

VETERINARY INDUSTRY IN BANGLADESH: PRESENT STATUS AND FUTURE POTENTIALS

Biplab Kumar Sen¹

***Abstract:** Livestock resources constitute an integral part of agriculture– the mainstay of the country's economy. Livestock production is subject to the risk of disease, accident and death often causing decline in farm production ultimately leading to a threat to the country's food security system. Veterinary industry entails huge potentials for agri-sector to grow more by supplying health care products to the people of Bangladesh. Review of the existing literature explores that hardly any study was conducted on the veterinary industry of Bangladesh especially highlighting its economic aspects. The study is a modest attempt to bring this industry to the light of organized academic discussion and expose it to a broader view for policy makers to facilitate integrated agriculture policy. The study explores the present status of this industry, the constraints encountered in this industry and finally what potentials await thereof in the time to come. The study reveals that both local manufacturers and traders (mainly import based and foreign MNCs working in Bangladesh), feed manufacturers, hatchery & farm owners constitute this industry and annual turnover of this industry is about BDT thirty thousand crores of which medicine & feed additives/supplements market is more than BDT one thousand crores. Still the market is expected to be growing as with the rise in livestock and fisheries sector in this country. Major constraints and challenges have also been analyzed allowing investors, academics and policy makers to know the potentials of this industry in its true lights.*

***Keywords:** Livestock, Veterinary industry, Poultry.*

INTRODUCTION

Bangladesh is predominantly an agricultural country where agriculture sector plays a pivotal role in accelerating the economic growth. In order to ensure food security and to reduce poverty, the committed target is to achieve self-sufficiency in food through increased crops production, sustainable growth of agriculture sector and employment opportunity as envisaged in National Strategy for Accelerated Poverty Reduction (NSAPR), National Agricultural Policy (NAP) and Millennium Develop Goals (MDGs). With a view to developing the agriculture sector, the government has taken a number of steps. These include, among others, expansion of small irrigation facilities, enhancing the production of domestic food grains, production of improved quality and high yielding

¹ Group Product Manager, AgroVet Division, Square Pharmaceuticals Ltd. Dhaka, Bangladesh.

varieties of seeds and their preservation and distribution, development and expansion of the varieties of crops adaptable for the weather and environment of a particular region and producing crops suitable for a particular kind of land as well as proper use of fertilizer. In FY 2011-12, the food grains production was about 350.28 lac metric tons (MT) according to DAE estimation (Bangladesh economic review, 2012).

Livestock animals are the subsector of agriculture industry. In Bangladesh the industry generally combines with various animals like chicken, ducks, cattle, buffalo, goat and sheep and others. Livestock constitutes an integral part of the net economy of our country and it has the direct economic contribution on the total part of the GDP.

The contribution of agriculture sector in GDP stood at 20.01 percent in FY 2010-11(BBS, 2011-12). According to the provisional estimation of BBS, the overall contribution of the broad agriculture sector at constant price was 19.29 percent of GDP in FY 2011-12. Within the broad agriculture sector in FY 2010-11, the contribution of agriculture and forestry and fisheries were at 15.52 percent and 4.43 percent respectively while the contribution of the three sub-sectors namely crops and vegetables, livestock and forestry were 11.24 percent, 2.57 percent and 1.71 percent respectively. Though the direct contribution of agriculture sector has decreased slightly, its indirect contribution to the overall growth of GDP is significant. The growth of broad service sector, particularly the growth of wholesale and retail trade, hotel and restaurants, transport and communication sector was strongly supported by the agriculture sector. Besides, about 43.6 percent of the total labor forces of the country are engaged in agriculture sector (MES, 2009). In FY 2011-12, Bangladesh earned US\$ 282.86 million by exporting agricultural products which was 1.58 percent of total export earnings. In addition to the exports of main agricultural commodities such as, raw jute, jute goods, tea, frozen foods, the Government has taken steps to increase exports of non-traditional agricultural commodities (BBS, 2012).

Veterinary industry plays a critical role in the expansion of agriculture industry in our country. Veterinary resources necessarily encompass animal health care and welfare, quality production factors, and effective rearing to keep pace with expansion of entrepreneurship related to concerned industries. It plays an important role that ensures the agricultural production sphere. Veterinary industry directly contributes to enhance our total GDP by caring the livestock of our country. Proper caring ensures the continuous production of livestock through veterinary industry.

LITERATURE REVIEW

A brief review of related literature regarding veterinary industry and allied till now has been presented in this section.

Alam et al. (2013) have conducted a study on the indiscriminate use of antibiotics in poultry and its effect on public health due to the development of drug resistance and possible solutions to overcome this problem. Biswas et al. (2009) have done a descriptive study about the epidemiologic features of avian influenza caused by high and low pathogenic virus in chickens in Bangladesh, profiles of affected farms, outbreak management, origin and spread of data of the outbreaks, probable sources for virus dissemination. Chowdhury (2013) has done an extensive study on identifying tremendous opportunities that exist in poultry sector and highlighting the challenges to overcome the crisis and instability in the production, distribution and marketing of commercial broiler and eggs and also has offered some recommendations for policymakers towards the development of poultry sector in Bangladesh. Giasuddin et al. (2012) have conducted a study on identifying the common diseases and possible measures for remedies of diseases of dairy cattle in Bangladesh and probable risk and also have pointed out the necessity of having scientific knowledge to run business satisfactorily and economically. Habib and Raihan (2012) has carried out a study on the use of milk and dairy products and the necessity of safety of food for human health. Hasan et al. (2012) have conducted an analytical study about the knowledge, attitude and practice of Bangladesh poultry farmers concerning the use of antibiotics, chemicals etc. and its effect on public health. Hoque et al. (2010) have done an extensive study emphasizing rapid agricultural growth necessary for economic growth and food security by encouraging private sector investments for production of dairy, meat and poultry through enhancing competitive advantage of livestock industry in Bangladesh. Hossain et al. (2012) have conducted a study to evaluate the effects of Mannan oligo-saccharides (MOS) and *Saccharomyces cerevisiae* on the broiler ration for the yield and quality of broiler meat. The study resulted high yield and quality of meat which is safe for human consumptions. Hossain et al. (2010) has carried out a descriptive study about integrated farming with fishes, prawn, vegetables, fruits and rice round the year with or without whole family approaches ensuring food security and safety, generating multifarious economic activities, and income for mass people of Bangladesh. Hossain et al. (2012) have studied the use of antibiotic to prevent & treat diseases and increase production of food animals in Bangladesh emphasizing the impact of residual effect of antibiotic in Livestock meat. Islam et al. (2012) have done an extensive study to evaluate the use of *Nigella sativa* seed powder in poultry diet and to see its potential for large scale use as alternative to hazardous antibiotics and to produce cost effective and antibiotic free poultry feed for production of low cholesterol egg and safe meat. Kabir et al. (2012) have undergone a study about serious food-borne illness due to poor

hygienic measures, indiscriminate use of chemical substances as adulterants and malpractices in production of foods and necessity of building awareness for improving safety and quality of foods of animal origin in Bangladesh. Khan et al. (2012) have conducted a study on finding out the major constraints of low milk production in Bangladesh and probable solutions by applying several techniques to improve the situation. Khatun et al. (2012) have done a descriptive study on the current veterinary public health activities in Bangladesh concerning all areas of food production and safety, zoonosis control, environmental protection and animal welfare, its major constraints and future activity plan to ensure safe food production as well as protect environment and public health. Prodhan et al. (2012) have studied about the role of veterinary services to eliminate or control of animal originated food risk sources and to ensure safe food in food chain of human consumption. Saifuddin et al. (2012) have carried out a study on the need of community based health care service for animals at the remote areas of Bangladesh and has portrayed its implication to ensure the sustainable quality health care service of livestock entrepreneurship. Sarder et al. (2012) have done a study on the current status of veterinary practices in Bangladesh and have recommended the necessity of trained personnel to maintain quality public health. Sarker et al. (2013) have carried out a study focusing on the present status of grains and their by products for commercial feed production. The study projected that present capacity of feed production will meet only 26.11% of total requirement in 2020-21 i.e., this huge demand supply gaps indicates a tremendous opportunities for feed industry and ultimately for poultry industry.

Above discussion on related works during the last half a decade clearly explores that there is hardly any work conducted so far on veterinary industry of Bangladesh. Particularly the issue regarding the economics of this industry has almost remained in dark and therefore hardly any information is available so as to provide the policy makers in the phase of developing policy and strategy for the improvement of livestock sector. The overall development of livestock sector depends more on the development of veterinary industry and the contribution of livestock sector in the economy of Bangladesh is ever expanding. Therefore the role of veterinary industry for the progress of agriculture of Bangladesh is apprehended to become pivotal in the time to come. Against this backdrop this paper is a modest endeavor to explore some facts relating mainly to the economic aspects of veterinary industry of Bangladesh.

OBJECTIVES

The principal objective of this paper is to explore the overall scenario of veterinary industry of Bangladesh in a brief version with special emphasis on the

economic aspects thereof. This paper has been designed to achieve the following specific objectives in mind to match the principal objective stated above and these are:

1. To explore the present status of the veterinary industry in Bangladesh.
2. To explore the contribution of veterinary industry to the economy of Bangladesh.
3. To explore the problem or constraints of the veterinary industry in Bangladesh.
4. To explore the future potential of the veterinary industry in Bangladesh.

METHODOLOGY

This paper is a descriptive study on the veterinary industry of Bangladesh with the accommodation of relevant data collected from different sources. Both primary and secondary sources of data have been used to construct the body of this paper. For the purpose of this study, primary data have been collected through the interview of twenty officials/employees of ten purposively selected veterinary medicine manufacturers and traders located in Dhaka. Relevant information has also been collected from Industry experts and practitioners by means of personal interview to enrich this paper. Veterinary industry of Bangladesh comprises approximately 12-15 small and large manufacturers along with lot of traders at home and abroad. Relevant data so collected have been presented in the statistically supportive form to aid the analysis of the study. Secondary data, on the other hand, have been collected from the relevant sources that include different journals, books, articles and directories – a list of which has been attached in the reference section of this paper.

PRESENT STATUS OF LIVESTOCK RESOURCES IN BANGLADESH

Livestock plays also an important role in the national economy of Bangladesh. The Government is committed to take necessary steps to achieve self sufficiency in production and distribution of livestock to meet the protein demand of the nation as well as to increase the total economic growth. To fulfill this commitment, the following activities have been undertaken for the development of livestock sector (BBS: 2011): **(a)** Production and distribution of vaccine for poultry and livestock **(b)** Supply of duckling and chicks at a cheaper price, **(c)** Artificial insemination extension program by using both diluted and frozen semen for improved variety **(d)** Increased production of semen, **(e)** Artificial fetus transfer technology, and **(f)** Prevention and control of Anthrax, Foot and Mouth Diseases and Avian Influenza.

Size of Livestock Resources;

The contribution of the livestock sub sector to GDP at constant prices was at 2.58 percent in FY 2010-11 and at 2.570 percent (provisional) in FY 2011-12

respectively. The growth of this sub-sector stood at 3.38 percent and 3.54 percent (provisional) in FY 2009-10 and FY 2010-11 respectively. Though the share of the livestock sub- sector in GDP is small, it contributes to meeting the daily protein requirements, cultivation, production and exports. According to the estimate of the Ministry of Fisheries and Livestock, the population of livestock and poultry was raised to 5.276 crore. Table 01 shows the growth of the livestock and poultry population of the country over the past few years.

**Table 01: Number of the Livestock and Poultry in Bangladesh.
(Figures in Lac)**

Livestock/ Poultry	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Cattle	228.0	228.7	229.0	229.76	230.51	231.21	231.68
Buffalo	11.6	12.1	12.6	13.04	13.49	13.94	14.24
Goat	199.4	207.5	215.6	224.01	232.75	241.49	247.54
Sheep	25.7	26.8	27.8	28.77	29.77	30.02	30.19
Total livestock	464.7	475.1	485.0	495.58	506.52	516.66	523.65
Chicken	1948.2	2068.9	2124.7	2213.94	2280.35	2346.86	2392.49
Duck	381.7	390.8	398.4	412.34	426.77	441.20	451.15
Total Poultry	2329.9	2459.7	2523.1	2626.28	2707.12	2788.06	2843.64

Source: Department of Livestock Services, MoFL.

Size of Livestock Production

The production of animal protein such as milk, meat (beef, mutton and chicken) and eggs have been increasing over the past several years. Table 02 summarizes the production statistics of milk, meat and eggs from FY 2005-06 to FY 2011-12.

Table 02: Production of Milk, Meat and Eggs

Product	Unit	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Milk	Lac tonnes	22.7	22.8	26.50	22.86	23.65	29.47	21.21
Meat	Lac tonnes	11.3	10.4	10.40	10.84	12.64	19.86	16.92
Eggs	Lac	54220	53690	56532	46920	57424	60785	40561

Source: Department of Livestock Services, MoFL

In our country we are not fully dependent on our own production and distribution. Domestic supply contributes only 1/4th or 25% of the total domestic demand. Especially the items are meat, egg, milk, fish and other protein and nutrition items. In our country we are not fully integrated in our production and distribution. Integration is a new approach for agricultural production in most tropical countries and developing countries that agriculture is integrated one. Efficiencies and economies will come by sharing land space, labor, management, professionals, product and by-product utilizations, and infrastructures for

production of multiple commodities (Islam, 2000). In China, Thailand, Malaysia integrated farming and agriculture is followed so that their market size becomes larger in food production. On the southern part of Asia– India, Myanmar is following the integration like other countries. Bangladesh is on the way of following integration and stepped a little ahead towards integration.

Laws Relating to Livestock Resources:

To control and protect diseases of the livestock coming from abroad and to ensure public health a number of laws like ‘Livestock Disease Act-2005’, ‘Fish and Cattle Feed Ordinance 2008’, ‘Animal and Animal Products Quarantine Act 2005’ have been enacted. Besides, there is a policy called the ‘National Livestock Development Policy-2007’ in place to guide the process of implementation of these laws. ‘Fisheries and Livestock Feed Act-2010’ has also been approved to protect quality of livestock feed.

Development of Infrastructure:

Sixty-four District Veterinary Hospitals and 464 Upazila Livestock Development Centers (ULDC) have been established for the expansion of modern veterinary services to the farmers. Technical supports are provided to poultry and dairy farms to test the quality of animal and poultry feeds, besides ensuring the modern veterinary services (Bangladesh economic review, 2011).

Vaccination of Livestock and Poultry to Control Disease:

The Government has been producing 16 different types of livestock and poultry vaccines to immune livestock and poultry population from certain diseases. During FY 2011-12, a total of 7 crore 32 lac 84 thousand doses of vaccines was produced. Treatment has given to 33.29 lac cattle and 267.68 lac poultry in FY 2011-12.

Table 03: Artificial insemination, treatment, vaccination and training

Function	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Artificial Insemination of Cattle	14.22	15.96	17.83	18.10	20.00	22.70	24.42	16.58
Treatment of livestock	194.92	194.91	287.94	296.30	275.25	374.68	496.60	300.97
Vaccination of Livestock and Poultry	2278	2142	2869	2447	2065	2391	2410	732.84
Training	6.24	7.14	8.13	7.28	8.00	8.78	9.81	5.92

Source: Bangladesh economic review: 2011

Avian Influenza/ Bird Flu:

Outbreak of Avian Influenza/Bird Flu was first identified in March 2007. Since then this has been a threat to the livestock of Bangladesh. During FY 2010-11 a total of 60 commercial farms was infected and a total of 18,48,660 hens and 25,31,821 eggs was culled and properly disposed. A massive program has been taken up to address this menace. A total of BDT 14.73 crore was distributed among farmers as compensation from the starting year of this menace up to FY 2011-12. Besides, *Avian Influenza Preparedness and Response Project* supported by the World Bank and *Strengthening of Support Services for Combating Avian Influenza in Bangladesh project* funded by USAID are being implemented to control avian influenza in the country. Furthermore, a Digital SMS gateway system is working effectively to encode and decode avian influenza attack messages promptly (BBS, 2011)

PRESENT SCENARIO OF VETERINARY INDUSTRY OF BANGLADESH

Bangladesh is basically an agriculture based country and livestock is the subsector of agriculture. The role of livestock is identified as one of the key sectors to alleviate poverty which is one of the important targets of millennium development goals (MDG) of Bangladesh government. With the active role of livestock, government wants to meet the protein demand of the nation, to generate more employment, to upscale export earnings, to empower women. Livestock, being a subsector, plays a vital role in the economic development of country.

The contribution of livestock to National Gross Domestic Product (GDP) is 2.79 percent and which is 17.15 percent in Agricultural share. About 44 percent of the animal protein comes from livestock sources. Moreover, 4.31 percent of the total export is from the export of leather and leather goods. The 30 percent of the total tillage is still covered by livestock beside mechanical tillage. Furthermore, 20 percent of the population is directly and 50 percent of the population is partially dependent on livestock sector. The sub-sector enjoyed a growth rate of 5.85 percent during the last fiscal year.

According to the information published in the poultry-site, total veterinary market size of Bangladesh is about 30,000 crores BDT. The veterinary market comprises of the following: (a) Medicine and Feed additives/supplements—including biological, non-biologicals, nutritional & non-nutritional feed additives or supplements, (b) Feed (Mainly for poultry, aqua and large animals), (c) Livestock (hatchery, breeder farm, grant parent stock, parent stock, commercial poultry farm, beef fattening farm, milking cattle, pet animal), and (d) Equipments and machineries.

No segment is less important but plays a pivotal role for the development and growth of the industry. Besides, medicines including biological, non-biologicals,

nutritional and non-nutritional feed additives segment have also a remarkable contribution for the development and growth of the industry.

Though veterinary market is directly related to meet protein source of nation, at the same time, this sector is the most vulnerable due to frequent outbreak of bird-flu and number of farm reduces to nearly half or less than that in 2012. As poultry comprises the most of the market size, so any shortcoming or limitation directly affects the size and growth of the whole industry. However, growth of the large animal population is virtually static, though it increases gradually and somewhere drastically in few areas of the country.

The following table indicates the approximate market size of medicines including biological, non-biologicals, nutritional and non-nutritional feed additives or supplements which is found from different field survey/personal communications. It is to mention that there is yet to further develop adequate authentic sources of data and information on this sector.

Table 04: Approximate market size of medicine and feed additive/supplements

Year	Market size (BDT in crore)	Growth
2012	980	6.5%
2011	920	16.46%
2010	790	25.40%
2009	630	40%
2008	450	-

In the segment of major players of medicine, biologicals and non-biologicals, nutritional and non-nutritional markets, products are made available in market by manufacturers and traders. Approximately 20 manufacturing companies are producing products in their own plant and are in competition. Among them, Renata, Acme, Novartis, ACI, Square, SK+F are the major players who are contributing most of the market share.

Among the manufacturers, some or most of the companies are also importing medicinal products for marketing. Approximately 70 trading houses are actively participating in importing and marketing veterinary medicines, feed additive/supplement and vaccines etc. Figure 05 shows 5 years sales scenario (approximate figures) of major players.

Table 05: Year wise approximate achievement of major companies

	2012	2011	2010	2009	2008
Renata	145	140	112	86	69
Acme	140	128	92	75	55
Novartis	82	73	65	48	38
ACI	84	76	78	57	40
Square	72	66	53	42	32
SK+F	70	62	48	40	33
Jayson	-	-	39	48	7.5
Navana	36	36	42	37	-
Opsonin	29	27	19	12.5	10
Others					

Veterinary market is still running under conventional, old methods. Still there are no authentic sources of data and information. Even sales scenario of the major players is collected from field survey/personal communications which may or may not correspond to the real figures.

PROBLEMS AND CONSTRAINTS RELATED WITH VETERINARY INDUSTRY OF BANGLADESH

Livestock are on the way of integration into the mixed farming system in Bangladesh, where approximately 25% of the country's population is directly involved in livestock related economic activities (Sheel and Sen, 2013). Lack of the proper caring of the industry is needed to be taken immediately to safe our prominent industry otherwise agri-based people will be destroyed and an adverse impact will happen on the food sector of our economy. Livestock services are delivered to the farmers in Bangladesh by public sector organizations like the Directorate of Livestock Services (DLS) and Bangladesh Livestock Research Institute (BLRI), a number of Non-Governmental Organizations (NGOs), Cooperative Societies and private organizations such as poultry hatcheries, pharmaceutical companies and others traders (BER, 2001). Five training Institutes of DLS are primarily used for imparting basic knowledge or up-dating training of its auxiliary staff and rarely for training of farmers. Animal health protection and treatment is the most voluminous component of DLSs service delivery system and is executed through a network of 9 Regional diagnostic laboratories, 17 district diagnostic laboratories, one Veterinary Vaccine Production Laboratory (VVPL) and 464 Upazila (sub-district) Veterinary

Hospitals (UVH). DLS' diagnostic laboratories are equipped with sophisticated equipment, but the activities are limited to examination of a few blood, sera and fecal samples and post-mortem examinations of birds belonging to private farmers. Most initial diagnostic activities are accomplished in the Upazila Veterinary Hospitals (BER, 2001).

Though we have the different organizations for veterinary improvement there are several problems of the manufacturing companies as well as some external environmental factors that hamper most of the industry. The respondents were asked to identify the problems of veterinary industry. According to them the main problems are listed below:

Internal Problems:

1. It is not always possible to deliver the medicinal products properly on time.
2. Farmers of the rural and remote area don't get the veterinary products because of the unorganized and undecorated distribution channels.
3. Companies' inadequate production capacity hampers the normal supply.
4. Inadequate availability of GP, Breeders, DOC etc.

External Problems:

1. Farmers are reluctant to use medicinal products.
2. Inadequate training of the farmers of using medicine products to the animals and plants.
3. Inadequate lab practices and facilities hamper diagnosis of diseases.
4. Lack of funds/working capital is one of the limitations for establishing new farms.
5. Farmers those have no knowledge of farm environment and management creates problems in new establishment of farms.
6. Inadequate government regulation may impede the continuous growth of veterinary industry.

CONSTRAINTS AND CHALLENGES

Department of Livestock Services of the government of Bangladesh, in its policy regarding sustainable livestock resource has mentioned several constraints and key challenges in our country, and these are:

Major Constraints:

1. 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.

2. 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.
3. 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.
4. 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

1. 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.
2. 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.
3. 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.

CONCLUSION

The government is committed to eradicating extreme poverty and hunger by 2015 to achieve the targets of the Millennium Development Goals. To fulfill this commitment and to bring about comprehensive economic development, the government is providing various incentives in this sector like infrastructure development, credit and research and extension facilities. Different NGOs have also undertaken programs to motivate and train concerned farmers and thereby increase production in these activities. About 1,000 fish and shrimp hatcheries

are being setup through private initiatives. The Government's strategy is to harness the full potentials of this sub-sector by creating an enabling environment, opening up opportunities, and reducing risk and vulnerability. The private sector will remain the main actor, while the Department of Livestock Services (DLS) and Bangladesh Livestock Research Institute (BLRI) will play supportive roles. The Government budgetary provision for the livestock sub-sector will be increased to ensure significant development in this sub-sector, and increased provision of trained manpower will be linked to expand nationwide outfit of DLS. Livestock production is subject to the risk of disease, accident and death. The frequent outbreak of Bird flu in the poultry sector of Bangladesh is the vivid example for the same. Casualties in dairy and hatchery sectors are also very prominent in the livestock sector. Farmers face consequent losses of investment and future income. They are incapable of mitigating such risk through institutional means due to insufficient public institutional support and 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. Veterinary industry can be a viable safeguard to protect the interest of the farmers of Bangladesh by minimizing the loss of mortality of livestock and fisheries to a great extent which not only ensure a strong foothold to the farmers but also will make healthy contribution to the country's food security program. The demand for basic food in this country will increase in the coming days as with the rise in population, agricultural production shall have to be expanded to support the augmented population. In view of this reality, veterinary industry in Bangladesh is expected to be flourishing as the preemptive force to defend the country's food domain with due attention by both the public and private sectors.

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