

CHAPTER 7

AGRICULTURE

[In Bangladesh, food security of the vast population is associated with the development of agriculture. Besides this, agriculture has a direct link to the issues like poverty alleviation, improved standard of living and employment generation. In order to ensure long-term food security for the people, a profitable, sustainable and environment-friendly agricultural system is critical. Broad agriculture sector and rural development sector have been given the highest priority in order to make Bangladesh self-sufficient in food. 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 (SFYP), Perspective Plan, National Agriculture Policy (NAP) and Millennium Development Goals (MDG). Over the last few years, there has been an increasing trend in food production. According to BBS, in FY 2013-14, the food grains production stood at around 381.73 lakh metric tons (MT) (Aus 23.26 lakh MT, Aman 130.23 lakh MT, Boro 190.06 lakh MT, Wheat 13.02 lakh MT, Maize 25.16 lakh MT). In the same fiscal year, the total internal procurement of food grains was 14.04 lakh MT, the total import of food grains through public and private sectors was 31.25 lakh MT (rice 3.75 lakh MT and wheat 27.50 lakh MT). An amount of Tk. 14,595.00 crore was targeted to be disbursed as agricultural credit against which Tk. 16,036.81 crore was disbursed till June 2014, which was 109.88 percent of the target. In order to scale up productivity, increased subsidy in agricultural inputs, increased availability of agricultural inputs, enhanced coverage and increased availability of agricultural credit have been ensured. 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. 9,000.00 crore was allocated in the revised budget of FY 2013-14 to provide subsidy on fertiliser and other agricultural inputs].

Agriculture is the key driver of the growth of Bangladesh economy. According to the provisional estimates of BBS, the contribution of agriculture sector to GDP stood at 12.65 percent in FY 2013-14. The overall contribution of the broad agriculture sector was 16.33 percent of GDP during the same period. The growth of broad service sector, particularly the growth of wholesale and retail trade, hotel and restaurants, transport and communication sector is substantially supported by the agriculture sector. Besides, agriculture sector absorbs around 47.30 percent of the total labour force of the country (LFS, 2010, BBS). In FY 2013-14, Bangladesh earned US\$ 899 million by exporting agricultural products which was 4.53 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.

Management of Agriculture

The avowed goals of the present Government is to achieve self-sufficiency in food. 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 has 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 soil as well as proper use of fertilizer and integrated pest management (IPM) for pest control. Saline tolerant and short duration crop variety and technology has been invented using nuclear technology and bio-technology and extended to the field. Saline tolerant crop varieties have extended the coverage of rice cultivation in the vast coastal areas of southern region. Cultivation of short duration (highest 110 days) 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 agricultural products and ensure sufficient storage facility of food grains. Implementation of various programmes are underway to increase food production by expanding the coverage of agricultural land and by creating the opportunities of multiple cropping line 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 farmers of small and medium land holding with crop price support in the event of crop failure due to natural disasters. 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 143.75 lakh farmer families of the country.

Food Grains Production

According to the BBS final estimate, the volume of food grains production in FY 2012-13 stood at 372.66 lakh MT of which *Aus* accounted for 21.58 lakh MT, *Aman* 128.97 lakh MT, *Boro* 187.78 lakh MT, wheat 12.55 lakh MT and maize 21.78 lakh MT. In FY 2013-14 food grains production stood 381.73 lakh MT of which *Aus* accounted for 23.26 lakh MT, *Aman* 130.23 lakh MT, *Boro* 190.06 lakh MT, wheat 13.02 lakh MT and maize 25.16 lakh MT. Table 7.1 shows the food grains production status during the period from FY 2006-07 to FY 2013-14:

Table 7.1: Food Grains Production

(In Lakh MT.)

Food Grains	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
<i>Aus</i>	15.12	22.93	21.00	22.18	21.33	23.32	21.58	23.26
<i>Aman</i>	108.41	110.06	122.25	126.60	127.91	127.98	128.97	130.23
<i>Boro</i>	149.65	186.77	182.87	185.25	186.17	187.59	187.78	190.06
Total Rice	273.18	319.76	326.12	334.03	335.41	338.89	338.33	343.55
Wheat	7.25	9.56	9.58	10.39	9.72	9.95	12.55	13.02
Maize*	8.99	23.61	11.37	13.70	15.52	19.54	21.78	25.16
Total	289.42	352.93	347.07	358.12	360.65	368.39	372.66	381.73

Source: Bangladesh Bureau of Statistics (BBS), Department of Agriculture Extension (DAE)

Food Budget

Internal Procurement of Food Grains

In FY 2012-13, the total target of internal procurement was 16.00 lakh MT (rice: 15.00 lakh MT and wheat: 1.00 lakh MT). The revised internal procurement target was 16.50 lakh MT (rice: 15.00 lakh MT and wheat: 1.50 lakh MT), against which as much as 14.05 lakh MT was procured (rice: 12.75 lakh MT and wheat: 1.31 lakh MT).

In FY 2013-14, the total target of internal procurement was 14.50 lakh MT (rice: 13.00 lakh MT and wheat: 1.50 lakh MT), against which as much as 14.04 lakh MT was procured (rice: 12.54 lakh MT and wheat: 1.50 lakh MT).

Food Grains Import

In FY 2012-13 the total import of food grains stood at 18.72 lakh MT (rice: 0.27 lakh MT, wheat: 18.45 lakh MT) of which the public import was 4.53 lakh MT (rice: 0.01 lakh MT, wheat: 4.52 lakh MT) and the private import was 14.19 lakh MT (rice: 0.25 lakh MT, wheat: 13.94 lakh MT).

In FY 2013-14, the public import of food grains was at 9.88 lakh MT (rice: 0.03 lakh MT, wheat: 9.85 lakh MT) and the private import of food grains was at 21.37 lakh MT (rice: 3.72 lakh MT, wheat: 17.65 lakh MT) and thus the total import of food grains stood at 31.25 lakh MT (rice: 3.75 lakh MT and wheat: 27.50 lakh MT).

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). Under this programme, food grains are distributed through monetised channel (OMS, Fair Price Card for small income groups, class IV employees and garment workers). On the other hand, food grains are also distributed through non-monetised channels or 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 2013-14, the total of distribution of food grains through different channels stood at 22.20 lakh MT (monetised channel 8.16 lakh MT and non-monetised channel 14.04 lakh MT) against the target of 25.58 lakh MT. This quantity of distribution was 6.37 percent higher than previous year's distribution (20.87 lakh MT).

Food Storage Capacity

In the FY 2013-14, public food storage capacity stood at around 19.25 lakh MT. Around 6.00 lakh MT new storage capacity is expected to be available by the next 5 years through the implementation of the ongoing and new development projects.

Seed Production and Distribution

Quality seed is the prime input to increased agricultural production. Crop production can be increased by ensuring supply of quality seeds to the farmers extensively. Bangladesh Agricultural Development Corporation (BADC) produces foundation seeds from breeder seed of cereal crops on its 24 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 at 73 contract growers' zones. In addition, 9 horticulture development centres and 13 agro service centres of BADC are producing and distributing the seedlings and other planting materials throughout the country. The number of farmers has been increased from 57,116 to 73,996 at 73 contract-growers zone in the whole country and the total surveyed land for this purpose stands at 68,846 hectares.

Taking into account the demand for quality seeds in Bangladesh, in FY 2013-14, BADC has produced 83,607 MT paddy seeds, 27,208 MT wheat seeds, 238 MT maize seeds, 22,568 MT potato seeds, 790 MT jute seeds, 2,353 MT pulse seeds, 1,782 MT oil seeds, 125 MT vegetable seeds and 108 MT spices with a total of 1,38,779 MT seeds. In the same fiscal year, the target of seeds distribution to the farmers was 1,29,545 MT. Achievement in terms of production and distribution of seeds through BADC's own farms and contract growers for the last three years are shown in Table 7.2 :

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

(In Metric Ton)

Name of the Seed	Achievement in FY 2011-12		Achievement in FY 2012-13		Achievement in FY 2013-14	
	Production	Distribution	Production	Distribution	Production	Distribution
Paddy	97710	91821	84650	85119	83607	78370
Wheat	28000	27304	18000	18853	27208	24996
Maize	1000	296	340	184	238	256
Potato	22000	20442	23118	19321	22568	21083
Pulses	1550	1426	1800	1699	2353	2036
Oil seed	1450	1092	1700	1469	1782	1579
Jute	1600	1589	1318	1094	790	1013
Vegetables	103	120	119	126	125	121
Spices	800	107	70	103	108	91
Total	154213	144197	131115	127968	138779	129545

Source: Ministry of Agriculture.

Fertiliser

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 fertilisers. It is, therefore, necessary to ensure timely supply of both organic and chemical fertilisers to meet the nutritional demand of these varieties. The use of chemical fertiliser 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 2012-13, the quantity of urea fertiliser used was 22.47 lakh MT. The total quantity of fertilisers used was 39.62 lakh MT in the same year. In FY 2013-14, the total quantity of fertiliser used was 44.75 lakh MT. The year wise use of fertilisers during the period from FY 2007-08 to FY 2013-14 is shown in Table 7.3:

Table 7.3: Use of Chemical Fertiliser

(In '000' metric ton)

FY	Name of Fertilizers										Total
	Urea	TSP	DAP	SSP	NPKS	MOP	AS	Gypsum	Zinc	Others	
2007-08	2762.00	392.00	129.00	118.000	120.00	262.00	7.00	75.00	20.00	0	3885.00
2008-09	2532.96	156.00	18.23	20.00	40.00	75.00	3.00	15.00	5.00	0	2864.23
2009-10	2409.00	420.00	136.00	0	50.00	263.00	5.00	20.00	10.00	0	3313.00
2010-11	2652.00	564.00	305.00	0	40.00	482.00	6.00	25.00	7.00	0	4081.00
2011-12	2296.00	678.00	409.00	0	20.00	613.00	6.00	15.00	12.00	0	4049.00
2012-13	2247.00	654.00	434.00	0	18.00	571.00	8.50	20.00	18.00	0	3970.50
2013-14	2462.00	685.00	543.00	0	27.00	577.00	2.70	173.00	4.29	1.79	4475.78

Source: FFMB/ Ministry of Agriculture.

Irrigation

It is possible to increase crop production through proper water management. Efforts have been continuing to ensure the use of underground 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 use of water. Through these projects, different demonstrations were carried out in *boro* season on Alternate Wetting and Drying (AWD) which received better responses from the farmer.

Programmes have been taken up to reserve and utilise surface water to reduce pressure on underground water keeping in view of 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. To provide irrigation facilities rubber dams are being used in small rivers and on the other hand to ensure collection of irrigation surcharge and optimum use of water, installation of smart card-based prepaid meters is under way.

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. From FY 2009-10 to FY 2012-13, BADC has implemented 19 irrigation projects and 136 irrigation programmes including 6 water logged removing programmes. Under the above programmes water logged of 16,728 hectare land has been removed by excavation of *khals*. Similar types of 8 water logged removing programmes have been implemented in FY 2013-14.

To control wastage of irrigation water flow appropriate irrigation technology such as surface and sub-surface irrigation channel has constructed for DTW and power driven pump. *Khal* and others water body is excavating for reserving surface water by different project and programme of BADC in order to implementation of minor irrigation technology. From FY2009-10 to FY 2012-13 excavation of 4,258 Km *khal*, construction of 3,150 irrigation structure, 2,044 Km surface channel, set up 578 Deep Tube well and 1,868 power pump, renovation of 605 deep tube well, electrification of 1,294 irrigation equipment and 1,252

smart card prepaid meter has set up. BADC has constructed 4 rubber dam for reserving surface water. These are *Haluaghat* upazilla of *Mymensingh* district, *Chatak* upazilla of *Sunamganj*, *Itchamati* River at *Rangunia* upazilla of *Chittagong* district and *Shilokkhal*. These rubber dams will provide irrigation facilities for 3,400 hectares land.

For the first time, in the FY 2012-13, renewable energy run solar power pump has been installed. By this time 11 solar pumps have been installed in different districts of the country. A project proposal to install solar power operated pump in different districts of the country is under consideration of government. BADC has prepared ground water zoning map able to saline water intrusion data bank.

Area under irrigation has been increasing over the years. In FY 2007-08, the irrigated area was 58.07 lakh hectares, which increased to 65.15 lakh hectares in FY 2012-13. In the FY 2013-14, irrigated area has been fixed to 61.63 lakh hectares. The irrigated land area during the period from FY 2007-08 to FY 2013-14 is shown in Table 7.4.

Table 7.4: Area Under Irrigation

(Area in lakh hectare)							
Irrigation method	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14 (Target)
a) Surface							
LLP& others	10.67	10.92	11.77	10.39	11.45	11.96	10.80
Deep tube well	7.86	7.90	7.73	7.19	7.59	9.34	8.45
Shallow tube well (surface/deep/very deep)	31.97	32.45	33.37	35.05	34.18	32.42	42.38
Total	50.50	51.27	52.87	52.63	53.22	53.72	61.63

Source: BBS, Ministry of Agriculture, Department of Agricultural Extension (DAE).

Barind Multipurpose Development Authority (BMDA) has expanded their activities all over the *Rajshahi* and *Rangpur* Divisions. The authority has provided irrigation to 6.90 lakh hectares of land through its 14,286 deep tube wells during *aus*, *aman* and *boro* seasons in FY 2013-14. To operate irrigation activities using the surface water the authority has re-excavated 1,319 KM *khas* canal as many as 2,944 *khas* ponds together with building 649 hydraulic structures in the canals. With these structures BMDA provides irrigation facilities to more than 87,000 hectares of land for supplementary irrigation and about 95,000 farmers have been benefited from this supplementary irrigation.

To increase the use of surface water for irrigation a system has been introduced for lifting water from the *Padma* River and transporting water to the canal (distance: 3.5 km) by pipe line at *Godagari* upazila of *Rajshahi* district. 2,000 hectares of land has brought under irrigation by using Low Lift Pumps (LLP). Moreover, 25 nos. of LLPs are being used for irrigation in *Padma*, *Atri* and *Mohananda* River. At Present a project is implementing where water will lift from *Padma* and *Mohananda* River for irrigation in *Charghat* and *Gomostapur* upazilas respectively.

Agricultural Credit

Agricultural and rural credits are important in the context of strengthening the efforts for ensuring food security as well as the overall socio-economic development in the country.

Banks and financial institutions are therefore continuing with their agricultural credit operations across the country. During FY 2009-10 and FY 2010-11, Extended Agricultural and rural Credit Policy and Programme has been formulated involving all scheduled banks with a view to speedy and easier disbursement of agricultural credit.

The Agricultural and Rural Credit Policy and Programme adopted in FY2013-14 while retaining the old features includes certain new features such as, enhanced the amount and widening the scope of agricultural credit through effective participation of all banks, financial inclusion, expanding banking services to rural areas, attracting farmers to banks, allowing concessional interest rate (4 percent) for the production of import substitute crops, making some maximum use of existing technology bearing in mind of the impact of climate change etc. These are expected to help augment agro-production and assist to alleviate rural poverty and improve the living standard in rural area through increased mobilisation of fund and creation of income generating activities.

During FY 2012-13 an amount of Tk.14,667.49 crore (about 103.80% of the set target) was disbursed against the target of Tk.14,130.00 crore through state-owned commercial banks, specialised banks, private commercial banks and foreign banks and BRDB. In FY 2013-14, an amount of Tk.16,036.81 crore was disbursed as agriculture and rural credit against the target of Tk.14,595.00 crore implying an achievement of 109.89 percent of the total target. Table-7.5 shows a summary of agricultural credit disbursement and recovery during the period from FY 2006-07 to FY 2013-14.

Table 7.5: Year-wise Disbursement and Recovery of Agricultural Credit

(In Crore Tk.)

Fiscal Year	Target	Disbursement	Recovery	Balance
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
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
2012-13	14130.00	14667.49	14362.29	31057.69
2013-14	14595.00	16036.81	17046.02	34632.82

Source: Bangladesh Bank.

Budget Allocation for Agriculture Sector

In FY 2013-14, the total budget allocation for the Ministry of Agriculture stood at Tk.12,285.42 crore (Tk.10,953.00 crore for non-development and Tk.1,332.41 crore for development). Considering the increase of agriculture production and to provide subsidy to the farmers for fertiliser and other programmes an amount of Tk.9,000.00 crore and Tk. 325.99 crore were allocated respectively. Besides, an amount of Tk.62.15 crore was allocated for agricultural rehabilitation assistance programs and Tk.61.60 crore was released.

Development Activities in Agriculture Sector

(A) Annual Development Programme (ADP)

In FY 2013-14, as many as 81 development projects were included in the RADP in crop and irrigation sub-sector. Of which, 74 were investment projects and the remaining 7 were technical assistance projects. The total allocation stood at Tk.1,335.91crore (GoB: 1,007.61 crore and project aid: Tk328.30 crore). An amount of Tk.1,324.51crore (GoB: Tk.1003.19 crore and project aid: Tk.321.32 crore) was utilised up to June 2014 which was about 98 percent of total RADP allocation.

(B) Programmes under Non-Development Budget

In the revised budget of FY 2013-14, an amount of Tk. 326.96 crore was allocated for 106 approved programmes under the non-development budget for the Ministry of Agriculture. Up to June, 2014 an amount of Tk.318.96 crore was utilised, which was 98 percent of the total allocation.

Renovation in Agriculture Sector

Ensuring the long term food security for population of the country 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, agricultural input and equipment innovation, procurement and management of agricultural input and equipment, seed production, storage and distribution, development of irrigation infrastructure, fertiliser management activities and crop storage etc. Some important activities are mentioned below:

- ‘National Agriculture Policy 2013’ has been formulated for overall development in agriculture sector;
- A comprehensive agricultural development plan titled ‘Master Plan for Agricultural Development in the Southern Region of Bangladesh’ for coastal region of the country has already been finalised;
- Establishment of Agricultural Policy Support Unit (APSU) is going on with a view to strengthen high level policy analysis capacity and to assist the ministry for policy planning by the technical assistant of International Food Policy Research Institute(IFPRI);
- A project titled ‘Integrated Agricultural Productivity Project (IAPP)’is going on with a view to develop crop, fish and livestock by introducing new varieties, new production technology, seed promotion and distribution, irrigation development etc. by the assistant of Global Agricultural and Food Programme Trust Fund;
- Special projects have been taken in crop agriculture sub-sector for fighting against the climate change risks. Presently, 8special projects are under implementation with the assistance of Climate Change Trust Fund in order to cope with the climate change effects;
- Strengtheningthe agriculture extension programmesto create rural employment through agriculturalproduction and transfer modern technology to farmer level;

- Enhancement of irrigation facilities to increase crop production through the construction of rubber dams in small and medium rivers;
- Establishment of Agriculture Information and Communication Centre (AICC) at union level;
- Promotion of agriculture and agriculture based services through the development of several online based activities such as Online Fertilizer Recommendation Software, Bangladesh Rice Knowledge Bank etc.
- Implementation of project on Genome Sequencing of Jute for selection of jute cultivation area and extension of Ribbon Rating Technology.

Fisheries Sector

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 taken up for implementation by the government. Important activities of this sector include: expansion and strengthening community based aquaculture, ensuring access of fishermen to the *khasjalmahals*, establishment of *beel* nursery, release of fish fries in the open water, extension of *gher*, pond and cage culture, habitat restoration through re-excavation of silted rivers and innovation of new technologies through research and extension. Directorate of Fisheries (DoF) imparts essential training to the fish/prawn/shrimp farmers and fishermen regularly as part of the human resource development programme. In addition, DoF provides support for socio-economic development of the poor fish farmers and fishermen of the country by educating them on open water fish management.

The total fish production in FY 2012-13 stood at 34.10 lakh MT, which increased to 35.55 lakh MT in FY 2013-14. Table-7.6 shows the trend of fish production during the period from FY 2007-08 to FY 2013-14:

Table 7.6: Fish Production Trends in Different Resources

(In Lakh MT)								
Sector	Area (Lakh ha)	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14 (Target)
1. Inland								
(a) Open Water								
(i) River & Estuaries	8.54	1.37	1.69	1.35	1.45	1.46	1.47	
(ii) Sundarban	1.78	0.18	0.20	0.18	0.22	0.22	0.16	
(iii) Beel	1.14	0.78	0.93	0.64	0.82	0.85	0.89	
(iv) Kaptai lake	0.69	0.08	0.09	0.07	0.09	0.09	0.09	
(v) Flood plain	27.11	8.19	6.17	7.51	7.97	6.96	7.01	
Sub-Total (Open Water)	39.25	10.60	9.08	9.75	10.55	9.57	9.61	9.69
(b) Culture								
(i) Pond	3.71	8.66	10.27	12.98	12.20	13.42	14.47	
(ii) Semi closed water bodies	1.22	--	--	--	0.51	1.82	2.01	
(iii) Baors	0.06	0.05	0.06	0.05	0.05	0.052	0.06	
(iv) Shrimp/Prawn farms	2.75	1.35	1.49	1.23	1.85	1.96	2.06	
Sub-Total (Culture)	7.74	10.06	11.82	14.26	14.60	17.26	18.60	19.79
Total (Inland)	46.99	20.66	20.90	24.02	25.15	26.83	28.21	29.48

Sector	Area (Lakh ha)	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14 (Target)
2. Marine Fisheries	0.48 sq. nautical mile							
(a) Industrial		0.34	0.48	0.45	0.42	0.73	0.73	0.75
(b) Artisanal		4.63	5.63	4.52	5.05	5.05	5.16	5.32
Total (Marine)	-	4.97	6.11	4.97	5.46	5.78	5.89	6.07
Country Total	-	25.63	27.01	28.99	30.62	32.62	34.10	35.55

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 fries/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 DoF developed infrastructure facilities in 32 government farms and raised brood stock to collect fries from the natural stock. This ensures the quality of fries/fingerlings. These brood fishes are distributed to private hatchery owners at a concessional price. At present, there are as many as 134 government hatcheries (fish seed multiplication farms) along with 887 private hatcheries.

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/ Fingerlings from Hatcheries

Year	No. of hatcheries		Spawn (MT.)			No. of fry/ fingerlings (crore)		
	Public	Private	Public	Private	Total	Public	Private	Total
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	113	860	6.24	457.29	463.53	2.03	622.13	624.16
2008	113	873	6.40	416.95	424.35	2.76	549.03	551.76
2009	115	880	4.52	458.18	462.70	1.67	960.01	961.68
2010	120	862	5.59	460.20	465.79	2.11	983.87	985.98
2011	125	845	6.84	617.64	624.48	2.12	818.21	820.33
2012	125	902	9.07	626.52	635.59	2.14	922.62	824.76
2013	134	887	9.04	450.07	459.11	1.35	900.15	901.50
2014 (Upto June)	136	887	6.25	325.00	331.25	0.28	530.00	530.28

Source: Department of Fisheries, Ministry of Fisheries and Livestock

Protection and Conservation Programme for Jatka

Jatka protection programme is observed for eight months from November to June every year. In order to ensure alternative employment for the *jatka* fishermen on a sustainable basis, DoF implemented a 6 year project titled *Jatka Preservation, Alternative Employment Generation and Research* in 51 *upazilas* of 12 districts adjacent to *Hilsha* protection areas. During 2009-2011, various trainings were imparted to generate alternative employment on a priority basis

for relatively poor *jatka* fishermen of the *upzilas* under its project. In order to provide alternative employment and to improve the socio-economic condition of the *Jatka* fishermen, an amount of Tk. 5.17 crore was disbursed to as many as 6,869 fishermen families in FY 2010-11 and Tk. 5.88 crore to 7,500 fishermen families in FY 2011-12 for input assistance and training. In FY 2012-13, a total of about 24.75 lakh MT (30 kg per month per household for 4 months) food grain was distributed to as many as 2,06,229 *jatka/hilsha* fishers family of 88 *upazilla* under 16 districts for not catching *Jatka* and for alternative income generation. An amount of Tk. 130.50 lakh was distributed to as many as 1,700 *jatka/hilsha* fisher's family.

In FY 2013-14, a total of about 35.85 lakh MT (40 kg per month per household for 4 months) food grain was distributed to as many as 2,24,102 *jatka/hilsha* fishers family of 81 *upazilla* under 15 districts for not catching *Jatka* and for alternative income generation. Besides, an amount of Tk. 116.50 lakh was distributed to as many as 1,165 *jatka/hilsha* fisher's family.

Mass awareness has been created through advertisements in media for preservation of *hilsha* in five protection areas. At the initiative of DoF, an integrated programme has been implemented in collaboration of Bangladesh Navy, Bangladesh Coast Guard and BFRI to ensure free reproduction and preservation of *hilsha*. As a result of implementation of these programmes for *jatka* preservation, protection area management, and preservation of free reproduction of *hilsha*, *hilsha* production increased 3.85 lakh MT in FY 2013-14, as compared to 2.99 lakh MT in FY 2008-09.

Export of Fish and Fisheries Products

Fisheries sector has a great success in earning foreign exchange. Bangladesh exports quality frozen shrimp and other fishes and fish products to EU, USA, UK, Japan, France, Hongkong, Singapore, Saudi Arabia, Sudan and other countries. In FY 2013-14, Bangladesh earned Tk. 4,898.22 crore by exporting 0.77 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 fish and fish products, the Hazard Analysis and Critical Control Point (HACCP) and Traceability System have been strengthened. This has brought success in terms of export of quality shrimp.

ADP for Fisheries Sector

In the RADP of FY 2013-14, a total of Tk. 217.61 crore (GOB: Tk. 93.31 crore and Project Aid: Tk. 60.06 crore) was allocated for 26 on-going development projects. An amount of Tk. 234.10 crore was utilised up to June 2014, which is 108 percent of the total allocation.

Programmes under Non-Development Budget

In the revised budget of FY 2013-14, an amount of Tk. 2.00 crore was allocated for 1 approved programme under the non-development budget for fisheries sub-sector. Up to June, 2014 an amount of Tk. 2.00 crore was utilised, which was 100 percent of the total allocation.

Livestock

The contribution of the animal farming sub-sector to GDP at constant prices was 1.84 percent in FY 2012-13. The contribution to GDP from this sub-sector is 1.78 percent in FY 2013-14. Though the share of the animal farming sub-sector in GDP is small, it makes a massive contribution towards meeting the requirements of daily essential animal protein. A number of initiatives have 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 fetus transfer technology, prevention and control of anthrax, foot and mouth diseases and avian influenza.

According to the estimate of the Department of Livestock Services (DLS), the population of livestock and poultry (projected) rose to 535.90 lakh and 3,041.72 lakh respectively in FY 2013-14. Table-7.8 shows the growth of the livestock and poultry population of the country over the past few years:

Table 7.8: Number of Livestock and Poultry in Bangladesh.

(In Lakh)							
Livestock/ Poultry	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Cattle	229.0	229.76	230.51	231.21	231.95	233.41	234.88
Goat	215.6	224.01	232.75	241.49	251.16	252.76	254.39
Sheep	27.8	28.77	29.77	30.02	30.82	31.43	32.06
Total livestock	485.0	495.58	506.52	516.66	528.36	532.11	535.90
Chicken	2124.7	2213.94	2280.35	2346.86	2428.66	2490.10	2553.11
Duck	398.4	412.34	426.77	441.20	457.00	472.53	488.61
Total Poultry	2523.1	2626.28	2707.12	2788.06	2885.66	2962.64	3041.72

Source: DLS & MoFL

The production of animal protein like milk, meat (beef, mutton, chicken) and eggs have been increasing over the past several years. As a result, per capita availability of animal protein is rising. The production statistics of milk, meat and eggs during the period from FY 2006-07 to FY 2013-14 are summarised in the Table 7.9.

Table 7.9: Production of Milk, Meat and Eggs

Product	Production								
	Unit	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Milk	Lakh tones	22.8	26.50	22.86	23.65	29.47	34.63	50.67	60.90
Meat	Lakh tones	10.4	10.40	10.84	12.64	19.86	23.32	36.20	45.20
Eggs	Lakh no.	53,690	56,532	46,920	57,424	60,785	73,038.9	76,173.80	1,01,680.0

Source: Department of Livestock Services, MoFL

Artificial Insemination of Cattle

Artificial Insemination is an important programme. Semen is collected from the bulls reared in the Central Cattle Breeding Station at Savar, Dhaka and other 22 District Artificial Insemination (AI) Centres and processed as liquid and frozen semen to run the Artificial Insemination Extension Programme. A total of 3,151 sub-centres and points are in operation to run the programme. The number of inseminated cows stood at 29.74 lakh in FY 2013-14.

Legal Reforms and Infrastructural Development

To assure quality feed supply to livestock and poultry and to assure *halal* method and to prevent unscientific slaughter of animal a piece of legislation titled 'Fisheries and Livestock Feed Act, 2010' and another piece of legislation titled 'Animal Slaughter and meat Quality Control Act, 2011' have been passed by the Parliament. Framing of regulations following these laws is in progress.

In existing veterinary hospitals at all district headquarters facilities have been providing for modern veterinary services and disease diagnostic services for poultry and livestock. To ensure balanced diet for poultry and livestock by analysing the animal and poultry feeds, technical supports are being provided to the Central Animal Nutrition Research Centre and the Animal Nutrition Research Centres in selected districts. Training and consulting services on poultry and dairy farming are also given with disease diagnostic and treatment facilities to the small poultry and dairy farmers at the *upazila* veterinary dispensary.

Most of the trained people establish poultry and dairy farms for self-employment. For this purpose, the total number of registered poultry farm increased to 77,935. At the end of June 2014, 18,221 layer farms, 53,105 broiler farms, 84 hatchery, 60,687 dairy farms, 3,834 goat farms and 3,472 sheep farms have been registered. Different infrastructures with old Upazila Livestock Development Center (ULDC) are being repaired and construction of new ULDC in different *upazilas* and establishment of hatchery in different government farms are in progress under the projects titled 'Upazila Livestock Development Center (ULDC) (3rd phase)' and 'Regional Duck Breeding Farms with Hatchery Establishment' and other projects.

Vaccination and Treatment

The Government has been producing 16 different types of livestock and poultry vaccines to immunise livestock and poultry population to prevent diseases. In FY 2013-14, the number of vaccines produced was 20.55 crore and the number of doses of vaccine administered was 17.70 crores. The number of livestock and poultry treated was 55.45 lakh and 571.42 lakh respectively, in FY 2013-14. Table 7.10 shows the yearwise major activities of the Department of Livestock Services (DLS).

Table 7.10: Major Activities of DLS

(Number in Lakh)

Activities	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Semen production	18.10	20.00	22.70	24.42	34.29	34.52	38.23
Treatment	296.30	275.25	374.68	496.60	457.16	564.44	626.87
Vaccine production	2447	2065	2391	2410	1400.0	1,774	2,055
Training	7.28	8.00	8.78	9.81	9.52	10.34	10.15

Source: Department of Livestock Services, MoFL

Avian Influenza/Bird Flu

The outbreak of avian influenza/bird flu was identified first on 22 March, 2007 at the Biman Poultry Complex at Savar, Dhaka. It is reported that a total of 27,14,703 poultry were

culled and 35,16,052 eggs were destroyed. Starting from 2007, an amount of Tk. 25.49 crore has been distributed among farmers as compensation till June 2014. Programmes for controlling avian influenza in the country are being implemented through two projects titled 'Avian Influenza Preparedness and Response and Strengthening of Support Services for Combating Avian Influenza in Bangladesh'. To diagnose Avian Influenza diseases and to ensure rapid action for remedies a web based SMS gateway system has been installed in DLS through which helps SMS received transmitted to take actions promptly. SMS gateway system plays an important role to control the disease.

National Agricultural Technology Project (NATP)

To disseminate the livestock services from *upazila* headquarters to rural level and extension of technologies as per farmer's requirement, a project titled *National Agricultural Technology* is being implemented in villages to create Common Interest Group (CIG), Producer Organization (PO), and Community Extension Agent for Livestock (CEAL) and to strengthen organisational capacity of livestock department at *upazila* level. Farmers Information and Advice Centre (FIAC) is also being set up to provide support for preparation of extension micro plans and their implementation at union level and to provide service of the medium level farmers at grassroots level. As many as 3,892 CIGs have been formed and 1,280 CEALs have been selected initiative under this project.

Development of ICT

With a view to making DLS IT enable, a Management Information System (MIS) has been established in DLS and a total of 470 internet connection has been given to exchange information quickly between the headquarter and field offices. Local Area Network (LAN) has been established in DLS. All computers in DLS have been brought under this LAN. One high powered Mbps internet connection for 80 computers has been taken on lease from BTCL. Apart from this, extension of Web-enable Geographical Information System (GIS) based MIS software development up to *upazilla* level is in progress.

Mitigating Climatic Effect on Livestock Production

The production system of whole world is being affected by climate change. Particularly, production capacity of livestock is directly affected due to high temperature stress arising from global warming and there are outbreaks of new diseases. The pastureland is reducing because of rising sea level. Formation of rules and regulations is going on to create pastureland in new rising lands in coastal areas or in government *khas* lands on co-operatives basis.

Annual Development Programme (ADP)

In the RADP of FY 2013-14, an amount of Tk. 121.06 crore (GoB: Tk 87.73 crore; Project Aid: Tk. 33.33 crore) has been allocated for 15 development projects under the livestock sub-sector. The total expenditure up to June, 2014 stood at Tk. 115.53 crore (GoB: Tk 85.92 crore; Project Aid: Tk. 29.61 crore) which was 95 percent of the total RADP allocation.