The Government should establish a Livestock Credit Fund in the Bangladesh Bank for distribution of low interest credit to the small scale livestock farmers through CBOs.
3. Establish linkage of credit program with insurance program
4. Reform DLS to provide training, technical services, supervision and monitoring of incidences of animal death, quality control and enforcement of legislation

F. Proposed project

The proposed projects cover WTO issues, insurance and credit.

Project 1. Strengthening SBC through institutional reform and establishing effective linkages with the Bank, the Insurance Companies and DLS

Project 2. Strengthening credit access of the small and medium livestock enterprises

Project 3. Developing Sanitary and Phytosanitary Service (SPS) delivering capacity of DLS

Project 4. Developing ICT network through strengthening DAM and DLS

G. Action Plan

Project Title	Duration	Estimated cost	Actions	Responsibility
1. Strengthening SBC through institutional reform and establishing effective linkage with the Banks, Insurance Companies and DLS	5 years	US \$ 10 million	<ol style="list-style-type: none"> 1. Defining new mandate and functions relating to promotion of livestock insurance in both public and private sectors. 2. Designing new organizational structure based on new functions. 3. Designing improved management system, including MIS 4. Preparing a five-year project proposal 	MOC, MOFL, BB, BKB, RAKUB, NCBs, DLS and Private sector insurance companies
2. Strengthening credit access of the small and medium livestock enterprises	5 years	US \$200 million	<ol style="list-style-type: none"> 1. Defining new mandate and functions relating to strengthening credit access of the small and medium livestock enterprises. 2. Designing new organizational structure based on new functions. 3. Designing improved management system. 4. Preparing a five-year project proposal 	MOC, MOFL, BB, BKB, RAKUB, NCBs, DLS and NGOs
3. Developing Sanitary and Phytosanitary service delivering capacity of DLS to comply WTO agreement	5 years	US \$20 million	<ol style="list-style-type: none"> 1. Defining new mandate and functions relating to promotion of livestock insurance in both public and private sectors. 2. Designing new organizational structure based on new functions. 3. Designing improved management system, including MIS 4. Preparing a five-year project proposal 	MOC, MOFL, and DLS
4. Developing ICT network through strengthening DAM and DLS	5 years	US \$ 10 million	<ol style="list-style-type: none"> 5. Defining new mandate and functions relating to ICT network. 6. Designing new organizational structure based on new functions. 7. Designing improved management system, including MIS 8. Preparing a five-year project proposal 	MOA, MOFL, DAM, DLS

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