CHAPTER 7

AGRICULTURE

[*Food security of the vast population of Bangladesh is directly linked with agriculture. Besides, agriculture is directly related to the issues like poverty alleviation, raising of standard of living and increased generation of employment. It is, therefore, important to have a profitable, sustainable and environment- friendly agricultural system in order to ensure long- term food security. Broad agriculture sector and rural development sector have been given the highest priority in order to make Bangladesh self-sufficient in food by 2013. All out efforts of the government have been there to develop the agriculture sector keeping in view the goals set out in the 6th Five Year Plan, National Agriculture Policy (NAP) and Millennium Development Goals. In FY 2011-12, the food grains production stood at around 351.20 lakh metric tonnes (MT) according to BBS (Aus 23.32 lakh MT, Aman 127.98 lakh MT, Boro 187.59 lakh MT, Wheat 9.95 lakh MT, Maize 2.36 lakh MT). In the same fiscal year, the total internal procurement of food grains was 14.26 lakh MT, the total import of food grains through public and private sectors was 22.90 lakh MT (rice 5.23 lakh MT and wheat 17.67 lakh MT). In addition, an amount of Tk.13,800.00 crore was targeted to be disbursed as agricultural credit against which Tk 13,132.15 crore was disbursed till June 2012, which was 95.16 percent of the target. In order to scale up productivity, measures like increased subsidy in agricultural inputs, increased availability of agricultural inputs, increase the coverage and availability of agricultural credit have been taken. Crop insurance has been introduced to provide the small and medium farmers with price support in the event of crop failure. Programmes have been launched to popularise the use of organic and balanced fertilizer to maintain soil fertility and productivity. Considering the importance of increased productivity of agricultural products, an amount of Tk. 6500.00 crore was allocated in the revised budget of FY 2011-12 to provide subsidy on fertilizer and other agricultural inputs.*

Agriculture is one of the drivers of growth of Bangladesh economy. The contribution of agriculture sector to GDP stood at 19.29 percent (BBS provisional estimate) in FY 2011-12. According to the estimation of BBS, the overall contribution of the broad agriculture sector at constant price was 20.01 percent of GDP in FY 2010-11. The growth of broad service sector, particularly the growth of wholesale and retail trade, hotel and restaurants, transport and communication sector is strongly supported by the agriculture sector. Besides, around 43.6 percent of the total labour force of the country are engaged in agriculture sector (MES, 2009, BBS). In FY 2011-12, Bangladesh earned US$ 402.70 million by exporting agricultural products which was 1.46 percent of total export earning (US$ 24301.90 million). 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.

Management of Agriculture

Achieving self-sufficiency in food by 2013 is one of the avowed goals of the present Government. To attain this goal and to fulfill the food demand of the vast population of the country, the Government has placed highest importance to the overall development of agriculture sector including increased national food production. With a view to developing the agriculture sector, the Government have taken a number of steps. These include, among others, expansion of small irrigation facilities, reduction of water logging, production of improved quality and high yielding varieties of seeds and their preservation and distribution. Agricultural research has been given special priority for the development and expansion of the draught and saline tolerant varieties, short duration crops and varieties of crops adaptable to 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 and integreated pest management (IPM) for pest control. Saline tolerant and short duration crop variety and technology has been invented and extended to the field through nuclear and bio-technological methods. Saline tolerant crop varieties have extended the coverage of rice cultivation in the vast coastal areas of southern region. Cultivation of short duration crops helps reduce food scarcity in *monga*-prone areas and generate employment.

Steps have been taken to scale up subsidy on agricultural inputs, ensure fair price and supply of agricultural inputs, expansion of irrigation facilities and increased availability of irrigation instrument, agriculture extension as per target, quality control of agriculturl products and ensure sufficient storage facility of food grains. Implementation of various programmes are underway to increase food production through expansion of coverage of agricultural land and to increase the opportunity of multiple cropping by virtue of expansion of irrigation by using ground water in various regions of the country, reduction of water logging and planned drainage of water in *haor* areas. The Government has taken an initiative to introduce a 'Crop Insurance' scheme to provide the small and medium crop farmers with crop price support in the event of crop failure due to natural disaster. In addition,an 'Endowment Fund' has been established to provide support to increase productivity through diversification of crops. Apart from this, the Government has distributed input assistance cards to 1 crore 40 lakh farmer families of the country upto June 2012.

Food Grains Production

According to the BBS final estimate, the volume of food grains production in FY 2010-11 was 360.65 lakh MT in which *Aus* accounted for 21.33 lakh MT, *Aman* 127.91 lakh MT, *Boro* 186.17 lakh MT,wheat 9.72 lakh MT and maize 15.52 lakh MT. In FY 2011-12, the food grains production was about 351.20 lakh MT in which *Aus* 23.32 lakh MT, *Aman* 127.98 lakh MT, *Boro* 187.59 lakh MT and wheat 9.95 lakh MT and maize 2.36 lakh MT. Table 7.1 below shows the food grains production status during the period from FY 2004-05 to FY 2011-12:

Table 7.1: Food Grains Production

(In lakh MT)

Food grains	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Aus	15.00	17.45	15.12	15.07	18.95	17.09	21.33	23.32
Aman	98.20	108.10	108.41	96.62	116.13	133.07	127.91	127.98
Boro	138.37	139.75	149.65	177.62	178.09	183.41	186.17	187.59
Total Rice	**251.57**	**265.53**	**273.18**	**289.31**	**313.17**	**322.57**	**335.41**	**338.89**
Wheat	9.76	7.35	7.25	8.44	8.44	9.69	9.72	9.95
Maize	3.56	5.22	8.99	13.46	7.30	8.87	15.52	2.36
Total	**264.89**	**277.87**	**289.42**	**311.21**	**328.96**	**341.13**	**360.65**	**351.20**

Source: Bangladesh Bureau of Statistics (BBS).

Food Budget

Internal Procurement of Food Grains

In FY 2011-12, the total target of internal procurement was revised from 11.50 lakh MT to 13.50 lakh MT (rice: 12.50 lakh MT and wheat: 1.00 lakh MT), against which as much as 14.26 lakh MT was procured (rice: 13.27 lakh MT and wheat: 0.99 lakh MT).

Food Grains Import (Public sector)

In FY 2011-12, there was a provision for public import of 14.48 lakh MT of food grains (rice: 4.58 lakh MT, wheat: 9.90 lakh MT). Out of this planned import, a total of 10.51 lakh MT of food grains (rice: 4065 lakh MT, wheat: 5.86 lakh MT) was imported. Out of the total quantity, a total 0.55 lakh MT was imported under aid programme and the remaining 9.95 lakh MT was Government commercial import.

Food Grains Import (Private sector)

In FY 2011-12, the private import of food grains stood at 12.40 lakh MT (rice: 0.59 lakh MT, wheat: 11.81 lakh MT).

Food Grains Import (Overall)

In FY 2011-12, the total import of food grains in public and private sector was 22.91 lakh MT (rice: 5.24 lakh MT and wheat: 17.67 lakh MT), whereas it stood at 51.5 lakh MT (rice: 15.54 lakh MT, wheat: 35.96 lakh MT) in FY 2010-11 .

Public Food Distribution

The Government provides support for food to the fixed-income government employees and low-income people through different channels of Public Food Distribution System (PFDS). These channels are normally divided into two categories as: monetized and non monetized. Monetized channel covers OMS, Fair Price Card for small income groups, class IV employees and garment workers. On the other hand , non-monetized channels are intended for all the social safety net programmes like Food for Work (FFW), Test Relief (TR), Vulnerable Group Feeding (VGF), Vulnerable Group Development (VGD), Gratuitous Relief (GR) and others. In FY 2010-11, the total distribution of food grains through different channels stood at 27.29 lakh MT against the target of 22.00 lakh MT (Monetized Channel 14.78 lakh MT and Non-Monitized Channel 8.15 lakh MT). In FY 2011-12, a total of 20.95 lakh MT food grains was distributed.

Seed Production and Planting Materials

Quality seed is the prime input to increased agricultural production. BADC produces foundation seeds from breeder seed of cereal crops on its 23 farms, jute seeds on 2 farms, vegetable seeds on 2 farms, potato seeds on 2 farms and pulse and oil seeds on 3 farms. Besides these, certified seeds of rice, wheat, maize, jute, vegetables, spices, potato and pulse and oil seeds are also being multiplied through 75 contract growers' zones. In addition, 9 horticulture development centres and 12 agro service centres of BADC are producing and distributing the seedlings and other planting materials throughout the country.

Taking into account the demand for quality seeds in Bangladesh, BADC set a target in FY 2011-12 to produce 1,57,465 MT seeds (97,710 MT paddy seeds, 28,000 MT wheat seeds, 1,000 MT maize seeds, 24,000 MT potato seeds, 1,720 MT jute seeds, 2,100 MT pulse seeds, 1,900 MT oil seeds, 132 MT vegetable seeds and 900 MT spices seeds). In the same fiscal year, the target of seeds distribution was 1,44,200 MT. Achievement of production and distribution of seeds through BADC's own farms and contract growers for FY 2009-10, FY 2010-11 and FY 2011-12 are shown in Table 7.2 below:

Table 7.2: Seed Production and Distribution through Seed Multiplication Farms and Contract Growers' Zones

(In metric tonne)

Sl No	Name of the Seed	Achievement in FY 2009-10		Achievement in FY 2010-11		Achievement in FY 2011-12	
		Production	Distribution	Production	Distribution	Production	Distribution
1	Aus (HYV)	1,350	777	1,350	941	1350	1054
2	Aman (HYV)	22,590	17,681	26,220	20,366	31,630	26,227
3	Boro	59,799	44,417	58002	57,815	62730	63,826

Sl No	Name of the Seed	Achievement in FY 2009-10		Achievement in FY 2010-11		Achievement in FY 2011-12	
		Production	Distribution	Production	Distribution	Production	Distribution
	(HYV)						
4	Boro (Hybrid)	508	69	410	405	2000	714
Total Paddy		**84,247**	**62,944**	**85,982**	**79,527**	**97,710**	**91,821**
5	Wheat	26,000	23,429	27,069	26,961	28000	27,304
6	Maize	191	40	131	85	1000	296
7	Others	-	-	-	-	3.17	3.54
Total Cereals		**1,10,438**	**86,413**	**1,13,182**	**1,06,573**	**1,26,713**	**1,19,015**
10	Potato	18,000	13,987	18,899	18,148	24000	20,442
11	Jute	1,263	1,230	1,621	857	1720	1,589
12	Pulses	1,014	668	1,208	1,208	2100	1426
13	Oil seed	1,188	727	1,012	1,012	1900	1092
14	Vegetables	102	86	102	102	132	120
15	Spices	632	461	612	591	900	107
Total		**1,32,637**	**1,03,572**	**1,36,636**	**1,28,491**	**1,57,465**	**1,44,200**

Source: Ministry of Agriculture.

Fertilizer

The expansion of modern agricultural farming practices like use of High Yielding Variety (HYV) together with intensified cultivation is needed to ensure food for all, which led to an increasing demand for fertilizers. It is, therefore, necessary to ensure timely supply of both organic and chemical fertilizers to meet the nutritional demand of these varieties. The use of chemical fertilizer is on the increase with the increasing demand for food production in the country. The use of urea fertilizer alone was the highest. In FY 2010-11, the quantity of urea fertilizer used was 26.57 lakh MT . The total quantity of fertilizers used was 41.17 lakh MT in the same year. In FY 2011-12, the total quantity of fertilizer used was 40.49 lakh MT. The year wise use of fertilizers during the period from FY 2005-06 to FY 2011-12 is shown in Table 7.3 below:

Table 7.3: Use of Chemical Fertilizer

('000' metric tonne)

Type of Fertilizers	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Urea	2451.37	2515.00	2763.00	2532.00	2406.00	2657.00	2296.00
TSP	436.47	340.00	392.00	156.00	420.00	580.00	678.00
DAP	145.00	115.00	129.00	18.23	136.00	323.00	409.00
MOP	290.67	230.00	260.00	75.00	263.00	494.00	613.00

Type of Fertilizers	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
SSP	130.39	122.00	118.00	20.00	0.00	0.00	0.00
NPKS	110.00	125.00	120.00	40.00	50.00	40.00	20.00
AS	6.32	6.00	7.00	3.00	5.00	6.00	6.00
Zinc	7.50	26.00	20.00	5.00	10.00	7.00	12.00
Gypsum	104.95	72.00	75.00	15.00	20.00	10.00	15.00
Total	**3682.67**	**3551.00**	**3886.00**	**2865.19**	**3310.00**	**4117.00**	**4049.00**

Source: FFM/ Ministry of Agriculture.

Irrigation

It is possible to increase crop production through proper water management. Efforts have been continuing to ensure the use of under ground and surface water in an integrated and planned manner to increase cropping intensity, diversification and yield while maintaining environmental balance. A number of projects are being implemented in different regions of Bangladesh to motivate farmers for efficient water use management. Through these projects, different demonstrations were carried out in b*oro* season on AWD (Alternate Wetting and Drying) which received better responses from the farmer.

Programmes have been taken up to conserve ground water and its use to reduce pressure on underground water keeping in view the issues such as global warming, climate change, reduction of water flow in the international rivers etc. The Government has undertaken various projects to build over-ground and buried pipe irrigation canals in order to install power driven pumps, and to prevent wastage of irrigation water by excavating/ re-excavating canals, building dams in mountain streams and constructing irrigation infrastructures. Work on installation of smart card-based prepaid meters is under way to provide irrigation facilities using rubber dams and to ensure collection of irrigation surcharge and optimum usage of water.

Since the inception of minor irrigation projects (power pump, DTW, STW and floating pump etc.) in the early sixties, area under irrigation has been expanding. In FY 2004-05, it was 53.65 lakh hectares, which increased to 56.90 lakh hectares in 2009-10. BADC provided irrigation facilities to 4.75 lakh hectares of land in FY 2005-06, 4.88 lakh hectares of land in FY 2006-07 and 4.95 lakh hectares of land in FY 2007-08 and 5.00 lakh hectares of land in FY 2008-09 through utilisation of deep tube wells, shallow tube wells, floating pumps and low lift pumps as well as re-excavation of canals and
construction of sluice gates and water control structures under different irrigation and area development projects. BADC has planned to implement 73 minor irrigation development programmes (*Karmasuchi*) to increase agricultural production throughout the country especially at water logged area, southern part of the country and *hao*r area. Under the stated programmes, excavation and re-excavation of 385.70 km *canal*, construction of 5.793 km ring dam (beri

bundh), 262 hydraulic structures, 4 dug wells and 795.60 km irrigation channel have been constructed in FY 2011-12. Barind Multipurpose Development Authority (BMDA) has developed a plan to use both surface and underground water for irrigation purposes. In order to minimise the irrigation water loss, BMDA has developed underground water distribution system (buried pipe line), established AWD (alternate wetting and drying) demonstration plots and installed pre-paid metres with deep tubewells (DTW) and low lift pumps (LLPs). Pre-paid metering system has also minimised the electricity losses and ensured that the farmers would get the irrigation water according to their needs. BMDA has expanded their activities all over the Rajshahi and Rangpur Divisions. In the current year, the authority is implementing 6 (six) different projects for expanding irrigation area. In this year, under these projects 280 inoperable DTW will be made operational, 184 new DTW will be installed, 1308 underground water distribution systems will be constructed and 75 km. *khas* canal will be re-excavated which will create more opportunities to expand about additional 15 thousand hectares of land for irrigation leading to increased crop production. The authority has provided irrigation to 5.95 lakh hectares of land through its huge network of deep tubewells (13778) and 45 LLPs during *aus, aman* and *boro* seasons in FY 2011-12. As a result, a total of 27.85 lakh MT of food grains has been produced. Considering the scarcity of surface water, the authority has re-excavated 1138 KM *khas* canal and 2878 *khas* ponds to conserve the rain water for supplementary irrigation. Moreover, the authority has constructed 608 cross-dams across the canals to retain rain water for supplementary irrigation. About 40 thousand hectares of land has so far been brought under supplementary irrigation and 2.00 lakh MT of food grains were produced by utilising the surface water. A total of 6.35 lakh hectares of land has come under irrigation which produced 29.85 lakh MT of food grains in FY 2011-12 and more than 10 lakh farmers were directly benefited. BADC launched the construction programme of a ring dam having the length of 50 metres at *Manogchara* under *Haluaghat upazila* of Mymensingh district and another ring dam having the length of 100 meter over *Sonai* river at chatak *upazila* of *Sumangang* district. Irrigation activities and pisciculture programmes were launched under the auspices of *Jhiri Bandh* project in the Chittagong Hill Tracts. By this time, 120 *Jhiri bandhs* have been completed and construction of 50 *Jhiri* bandhs are under construction.The irrigated land area during the period from FY 2005-06 to FY 2011-12 is shown in Table 7.4 below:

Table 7.4: Area under Irrigation

(area in lakh hectare)

Irrigation method	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
a) Surface							
Major irrigation	7.85	6.19	6.37	5.75	10.41	10.11	10.14*
LLP	8.03	8.10	10.45	11.57	8.95	10.10	10.77
Indigenous method	0.00	1.37	0.00	0.44	1.58	1.90	2.04
Sub-total-a	15.88	15.66	16.82	17.75	20.54	22.11	22.95

Irrigation method	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
b) Underground							
Deep tube well	7.01	7.25	7.55	7.90	6.60	7.19	7.54
Shallow tube well (surface/deep/very deep)	31.21	31.96	33.70	33.72	29.31	35.05	34.66
Others	0.00	0.14	0.00	0.15	0.05	0	0
Sub-total-b:	38.21	39.36	41.25	41.77	35.96	42.24	42.20
Total (a+b):	**54.10**	**55.01**	**58.07**	**59.54**	**56.90**	**64.35**	**65.15**

Source: Department of Agricultural Extension (DAE), Ministry of Agriculture.;* Water Development Board

Agricultural Credit

Agricultural credit, as an input, plays an important role in driving the agriculture of Bangladesh towards a sustainable level. Food security, employment generation and poverty alleviation are closely linked with the development of agriculture sector. To strengthen the agricultural and rural credit programme, Bangladesh Bank formulated its Agricultural and Rural Credit Policy and Programme for the FYs 2009-10, 2010-11, 2011-12 in an extended format. The objective of this policy is to ensure easy access to the agricultural and rural credit facilities by the farmers from the scheduled banks of the country.

The Agricultural and Rural Credit Policy and Programme includes certain new features such as, widening the scope of agricultural credit and financial inclusion, expanding banking services to rural areas using information technology, deciding the courses of action for adapting the impact of climate change, inclusion of credit norms for a number of new crops, allowing concessional interest rate (4 percent) for the production of import substitute crops etc. This policy support is expected to help directly in keeping the price level of foodstuff within the purchasing power of the mass people. Around 95.86 lakh farmers have been allowed to open accounts with the the State-owned Commercial Banks with an initial deposit of Tk. 10 only which are being used for credit disbursement, savings and remittances purposes. During FY 2011-12, agricultural and rural credits of Tk. 13,132.15 crore was disbursed against the target of Tk. 13,800 crore achieving 95.16 percent of the total target. Table-7.5 shows a summary of agricultural credit disbursement and recovery position during the period from FY 2005-06 to FY 2011-12.

Table7.5: Year-wise Disbursement and Recovery of Agricultural Credit

(In crore Taka)

Fiscal Year	Target	Disbursement	Recovery	Balance
2005-06	5892.21	5496.21	4164.35	15376.79
2006-07	6351.30	5292.51	4676.00	14582.56
2007-08	8308.55	8580.66	6003.70	17822.50
2008-09	9379.23	9284.46	8377.62	19598.15

Fiscal Year	Target	Disbursement	Recovery	Balance
2009-10	11512.30	11116.88	10112.75	22588.58
2010-11	12617.40	12184.32	12148.61	25492.13
2011-12	13800.00	13132.15	12359.00	25974.97

Source: Bangladesh Bank.

Budget Allocation for Agriculture Sector

The Government made an outlay of Tk. 9,260.00 crore (Tk. 8,238.00 crore for non-development and Tk. 1,022.00 crore for development) in the revised budget of FY 2011-12 for the Ministry of Agriculture. With a view to supporting the farmers, an amount of Tk. 6,500.00 crore was allocated in the revised budget of FY 2011-12 to provide subsidy on fertilizers and for other agricultural inputs. Beside this, an allocation of Tk. 52.07 crore was made for agricultural rehabilitation.

In addition to the normal allocation in agriculture sector, the Government has taken initiatives to provide 30 percent cash incentives for exporting agricultural products. The Government is also allowing 20 percent rebate on electricity bills to the entrepreneurs of agro-based industries and has reduced the rate of interest from 8 percent to 4 percent for disbursement of loans for the production of pulse, oil-seeds and spices.

Development Activities in Agriculture Sector

(A) Annual Development Programme (ADP)

To achieve the avowed goal of ensuring food security for all by 2013, the agriculture sector has been identified as a thrust sector. The Ministry of Agriculture is implementing different development projects and programmes covering agricultural research and education, agricultural extension and training, marketing of agricultural products, agricultural support and rehabilitation, innovation, procurement and management of agricultural input and equipment, seed production, storage and distribution, development of irrigation infrastructure, fertilizer management activities and crop storage etc. The important steps are:

- Increased crop production without jeopardising the soil fertility;
- Increased food production through human resource development, institutional infrastructure development, ensuring the availability of fertilizers and agricultural equipment, crop zoning, introduction of homestead gardening and pest management;
- Increased crop production through invention and dissemination programme of agriculture technology;
- Introduction and extension of salt and draught resilient rice varieties in the south and north region of the country;

- Enhancement of irrigation facilities to increase crop production through the construction of rubber dams in small and medium rivers;
- Establishment of seed multiplication farm in the south west region of the country to ensure quality seed supply;
- Marketing of agricultural products and development of rural communication to ensure fair price of agricultural products;
- Introduction of new varieties of crops to cope up with the possible climate change;
- Farm mechanisation technology to increase crop production and minimise the seasonal labour crisis;
- Transforming the barren land into agriculture land through the extension of irrigation areas;
- Introduction of community rural radio to make Digital Agriculture a success;
- Reducing import dependency in respect of sugar and molasses;
- Research and extension activities to increase cotton production;
- Rain water conservation and irrigation in the Barind areas.

On going activities

- A Project on Establishment of Integrated Seed Cold Storage Complex to supply quality seed to farmers to increase crop production;
- A project on Genome Sequencing of Jute for selection of jute cultivation area and extension of Ribbon Rating Technology;
- Integrated Horticulture Development Project to increase fruit production and extension.

There were 71 development projects in the Revised Annual Development Programmes (RADP) of FY 2011-12 under the Ministry of Agriculture. Of which, 67 (including 7 JDCF projects) were investment projects and the remaining 4 were technical assistance projects. The total allocation stood Tk. 1019.24 crore (GOB: 808.31 crore; Project aid: Tk 210.93 crore). An amount of Tk. 982.71 crore (GOB:Tk.796.60 crore; Project aid: Tk.186.11 crore) was spent up to June 2012 which was about 96.42 percent of total RADP allocation.

In the RADP of FY 2010-11, there were as many as 64 development projects of which, 61 (including 8 JDCF projects) were investment projects and 3 technical assistance projects. These projects carried a total allocation of Tk. 1,048.85 crore (GOB:Tk.909.67 crore; Project aid:Tk. 139.18 crore). Upto June 2011, an amount of Tk. 1,019.71 crore was spent which was about 97 percent of the total RADP allocation.

(B) Programmes under Non- development Budget

In the revised budget of FY 2011-12, an amount of Tk. 232.49 crore was allocated for 102 approved programmes under the non-development budget for the Ministry of Agriculture. Up to June, 2012 an amount of Tk. 222.95 crore was utilized, which was 96 percent of the total allocation.

Fisheries Subsector

Fish Production

Increased fish production is the main target of this sector to scale up the supply of animal protein. In order to meet this target, a number of projects and programmes have been undertaken.These include: strengthening community based aquaculture, ensuring access of fishermen to the *khas jalmahals*, establishment of *beel* nursery, release of fish fries in the open water, extension of *gher*, pane and cage culture, habitat restoration through re-excavation of silted rivers and innovation of new technologies through research and extension. The total fish production in FY 2010-11 stood at 30.62 lakh MT, which increased to 32.62 lakh MT in FY 2011-12. Table-7.6 shows the trend of fish production during the period from FY 2004-05 to FY 2011-12.

Table7.6: Fish Production Trends in Different Resources

(In lakh metric tonne)

Sector	Area (Lakh hector)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1.Inland									
(a) Capture									
(i) River & Estuaries	8.54	1.40	1.38	1.37	1.37	1.69	1.35	1.45	1.46
(ii) Sundarban	1.78	0.16	0.16	0.18	0.18	0.20	0.18	0.22	0.26
(iii) Beel	1.14	0.75	0.78	0.75	0.78	0.93	0.64	0.82	0.85
(iv) Kaptai lake	0.69	0.07	0.07	0.08	0.08	0.09	0.07	0.09	0.09
(v) Flood plain	28.10	6.21	7.18	7.68	8.19	6.17	7.51	7.97	8.18
Sub-Total (Capture)	**40.25**	**8.59**	**9.57**	**10.06**	**10.60**	**9.08**	**9.75**	**10.55**	**10.83**
(b) Culture									
(i) Pond	3.71	7.57	7.60	8.12	8.66	10.27	12.98	12.20	13.55
(ii) Semi closed water	0.25	--	--	--	--	--	--	0.51	0.543
bodies	0.06	0.04	0.04	0.04	0.05	0.06	0.05	0.05	0.057
(iii) Baors	2.77	1.21	1.28	1.29	1.35	1.49	1.23	1.85	1.96
(iv)Shrimp/Prawnfarm s									
Sub -Total (Culture)	**6.78**	**8.82**	**8.92**	**9.46**	**10.06**	**11.82**	**14.26**	**14.60**	**16.11**
Total (Inland)	**47.03**	**17.41**	**18.49**	**19.52**	**20.66**	**20.90**	**24.02**	**25.15**	**26.95**
2. Marine Fisheries	0.48 sq.								
(a) Industrial	nautical	0.34	0.34	0.35	0.34	0.48	0.45	0.42	0.448
(b) Artisanal	mile	4.41	4.46	4.52	4.63	5.63	4.52	5.05	5.223

Sector	Area (Lakh hector)	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Total (Marine)	**-**	**4.75**	**4.80**	**4.87**	**4.97**	**6.11**	**4.97**	**5.46**	**5.67**
Country Total	**-**	**22.16**	**23.29**	**24.40**	**25.63**	**27.01**	**28.99**	**30.62**	**32.62**

Source: Department of Fisheries, Ministry of Fisheries and Livestock.

Production of Fish Spawn and Fingerlings

The basic requirement for increasing fish production is the availability of high quality fish fingerlings. The production and collection of fry/fingerlings from natural sources has declined due to climate changes and man-made hindrances such as construction of unplanned flood dam, irresponsible use of insecticides in the crop fields, pollution of water etc. The Government took several steps for the restoration of the natural breeding habitats. Inbreeding is the major problem for fish seed production in the hatchery. To overcome this problem, the Department of Fisheries (DoF) developed infrastructure facilities in 33 government farms and raised brood stock to collect fries from the natural stock. These brood fishes are distributed to private hatchery owners at a concessional price. At present, as many as 125 government hatcheries (fish seed multiplication farms) along with 870 private hatcheries are operational to meet the increasing demand of fingerlings. The production statistics of fish spawn and fish fries both from public and private sectors are shown in Table 7.7:

Table 7.7: Production Statistics of Carp Spawn/ Fingerling from Public and Private Hatcheries

Year	No. of hatcheries		Spawn (MT.)			No. of fry/ fingerlings (crore)		
	Public	Private	Public	Private	Total	Public	Private	Total
2004	112	756	4.80	345.23	350.03	1.84	520.00	521.84
2005	112	731	5.13	315.89	321.02	2.08	461.03	463.11
2006	112	764	4.82	407.83	412.65	1.24	428.28	429.52
2007	115	860	6.24	457.29	463.53	2.03	622.13	624.16
2008	119	754	7.04	416.95	423.99	2.76	549.03	551.76
2009	119	735	4.52	459.80	464.32	1.67	960.01	961.68
2010	122	862	5.59	482.04	487.63	2.11	983.87	988.09
2011	125	845	6.84	617.64	624.48	2.12	818.21	820.33
2012	125	870	6.86	619.50	626.33	2.10	834.57	836.67

Source: Department of Fisheries, Ministry of Fisheries and Livestock

Protection and Conservation Programme for *Jatka*

Jatka protection programme is observed every year for seven months from November to May. In order to run the alternative employment generation programme for the *jatka* fishermen on a sustainable basis, the DoF implemented *jatka* preservation, alternative employment generation and reaserch projects in 4 districts adjacent to *hilsha* protection areas. In the years 2009 and 2010, various trainings were imparted in order to generate alternative employment on a priority basis for relatively poor *jatka* fishermen of the *upzilas* under these project. In the past two years, in order to provide alternative employment and to improve the socio-economic condition of the *Jatka* fishermen , an amount of Tk. 3 crore was disbursed to as many as 4,388 fishermen families in 2009 and Tk. 4.62 crore to 6,609 fishermen families in 2010 and Tk. 43 lakh and Tk. 65 lakh for input assistance and training respectively. Under these projects, an amount of Tk. 34.75 lakh was expended to enforce the Fish Preservation Act in the last 2 years. Mass awareness has been created in various media through appropriate advertisements for preservation of 4 *hilsha* protection areas. At the initiative of the DoF, an integrated programme has been implemeted in participation of Bangladesh Navy, Bangaldesh Coast Guard and BFRI in order to ensure free reproduction and preservation of *hilsha* in a new area of Shariatpur district. As a result of implementation of these programmes for *jatka* preservation, protection area management, and preservation of free reprodcuction of *hilsha*, in FY 2010-11, *hilsha* production increased from 3.40 lakh MT as compared to 2.99 lakh MT in FY 2008-09.

Export of Fish and Fisheries Products

Fisheries sector earns a huge foreign exchange by exporting frozen shrimp and other fish and fisheries products to EU, USA, UK, Japan, France, Hongkong, Singapore, Saudi Arab, Sudan and other countries. In FY 2008-09 and FY 2009-10, Bangladesh earned to the tune of Tk. 3,274 crore and Tk. 3408 crore by exporting 0.73 lakh MT and 0.78 lakh MT of fish and fish products respectively. This earning increased to Tk. 4,604.00 crore in FY 2010-11 by exporting 0.96 lakh MT of fish and fish products. In FY 2011-12, Bangladesh earned Tk. 4,704.00 crore by exporting 0.92 lakh MT of fish and fish products. In order to increase fish production, *beel* nursery activities and release of fingerlings in open water bodies have been undertaken. On the other hand, in order to ensure the quality of the fish and fish products, Hazard Analysis and Critical Control Point (HACCP) and Traceability System are being strengthened.

Budget for Fisheries and Livestock Sector

In the revised budget of FY 2011-12, a total of Tk. 931.00 crore (Tk.515.00 crore from non-development budget and Tk.416.00 crore from development budget) was allocated for the Ministry of Fisheries and Livestock.

(A.1) ADP for Fisheries Sub-Sector

In the RADP of FY 2011-12, a total of Tk. 194.31 crore (GOB: Tk. 128.67 crore and Project Aid: Tk. 65.64 crore) was allocated for 28 on going development projects (24 investment projects and 4 TA projects). An amount of Tk. 195.72 crore (GOB: Tk. 126.17 crore, Project Aid: Tk. 68.95 crore) was utilised up to June 2012.

(A.2) ADP for Livestock Sub-sector

In the RADP of FY 2011-12, an amount of Tk.163.27 crore (GOB: Tk 78.34 crore; Project Aid:Tk. 84.93 crore) has been allocated for 17 development projects under the livestock sub-sector. The total expenditure up to June 2012 stood at Tk. 160.07 crore which was 99 percent of the total allocation.

(B) Programmes under Non- development Budget

In the revised budget of FY 2011-12, an amount of Tk. 25.87 crore was allocated for 11 approved programmes under the non-development budget for the Ministry of Fisheries and Livestock (MoFL). Up to June, 2012 an amount of Tk. 23.80 crore was utilized, which was 92 percent of the total allocation.

Livestock

The contribution of the livestock sub-sector to GDP at constant prices was 2.58 percent in FY 2010-11.The estimated contribution to GDP during FY 2011-12 from this sub-sector was 2.50 percent. Though the share of the livestock sub- sector in GDP is small, it has immense contribution towards meeting the daily protein (animal protein) requirements . A number of initiatives has been taken for livestock development. The most important ones include: production and distribution of vaccine for poultry and livestock, supply of duckling and chicks at a cheaper price, artificial insemination extension programme by using both diluted and frozen semen for improved variety, increased production of semen, artificial foetus transfer technology, prevention and control of anthrax, foot and mouth diseases and avian lnfluenza.

According to the estimate of the Department of Livestock Services, the population of livestock and poultry (projected) rose to 5 crore 28 lakh 36 thousand and 28 crore 85 lakh 66 thousand respectively in 2011-12. Table-7.8. shows the growth of the livestock and poultry population of the country over the past few years.

Table 7.8: Growth of Livestock and Poultry in Bangladesh.

(Number in Lakh)

Livestock/ Poultry	FY						
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Cattle Growth Rate (%)	228.0 -	228.7 0.31	229.0 0.13	229.76 0.33	230.51 0.33	231.21 0.30	231.95 0.32
Buffalo Growth Rate (%)	11.6 -	12.1 4.13	12.6 3.97	13.04 3.37	13.49 3.34	13.94 3.23	14.43 3.40
Goat Growth Rate (%)	199.4 -	207.5 3.90	215.6 3.76	224.01 3.75	232.75 3.76	241.49 3.62	251.16 3.85
Sheep	25.7	26.8	27.8	28.77	29.77	30.02	30.82
Growth Rate (%)	-	4.10	3.60	3.37	3.36	0.83	2.60
Total livestock	**464.7**	**475.1**	**485.0**	**495.58**	**506.52**	**516.66**	**528.36**
Growth Rate (%)	**-**	**2.19**	**2.04**	**2.13**	**2.16**	**1.96**	**2.21**
Chicken Growth Rate (%)	1948.2 -	2068.9 5.83	2124.7 2.63	2213.94 4.03	2280.35 2.91	2346.86 2.83	2428.66 3.37
Duck	381.7	390.8	398.4	412.34	426.77	441.20	457.00
Growth Rate (%)	-	2.33	1.91	3.38	3.38	3.27	3.46
Total Poultry	**2329.9**	**2459.7**	**2523.1**	**2626.28**	**2707.12**	**2788.06**	**2885.66**
Growth Rate (%)	**-**	**5.28**	**2.51**	**3.93**	**2.99**	**2.90**	**3.38**

Source: Department of Livestock Services, MoFL

The production statistics of milk, meat and eggs from FY 2005-06 to FY 2011-12 are summarized in the following table.

Table 7.9: Production of Milk, Meat and Eggs

Product	**Production**							
	Unit	**2005-06**	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**
Milk	Lakh tonnes	22.7	22.8	26.50	22.86	23.65	29.47	34.63
Meat	Lakh tonnes	11.3	10.4	10.40	10.84	12.64	19.86	23.32
Eggs	Lakh	54220	53690	56532	46920	57424	60785	73038.9

Source: Department of Livestock Services, MoFL

Artificial Insemination of Cattle

Artificial Insemination is an important and successful programme for livestock development. Semen is collected from the bulls reared in the Central Cattle Breeding Station at Savar, Dhaka and other Districts Artificial Insemination (AI) Centres, and processed as liquid and frozen semen to run the Artificial Insemination extension Programme. The number of inseminated cows stood at 26.91 lakh in FY 2011-12.

Legal Reforms and Infrastructural Development

To assure quality feed supply to livestock and poultry and to ensure food safety, a piece of legislation titled Fisheries and Livestock Feed Act, 2010 has been enacted. Similarly, to assure halal method and to prevent unscientific slaughter of animal, another piece of legislation titled Animal Slaughter Act, 2011 has also been enacted. Preparation of regulations under these two laws and framing of a law titled Bangladesh Zoo Act-2010 are in progress.

Veterinary Hospitals at all district headquarters and *Upazila* Livestock Development Centres (ULDC) at 464 *Upazila* headquarters have been established for the expansion of modern veterinary services to the farmers. Technical supports are provided to poultry and dairy farms through evaluation of animal and poultry feeds, besides the modern veterinary services. Training, disease diagnostic facilities, treatment facilities, disease control and prevention activities are provided from these centres.

Vaccination and Treatment

The Government has been producing 16 different types of livestock and poultry vaccines to immune livestock and poultry population to prevent diseases. In FY 2011-12, the number of vaccines produced was 14.00 crore and the number doses of vaccine administered were 16.64 cores (with previously stored vaccines). The number of livestock and poultry treated was 51.65 lakh and 405.51 lakh respectively, in FY 2011-12. Table 7.10 shows the yearwise important activities of the Department of Livestock Services.

Table 7.10: Important Livestock Activities

(Number in lakh)

Activities	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Semen production	15.96	17.83	18.10	20.00	22.70	24.42	34.29
Treatment	194.91	287.94	296.30	275.25	374.68	496.60	457.16
Vaccine production	2142	2869	2447	2065	2391	2410	1400.0
Training	7.14	8.13	7.28	8.00	8.78	9.81	9.52

Source: Department of Livestock Services, MoFL

Avian influenza/ Bird Flu

Outbreak of avian influenza/bird flu was identified first in 2007 at the Biman Poultry Complex at Savar, Dhaka. It is reported that a total of 18,48,660 poultry have been culled and 25,31,821 eggs have been destroyed up to June 2012. Starting from 2007, an amount of Tk. 24.97 crore has been distributed among farmers as compensation till June 2012. *Avian Influenza Preparedness and Response Project* and *Strengthening of Support Services for Combating Avian Influenza in Bangladesh Project* have been implementing programmes for controlling avian influenza in the country. Digital SMS gateway system are working effectively for encoding and decoding avian influenza attack messages promptly.

National Agricultural Technology Project (NATP)

To disseminate the livestock services from *upazila* headquarters to rural level, a project titled *National Agricultural Technology Project* is working to create Common Interest Group (CIG), Producer Organization (PO), Community Extension Agent for Livestock (CEAL) and Farmers Information and Advice Centre (FIAC). Upto June 2012, as many as 3840 CIGs have been formed and 1268 CEALs were selected for enforcing the rules for livestock development.

ICT for the Department of Livestock Services(DLS)

With a view to digitizing the activities of DLS , action has been taken to establish Management Information System (MIS) in DLS through a project titled *Enhance the Capacity of DLS* with the assistance of DANIDA. Apart from this, all computers in DLS have been brought under a local area network. One high powered Mbps Leased Internet connections for 80 computers has been made from BTCL. Extension of Web enable GIS (Geographical Information System) based MIS software development upto *upazila* level is in progress.