

CHAPTER 7 AGRICULTURE

Bangladesh is predominantly an agricultural country where agriculture sector plays a vital role in accelerating the economic growth. It is therefore important to have a profitable, sustainable and environment-friendly agricultural system in order to ensure long-term food security for people. Broad agriculture sector has been given the highest priority in order to make Bangladesh self-sufficient in food. The Government determined to develop the overall agriculture sector keeping in view of the goals set out in the Seventh Five Year Plan and National Agriculture Policy. Over the last few years, there has been an increasing trend in food production. According to preliminary estimate of BBS, in FY2016-17, food grains production stood at around 388.14 lakh metric tonnes (MT). In the same fiscal year, the total internal procurement of food grains was 13.83 lakh MT, total import of food grains through public and private sectors was 58.23 lakh MT (rice 1.33 lakh MT and wheat 56.90 lakh MT). In addition, an amount of Tk.17,550 crore was targeted to be disbursed as agricultural credit against which Tk.20,998 crore was disbursed till June 2017, which was 120 percent of the target. In order to scale up productivity, subsidy in agricultural inputs was increased, as well as enhanced coverage and increased availability of agricultural credit was ensured. Programmes have been launched to popularise the use of organic and balanced fertiliser to maintain soil fertility and productivity. Considering the importance of increased productivity of agricultural products, an amount of Tk.6,000 crore was allocated in the revised budget of FY2016-17 to provide subsidy on fertiliser and other agricultural inputs.

Agriculture sector plays an important role in overall economic development of Bangladesh. The agricultural sector (crops, animal farming, forests and fishing) contributes 14.74 percent to the country's GDP, provides employment about 41 percent of the labour force according to Quarterly Labour Force Survey 2015-16. Moreover, agriculture is the source of wide range of consumer demanded agricultural commodity markets, especially in rural areas.

Management of Agriculture

Achieving the target of self-sufficiency in food is one of avowed goals of the present Government. To attain this goal the Government has placed highest importance on the overall development of agriculture

sector. With a view to developing the agriculture sector, the Government has taken a number of steps. These include 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 fertiliser and Integrated Pest Management (IPM) for pest control. Saline tolerant and short duration crop variety and technology have been invented using nuclear

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technology and bio-technology. Saline tolerant crop varieties have extended the coverage of rice cultivation in the vast coastal areas of southern region.

Steps have been taken to scale up subsidy on agricultural inputs, ensure fair price and supply of agricultural inputs. Moreover, expansion of irrigation facilities and increased availability of irrigation instrument, agriculture extension as per target, quality control of agricultural products and ensuring sufficient storage facility of food grains have been scaled up. 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.

Food Grains Production

According to the final estimate of BBS, the volume of food grains production in FY2015-16 stood at 388.17 lakh MT of which *Aus* accounted for 22.89 lakh MT, *Aman* 134.83 lakh MT, *Boro* 189.38 lakh MT, wheat 13.48 lakh MT and maize 27.59 lakh MT. In FY2016-17 food grains production stood at 388.14 lakh MT of which *Aus* accounted for 21.33 lakh MT, *Aman* 136.56 lakh MT, *Boro* 180.24 lakh MT, wheat 14.23 lakh MT and maize 35.78 lakh MT. Table 7.1 shows the food grains production status during the period from FY2008-09 to FY2016-17.

Table 7.1: Food Grains Production

	(In lakh MT.)								
Food Grains	2008-09*	2009-10*	2010-11**	2011-12**	2012-13**	2013-14**	2014-15**	2015-16**	2016-17**
<i>Aus</i>	21.00	22.18	21.33	23.33	21.58	23.26	23.28	22.89	21.33
<i>Aman</i>	122.25	126.60	127.91	127.98	128.97	130.23	131.90	134.83	136.56
<i>Boro</i>	182.87	185.25	186.17	187.59	187.78	190.07	191.92	189.38	180.24***
Total Rice	326.12	334.03	335.41	338.90	338.33	343.56	347.10	347.10	338.13
Wheat	9.58	10.39	9.72	9.95	12.55	13.02	13.48	13.48	14.23***
Maize*	11.37	13.70	15.52	19.54	21.78	25.16	23.61	27.59*	35.78
Total	347.07	358.12	360.65	368.39	372.66	381.74	384.20	388.17	388.14

Source: Bangladesh Bureau of Statistics (BBS),*DAE, **DAE & BBS. *** To be harmonised.

Food Budget

Internal Procurement of Food Grains

In FY2016-17, the revised internal food grain procurement target was 20.50 lakh MT (rice: 18.50 lakh MT and wheat: 2.00 lakh MT). Against this target, as much as 13.83 lakh MT

was procured (rice: 12.83 lakh MT and wheat: 1.00 lakh MT).

Food Grains Import

In FY2016-17 the food grains import through Government was 4.00 lakh MT. Of which the budget 3.93 lakh MT was wheat. On the other hand, in private sector a total of 54.30 lakh

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MT(Manifest) food grain (rice: 1.33 lakh MT, wheat:52.97 lakh MT) was imported during the same period.

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 FY2016-17, the Government had a plan to distribute 23.66 lakh MT food through different channels. The actual distribution was 22.41 lakh MT (monetised channel 14.04 lakh MT and non-monetised channel 8.37 lakh MT) what was 8.58 percent higher than previous year's food distribution (20.64 lakh MT).

Food Grain Storage Capacity

Up to June 2017, public food storage capacity stood at around 20.23 lakh MT (the effective food grain storage capacity was 18.77 lakh MT).

Food Safety

In order to ensure contaminant free and food safety for the people, the Government has started implementing the 'Food Safety Act, 2013' from the 1 of February, 2015.

Eventually, 'Bangladesh Food Safety Authority' was activated on the 2 February, 2015. Along with the inception of the implementation of the 'Food Safety Act, 2013', the Government has also taken steps to raise people's awareness of food safety and about the fundamental concepts of the law. The Government has also taken efforts to increase the capabilities of the key organisations and concerned people so that the law is implemented properly. 'Bangladesh Food Safety Authority' will ensure a smooth collaboration among all the organisations that are concerned with food safety management. The authority will be responsible for the overall monitoring of safe food following farm to fork approach, viz. production, processing, storage and marketing of food and food stuffs. It will also be responsible for establishing good practices and updating methodologies for risk analysis in the food chain.

Seed Production and Distribution

Quality seed is the prime input to increased agricultural production. Quality seed alone can contribute to the increase of yield by 15-20 percent. At present, quality seed for different crops is being provided from public sectors as per demand. A number seed producing organisations and NGOs are implementing quality seed distribution activities of hybrid rice, maize and vegetables. Some part of seed is produced, preserved and used privately specially at farmer's level. 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

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farms and pulse and oil seeds on 3 farms. Besides, certified seeds of rice, wheat, maize, jute, vegetables, spices, potato and pulse and oil seeds are also being multiplied at 75 contract growers' zones. Furthermore, 9 horticulture development centers and 14 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 to 91,487 at 75 contract-growers zone in the whole country

and the total surveyed land for this purpose stands at 1,95,847 hectares.

Taking into account the demand for quality seeds in Bangladesh, in FY2016-17, the target of seeds distribution to the farmers set by BADC was 1.30 lakh MT. Up to June 2017, achievement in seed distribution was 1.26 lakh MT. The production and distribution of seeds through BADC's own farms and contract growers 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 2014-15		Achievement in FY 2015-16		Achievement in FY 2016-17	
	Production	Distribution	Production	Distribution	Production	Distribution
Paddy	82423	84901	80874	74558	81798	81508
Wheat	28177	27208	16533	20667	18110	14861
Maize	213	238	5	571	16	5
Potato	25179	22568	26315	25134	32627	25441
Pulses	1726	2353	2358	1323	2180	1488
Oil seed	1421	1782	1792	1300	1264	1462
Jute	1044	1044	880	724	775	710
Vegetables	123	115	107	83	85	65
Spices	109	108	105	80	106	100
Total	140414	140317	128969	124440	136961	125640

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. Therefore, it is 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 fertiliser alone was the highest. In FY2016-17, the total quantity of fertiliser used was 49.06 lakh MT. The year wise use of fertilisers during the period from FY2007-08 to FY2016-17 is shown in Table 7.3.

Table 7.3: Use of Chemical Fertiliser

(In '000' metric ton)

FY	Name of Fertilisers										Total
	Urea	TSP	DAP	SSP	NPKS	MOP	AS	Gypsun	Zinc	Others	
2007-08	2762.00	392.00	129.00	118.000	120.00	262.00	7.00	75.00	20.00	0	3886.00
2008-09	2532.96	156.00	18.23	20.00	40.00	75.00	3.00	15.00	5.00	0	2865.19
2009-10	2409.00	420.00	136.00	0	50.00	263.00	5.00	20.00	10.00	0	3310.00
2010-11	2652.00	564.00	305.00	0	40.00	482.00	6.00	25.00	7.00	0	4117.00
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	25.00	571.00	8.50	40.00	24.00	19.0	4022.50
2013-14	2462.00	685.00	543.00	0	27.00	577.00	0.10	126.00	42.00	40.00	4502.10
2014-15	2638.00	722.00	597.00	0	27.00	640.00	6.22	122.00	39.00	39.00	4791.22
2015-16	2291.00	730.00	658.00	0	39.59	727.00	9.96	229.42	53.43	0.00	4738.40
2016-17*	2366.00	740.00	609.00	0	20.00	781.00	10.00	323.30	57.47	0	4906.77

Source: FFM, Ministry of Agriculture.*Provisional figure.

Irrigation

A vast area of the country does not get irrigation in dry season because of climate change and unplanned lifting up of underground water. So, a well-planned irrigation system is necessary for increasing cropping intensity, yield as well as production. Government has attached more importance on reducing irrigation cost and retains balance of environment by increasing use of surface water and reducing use of underground water. Although the major part of minor irrigation is under private ownership, it is the duty of the Government to establish efficient irrigation system such as sustainable irrigation facilities at low cost. The Government implements different activities through efficient minor irrigation system. Rubber dam project has been taken in small and medium rivers of prospective areas for using surface water. Removal of water logged, re-excavation of canal, construction of surface irrigation channel and underground irrigation channel, embankment, irrigation

structure, installation of power pump, Deep Tube Well (DTW), construction of *Jhiribadh* in hilly areas and installation of artisan well are being implemented.

Data of every moment is being collected by 201 auto water level recorders automatically which installed by BADC. Data monitoring and analysis of underground water is being made possible by preparing digital data bank. By this time, Groundwater Zoning Map has been prepared using those data and updating it from time to time.

Furthermore, irrigation charge can easily be collected by setting and using smart card prepaid meter. Thus, farmers are able to use optimum irrigation timely. Renewal energy such as solar operated pump has been installed by BADC. So far 11 solar pumps have been installed in different districts of the country. Other districts are being considered to install solar operated irrigation pump.

In the FY2016-17, 12 irrigation projects and 11 irrigation programmes were implemented by BADC. By those irrigation projects and

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programmes BADC expanded 29,900 hectre irrigation area, re-excavation of 276.33 km canal, construction of 488 irrigation structures, 637 km irrigation channel, construction of 2 rubber dam, construction of 2 hydraulic elevator dams, electrification of

425 irrigation equipment and setting of 203 smart card prepaid meters were completed in June 2017. The irrigated land area during the period from FY2009-10 to FY2016-17 is shown in Table 7.4.

Table 7.4: Area under Irrigation

(Area in lakh hectare)

Irrigation method	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 *
LLP& others	11.77	10.39	11.45	11.96	12.46	12.51	12.86	22.59
Deep tube well	7.73	7.19	7.59	9.34	8.78	9.62	9.08	9.59
Shallow tube well (surface/deep/very deep)	33.37	35.05	34.18	32.42	32.78	32.35	33.18	33.92
Total	52.17	52.63	53.22	53.72	54.02	54.48	55.12	66.10

Source: BBS, Ministry of Agriculture,* DAE.

Barind Multipurpose Development Authority (BMDA) has expanded irrigation in all the districts of *Rajshahi* and *Rangpur* divisions. During FY2016-17, BMDA has irrigated about 6.19 lakh hector of land in *Aus*, *Aman* and *Boro* season through 15,517 deep tube wells. To use the surface water for irrigation, the authority has re-excavated 3,078 *khas* ponds, 6 *deghees* and restoration of 1,838.77 km. *khas* canal/*khari* and 726 water conservation structures (cross dams) have been constructed over the canal to preserve the water in the cannel. As a result, more than 90 thousand hectare of land has brought under supplementary irrigation and about 1.13 lakh farmers are benefited.

To increase the use of surface water for irrigation the authority has introduced a system by which water is lifted from the *Padma*, *Mohanonda* and *Atrai* river and transported to the cannel through Buried pipe line. About 18,000 hectares of land has brought under irrigation by using 221 Low

Lift Pumps (LLP) beside the cannel, river and other water bodies.

Jute Crop Production

Global awareness about environment friendly jute fiber as a natural fiber is increasing to protect the environment. The Government is enacted ‘Compulsory Use of Jute Fiber Packaging Act 2010’ and ‘Rules for Compulsory Use of Jute Fiber Packaging 2013’. According to this rule, jute fiber packaging is compulsory for 17 items. As a result demand of jute fiber is increasing in home and abroad. Production of jute is also increasing. The market price of raw jute in the recent years might be played key role in growing interest of farmers to increase area and production. The production was about 91.72 lakh bale from an area of 8.17 lakh hectare in FY2016-17 which is the highest record after liberation in respect of production and cultivated land area.

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Agricultural Credit

Agriculture of Bangladesh is vital at the subsistence level which makes agricultural and rural credit is significant in ensuring food security. Extended Agricultural and Rural Credit Policy and Programme have been formulated by Bangladesh Bank to ensure agricultural and rural credit disbursement easier and hassle free. The agricultural and rural credit programme is being formulated in

order to speed up the agricultural credit in the marginal level.

In FY2016-17, Tk.20,998.70 crore (119.65 percent of target) has been disbursed as agriculture and rural credit against target of Tk.17,550.00 crore through schedule banks. Table 7.5 shows a summary of agricultural credit disbursement and recovery during the period from FY2007-08 to FY2016-17.

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

(In crore Tk.)

Fiscal Year	Target	Disbursement	Recovery	Balance
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
2014-15	15550.00	15978.46	15406.96	32936.80
2015-16	16,400.00	17646.39	17056.43	34477.37
2016-17	17550.00	20998.70	18841.16	39047.57

Source: Bangladesh Bank.

Renovation in Agriculture Sector

Ensuring the long term food security for population of the country the Ministry of Agriculture has been implementing different development projects/programmes in the field of 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, extension of irrigation facilities, fertiliser management activities, farm

mechanisation and crop storage etc. Some important activities are mentioned below:

- Implementing projects in *Haor* areas to increase crop intensity;
- Establishment of Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN) to reduce nutritional problems, develop skilled human resources and create employment;
- Ensuring nutrition security through year round fruits production;
- Implementing projects to reduce pressure on ground water and enhancing ground water level through recharge wells;

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- Implementing projects on irrigation and conservation of rain water in the *Barind* Region in order to increase crop production and promoting minor irrigation facilities through solar energy driven dug wells;
- Raising awareness among farmers and personnel involved with agricultural activities on the proper utilisation of arable land, fertiliser and other agricultural inputs;
- Invention of flood, drought, salinity and high temperature tolerant crop varieties to cope with climate change effect;
- Introduction of crop zoning technology;
- Enhancement of extension activities to promote modern cultivation method at the farmer's level;
- Enhancement of irrigation facilities to increase crop production through the construction of rubber dams in small and medium rivers;
- Implementing projects on the marketing of agricultural products and development of rural communication to ensure fair price of agricultural products;
- Implementing projects on farm mechanisation technology to increase crop production and minimise the seasonal labor crisis;
- Providing subsidy to farmers in purchasing agriculture equipment's to promote farm mechanisation;
- Ensuring supply of quality seed to farmers through establishment of seed cold storage at proper time;
- Establishment of seed multiplication farm in the south west region of the country to ensure quality seed supply;
- Modernisation of seed production, processing and distribution system to ensure quality seed supply to farmers;
- Implementing projects to transform the barren land into arable land through the expansion of irrigation facilities;
- Establishment of Community Rural Radio to share information on modern agricultural practices among rural farmers community;
- 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 Fertiliser Recommendation Software, Bangladesh Rice Knowledge Bank etc.
- Establishment of a call center at the head office of Agriculture Information Service (AIS);
- Introduction of internet facilities to all marketing offices at district level and publication of market prices and other information at the website www.dam.gov.bd;
- Promotion of agriculture and agriculture based services through mobile operators;
- Implementing projects to reduce the import dependency of sugar and molasses;
- Ensuring proper use of surface water through modern irrigation technologies;
- Implementing projects on research and extension activities to increase cotton production;

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- Implementing project for the establishment of Post-Entry Quarantine Centre;
- Promotion of organic pest control method and organic agriculture activities;
- Implementing a project on Genome Sequencing of Jute for selection of jute cultivation area and extension of Ribbon Rating Technology;
- Promoting participation of women in agricultural sector to alleviate poverty and create employment opportunities;
- Introduction of Buried Pipe, Pre-Paid Meter and Energy Measuring Technology to improve irrigation activities;
- Expansion of Post-Harvest Management ;
- Human Resource Development through scholarships (PhD, MS, Short Course, etc.)

Fisheries Sector

Fish Production

Bangladesh is blessed with vast water resources with a wide range of aquatic diversity. In FY2016-17 fishing sector contributes 3.61 percent to the GDP and 24.43 percent to the country's total agricultural products. A considerable part of the country's export earning comes from this sector. Fish alone supplements about 60 percent of animal protein in our daily diet. The main target of fisheries sector is to

increase supply of animal protein through boosting of fish production. To achieve this target the Government has been initiating and implementing different programmes. Major activities are expansion and strengthening of community based fish culture programmes, ensure the entry of fishermen in the public water bodies, implementing *beel* nursery programmes and fry releasing programmes in the open water, establishment of fish sanctuary, expansion of *gher* and cage culture programmes, restoration of fish habitat by excavating filled rivers, innovation of new technology by research and expansion of these technology in the field etc. For the human resource development Department of Fisheries (DoF) arranges different training programmes for fish and shrimp farmers and also for the fishermen regularly. Besides, DoF has been implementing open water fisheries resources management programmes for the economic and social development of the poorest fish farmers and fishermen. According to FAO statistics 2016, Bangladesh is ranked 5th in world aquaculture production.

The total fish production in FY2015-16 stood at 38.78 lakh MT which is expected to reach up to 40.50 lakh MT in FY2016-17. Table-7.6 shows the trend of fish production during the period from FY2009-10 to FY2016-17.

Table 7.6: Fish Production Trends in Different Resources

(In lakh metric ton)

Sector	Area (Lakh ha)	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (Target)
1. Inland									
(a) Open Water									
(i) River & Estuaries	8.54	1.82	1.45	1.46	1.47	1.67	1.75	1.78	1.82
(ii) Sundarban	1.78	0.18	0.22	0.22	0.22	0.18	0.18	0.17	0.17
(iii) Beel	1.14	0.64	0.82	0.85	0.89	0.89	0.93	0.95	0.98
(iv) Kaptai lake	0.69	0.07	0.09	0.08	0.09	0.08	0.09	0.10	0.10
(v) Flood plain	26.93	7.51	7.97	6.96	6.86	7.13	7.30	7.48	7.69
Sub-Total (Open Water)	39.08	9.75	10.55	9.57	9.61	9.96	10.25	10.48	10.76
(b) Culture									
(i) Pond	3.77	11.39	12.20	13.92	14.79	15.26	16.13	17.20	18.34
(ii) Baors	0.055	0.09	0.512	0.052	0.06	0.07	0.07	0.08	0.08
(iii) Seasonal cultured water bodies	1.33	0.46	0.049	1.32	1.39	1.93	2.01	2.08	2.16
(iv) Shrimp /Prawn farms	2.76	1.56	1.85	1.96	2.04	2.16	2.23	2.40	2.48
(iv) Pen culture	0.083	-	-	-	-	0.13	0.13	0.13	0.13
(iv) Cage culture	0.001	-	-	-	-	0.01	0.02	0.02	0.02
Sub-Total (Culture)	8.745	14.26	14.60	17.26	18.60	19.57	20.60	22.04	23.35
Total (Inland)	47.82	24.02	25.15	26.83	28.81	29.53	30.85	32.52	34.11
2. Marine Fisheries	0.48 sq. nautical mile								
(a) Industrial		0.34	0.41	0.73	0.73	0.77	0.85	1.05	1.48
(b) Artisanal		4.83	5.05	5.05	5.16	5.18	5.15	5.21	5.31
Total (Marine)	-	5.17	5.46	5.78	5.89	5.95	6.00	6.26	6.39
Country Total	47.82	28.99	30.62	32.62	34.10	35.48	36.85	38.78	40.50

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

Production of Fish Spawn and Fish Fry

The main pre-requisite to increase fish production is the availability of quality fish seed. The production and collection of spawn from natural sources is decreasing due to environmental changes and man-made obstacles such as construction of unplanned flood dams, irresponsible use of insecticides in the crop fields, pollution of water etc. Several steps were taken by the Government for the restoration of the natural breeding habitats. Inbreeding is the major problem for fish seed production in the hatchery. To overcome this problem, DoF developed

infrastructure facilities in 32 government farms and raised brood stock thereby collecting fries from the natural sources and rearing these fries properly to make as a quality broods. These brood fishes are distributed to private hatchery owners in a concession price. To ensure the supply of quality fish seed, at present there are 138 government Fish Seed Multiplication Farm (FSMF), 950 private fish hatcheries throughout the country. The production statistics of carp spawn and fingerlings 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
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	549.04	551.80
2009	115	880	4.52	458.18	462.70	1.66	960.01	961.67
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	822.62	824.76
2013	134	887	9.04	450.07	459.11	1.45	900.15	901.50
2014	136	893	9.87	492.47	502.34	4.28	1028.33	1032.61
2015	138	907	10.39	531.05	541.45	2.49	797.31	799.80
2016	137	857	7.93	387.85	395.78	2.49	797.31	799.80
2017 (Up to June)	138	950	8.10	467.74	475.84	0.75	414.23	414.98

Source: Department of Fisheries, Ministry of Fisheries and Livestock

Protection and Conservation Programme for *Jatka*

The Government is taking several timely and realistic programmes to ensure the sustainable increasing trend of *Hilsa* production. As a result of combined implementation of these programmes *Hilsa* production is in increasing trend for the last seven years, which is recognised at national and international level. Following programmes have been implemented by the Government to conserve and to develop the *Hilsa* resources:

- Implementation of Vulnerable Group Feeding (VGF) programme to prevent fishermen from starvation during *jatka* conservation period of November to June.
- Distribution of alternative income generating resources to the extreme poor fishermen who are abstained from *jatka* fishing.
- Arranging awareness raising programmes to prevent indiscriminate *jatka* fishing as

well as implementation of fish conservation act.

- Arranging awareness building and fish act implementation programme to stop *Hilsa* fishing, marketing and carrying for 15 days during the peak spawning season to protect *Hilsa* brood.
- Observing *Jatka* Conservation Week every year to create social movement for protection *jatka* fish.

Along with these activities to prevent poor fishermen from *jatka* fishing a seven year project named 'Jatka Conservation, Alternative Income Generation for the Jatka Fishers and Research' has been implemented by the Government. For the alternative income generation, the fishermen abstained from *jatka* fishing, a total of 32,509 *Jatka* fishermen family were provided materials like rickshaw, van, cow, goat, poultry, sewing machine, cage culture equipment, fishing net and small business support etc. amounting to Tk.27.00 crore. Moreover, 32,509 *jatka*

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fishermen were trained to improve their skill and to make them aware. Besides these activities, VGF programme has been implemented to prevent fishermen from starvation during *jatka* conservation period. In FY2016-17, 38,187.68 MT rice grain were distributed for four months, 40 kg. per months for each families among 2,38,673 fishermen families of 85 *upazilas* of 17 districts.

In addition to awareness building programmes, implementation of fish conservation act has been strengthened to conserve brood *Hilsa* during the peak spawning period and to ensure smooth spawning and to prevent *jatka* fishing at growing stage. With the participation of district administration, Police, Navy, Coast Guard, Rapid Action Battalion and Border Guard Bangladesh combined joint operation and mobile court has been implemented to conserve this national resource. Due to implementation of *jatka* conservation programme, management of fish sanctuary and implementation of *Hilsa* spawning protection activities, *Hilsa* production reached 3.95 lakh MT during FY2015-16. It is expected that it will be increased up to 5.00 lakh MT in FY2016-17.

Management of Marine Fisheries Resources

Bangladesh has its vast marine water resources. Despite the abundance of marine waters, about 16 percent of country's total fish production is contributed from the marine sector. Considering the importance of marine fisheries resources and the balance of biodiversity of the Bay of Bengal the government has already come to a decision to declare "Saint Martin Island" as a national

sanctuary. Besides, a huge area of mangrove forest, *Sundarban* about 6,017 square kilometer area in the south of greater Khulna region is also decided to be declared as a sanctuary for better mangrove management, increase fisheries resources and to conserve the biodiversity of the world's largest mangrove forest *Sundarban*. Gracefully Bangladesh won the maritime boundary of 1,18,813 square km by the International Tribunal for the Law of the Seas (ITLOS) that provides an equitable manner and rights in fishing over the area. It opened a new horizon of finding new fishing grounds for demersal and pelagic fishes in our sea area.

A modern survey and research vessel '*R.V. Meen Shandhani*' was procured from Malaysia to conduct research and survey in the Bay of Bengal for stock assessment, determine the Maximum Sustainable Yield (MSY) identifying fishing grounds etc. A Technical Cooperation Project 'Technical Support for Stock Assessment of Marine Fisheries Resources in Bangladesh' funded by FAO is being implemented in marine stock assessment by '*R.V. Meen Shandhani*'. The vessel has first started with trial cruise for shrimp and demersal stock and thereafter completes surveys. Up to June 2017 four surveys including two shrimp surveys and two demersal surveys have been done. 176 different fishes and crustaceans, 13 shrimps and 14 different kinds of species were found through those surveys. An area of 698 sqkm near the Middle Ground and South Patches of the Bay of Bengal has been declared as a "marine reserve" for conservation and development of marine resources. By this time the Government experimentally

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provided 118 Fiber Re-enforced Plastic (FRP) boats to the coastal fishers with the lifesaving equipment to fish in coastal area. To catch tuna and tuna like fishes in the EEZ beyond 200 meters depth and in international water notice published in different national and local newspapers offering licenses for deep sea fishing by long-liner and purse-seiner vessel. Accordingly 9 applications lodged for long-liner and 7 for purse-seiner fishing licenses and those are under process of assessment.

Export of Fish and Fisheries Products

Bangladesh exports quality frozen shrimp and other fishes and fish products. Major destinations of Bangladeshi fishery products are EU countries along with USA, UK, Japan, France, Hong Kong, Singapore, Saudi Arabia and other countries. Remarkable success has been achieved in exporting quality shrimp through proper implementation of National Residue Monitoring Programme (NRCP), credible laboratory testing services and Hazard Analysis and Critical Control Point (HACCP) in processing establishments. Implementation of Good Aquaculture Practice (GAP) at the farm level is the prime effort triggering the production of high quality primary products compliant to the requirements of EU countries as well as international communities. In FY2016-17, Bangladesh earned Tk.4,287.64 crore by exporting 0.68 lakh MT of fish and fish products.

Livestock

The contribution of the animal farming sub-sector to GDP is 1.60 percent in FY2016-17. Though the share of the animal farming sub-sector in GDP is small, it makes immense contribution towards meeting the requirements of daily essential animal protein for human consumption, reduction of poverty, cultivation of land, production and exports of leather and leather goods. A number of initiatives have been taken for livestock development. The most important ones include: breed up gradation through artificial insemination using superior quality frozen and liquid semen, production and distribution of vaccine for poultry and livestock, supply of duckling and chicks at a cheaper price, 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 rose to 547.45 lakh and 3,292.00 lakh respectively in FY2016-17. Table 7.8 shows the livestock and poultry population of the country over the past few years.

Table 7.8: Number of Livestock and Poultry Population in Bangladesh.

(Number in Lakh)

Livestock/ Poultry	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Cattle	230.51	231.21	231.95	233.41	234.88	236.36	237.85	239.35
Buffalo	13.49	13.94	14.43	14.50	14.57	14.64	14.71	14.78
Goat	232.75	241.49	251.16	252.76	254.39	256.02	257.66	259.31
Sheep	29.77	30.02	30.82	31.43	32.06	32.70	33.35	34.01
Total livestock	506.52	516.66	528.36	532.11	535.90	539.72	543.57	647.45
Chicken	2280.35	2346.86	2428.66	2490.10	2553.11	2617.70	2683.93	2751.83
Duck	426.77	441.20	457.00	472.53	488.61	505.22	522.40	540.16
Total Poultry	2707.12	2788.06	2885.66	2962.64	3041.72	3122.93	3206.33	3292.00

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 FY2008-09 to FY2016-17 are summarised in the Table 7.9.

Table 7.9: Production of Milk, Meat and Eggs

Product	Production									
	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Milk	Lakh tones	22.86	23.65	29.47	34.63	50.67	60.90	69.69	72.75	92.83
Meat	Lakh tones	10.84	12.64	19.86	23.32	36.20	45.20	58.62	61.25	71.54
Eggs	Lakh	46920	57424	60785	73039	76173	101680	109952	119124	149331

Source: DLS, MoFL

Artificial Insemination of Cattle

Artificial Insemination is an important and successful programme. Semen is collected from the bulls reared in the Central Cattle Breeding Station at *Savar, Dhaka*, Regional Cattle Breeding Station, *Rajshahi* and other 13 District Artificial Insemination (AI) Centres and processed as liquid and frozen semen to run the Artificial Insemination Extension Programme. A total of 3,750 sub-centres and points are in operation to run the programme. In FY2016-17, the number of semen production and inseminated cows are 41.84 lakh doses and 36.68 lakh respectively.

Vaccination and Treatment

The Government has been producing 17 different types of livestock and poultry vaccines to immune livestock and poultry population to prevent diseases. In FY2016-17, 2,537.33 lakh doses of vaccines were produced (161.92 lakh doses for livestock and 2,375.41 lakh doses for poultry). The number of doses of vaccine administered for livestock and poultry was 169.82 lakh and 2,385.62 lakh respectively. About 207.84 lakh livestock and 1,189.53 lakh poultry were provided treatment in FY2016-17 through veterinary services.

To strengthening vaccine production activities 'Vaccine production technology

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modernisation and expansion of research work' project is going on. Moreover, to prevent trans-boundary diseases 24 animal quarantine stations are working at different

river port, land port and airport. Table 7.10 shows the year wise major activities of the 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	2014-15	2015-16	2016-17
Semen production	18.10	20.00	22.70	24.42	34.29	34.52	38.23	37.19	41.50	41.84
Treatment	296.30	275.25	374.68	496.60	457.16	564.44	626.87	775.00	909.20	1397.37
Vaccine production	2447	2065	2391	2410	1400.0	1774	2055	1914	2363.89	2537.33
Training	7.28	8.00	8.78	9.81	9.52	10.34	10.15	11.04	12.65	14.37

Source: DLS, MoFL

Legal Reforms and Infrastructural Development

To assure quality feed supply to livestock and poultry and to make relentless efforts towards food safety, the Government has approved the 'Fisheries and Livestock Feed Act, 2010'. Similarly, to assure *halal* method and to prevent unscientific slaughter of animal, the Government has approved the 'Animal Slaughter Act, 2011 and Animal Feed Rules, 2013'.

64 District Veterinary Hospital, 491 *Upazila* Livestock Development Center (ULDC) and 10 Metro Thana Livestock Offices have been established for the expansion of modern veterinary services to the farmers. Besides the modern veterinary services, training, disease diagnostic facilities, treatment facilities, artificial insemination, disease control and prevention activities are provided from these centers. Moreover, 22 mini diagnostic laboratories were established at greater districts for providing technical supports to poultry and dairy farmers through analysis of animal and poultry feeds and disease

diagnosis. For providing one stop service to the farmers, 63 new ULDC building were established and 22 ULDC building construction is going on through '*Upazila* Livestock Development Center Establishment' project. On the other hand, 12 new duck hatchery was established and 2 duck hatchery construction is going on through '*Regional Duck Breeding Farms Establishment (Duck Hatchery)*' project.

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, 2017; 18,698 layer farms, 53,985 broiler farms, 7,705 duck farms, 207 hatchery, 16 grandparent stock farm, 156 feed mill, 58,423 dairy farms, 3,917 goat farms and 3,632 sheep farms have been registered.

Export of Meat and Livestock Products

Livestock sector has been earning foreign currency by exporting meat and livestock products to USA, UAE, China, Kuwait, Canada, Japan and Maldives. In FY2016-17, 139.88 MT meat, 12.11 MT bull stick, 3,154

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MT bone chips, 18.67 MT tail hair of cattle, 9.62 MT curd and *roshmalai* and 11,664 pieces cattle bone toy were exported from Bangladesh which earned about Tk.21 crore.

Budget Allocation for Agriculture Sector

In FY2016-17, the total revised budget allocation for agricultural sector (Ministry of Agricultural, Ministry of Livestock and Fisheries and Ministry of Food) stood at Tk.17,920.00 crore (Tk.14,829.00 crore for non-development and Tk.3,091.00 crore for development).

Considering the increase of agriculture production and to provide subsidy to the farmers for fertiliser and other agriculture inputs an amount of Tk. 6,000.00 crore was allocated in revised budget. Furthermore, an amount of Tk.75.00 crore was allocated for agricultural rehabilitation assistance programmes. Moreover, the Government has declared a policy to provide 20 percent cash incentives on exporting agriculture products. The Government has also been allowing 20 percent rebate on electricity bills for agro-based industries.