

AGRICULTURE

As a first step of graduation from developing to developed country ensuring food security, necessity of sustainable and environment-friendly agricultural system is imperative. To make Bangladesh food sufficient agriculture sector has been given highest priority. The government is trying sincerely for developing agriculture sector in consideration with 7th five-year plan, National Agriculture Policy and SDG. As per vision 2021, sufficiency in food was targeted by 2013. Despite population growth, various steps were taken by present pro people government to make Bangladesh food sufficient before estimated time. According to preliminary estimate of BBS in FY2018-19, the target of food grains production is around 415.74 lakh metric tonnes (MT.) which was 413.25 lakh MT. in FY2017-18. In FY2018-19, the total internal procurement target of food grains production is 21.81 lakh MT. Up to February 2019 of FY2018-19, the target of food grains import through government was 7.28 lakh MT. But the food grain import through private sector is 35.66 lakh MT. (rice 0.85 lakh MT. and wheat 34.81 lakh MT). In current FY, Tk.12,101.04 crore agricultural loan has been disbursed whereas the target is 21,800.00 which is 55.51 percent of total estimated target. In order to scale up productivity, subsidy in agricultural inputs is increased, as well as enhanced coverage and increased availability of agricultural credit is ensured. Considering the significance of increased productivity of agricultural products, an amount of Tk.9000 crore was allocated in budget of FY2018-19 to provide subsidy on fertiliser and other agricultural inputs. In FY2017-18 fish production was 42.77 from internal water resource & sea whereas the target for FY2018-19 is 43.81 lakh MT. In FY2018-19, (up to February) 99.31 lakh doses of livestock vaccine and 14.87 crore doses of poultry vaccines were produced.

The role of agriculture is impeccable to create opportunity of jobs for large population by increasing productivity and growth. The agriculture sector (crops, fisheries, livestock and forests) contributes a lot to the country's GDP, provides employment for nearly half of the labour force and supplies raw materials to the agro-based industries. Agriculture is a special field of social activity which is closely related to important issues like ensuring food and nutrition of people, creating scope of income and poverty alleviation. In addition, agriculture is the source of wide variety of consumer demanded agricultural commodity markets, especially in rural areas. Therefore,

development of agriculture and growth is essential to reduce rural poverty.

Management of Agriculture

Bangladesh has done remarkable progress in agriculture sector. Bangladesh is now an unique epitome in food grain production inspite of decreasing arable land, population growth, flood, drought, salinity induced by climate change and adverse climate. Bangladesh is moving forward leaving the world average production behind.

Achieving the target of self-sufficiency in food is one of the avowed goals of the government. To attain this goal, the government has placed highest importance on

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the overall development of agriculture sector. With a view to develop 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 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 programs are underway to increase food production by expanding the coverage of agricultural land and by creating the opportunities of multiple cropping, expansion of line of irrigation by using ground water in various regions of the country, reduction of water logging and planned drainage of water in haor areas. National Agriculture Policy-2013 has been formulated for rapid growth of economic prosperity of huge population, higher growth of rural areas, agricultural development and development of non-agricultural activities related to rural agriculture.

Food Grains Production

According to the final estimate of BBS, Ministry of Agriculture and Department of Agriculture Extension (DAE), the volume of food grains production in FY2017-18 stood at 413.25 lakh MT. of which Aman accounted for 139.94 lakh MT, Boro 195.76 lakh MT and wheat 11.53 lakh MT. In FY2018-19 The food grains production was (Aus 27.02 and Maize 38.28) lakh MT, which was (Aus 27.09 and Maize 38.93) lakh MT. in FY2017-18. Table 7.1 shows the food grains production status during the period from FY2011-12 to FY2018-19.

Table 7.1: Food Grains Production

Food Grains	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19*
Aus	23.33	21.58	23.26	23.28	22.89	21.34	27.09	27.02
Aman	127.98	128.97	130.23	131.90	134.83	136.56	139.94	141.34*
Boro	187.59	187.78	190.07	191.92	189.38	180.16	195.76	196.23*
Total Rice	338.90	338.33	343.56	347.10	347.10	338.06	362.79	364.59*
Wheat	9.95	12.55	13.02	13.48	13.48	13.12	11.53	12.87*
Maize	19.54	21.78	25.16	23.61	27.59	35.78	38.93	38.28
Total	368.39	372.66	381.74	384.19	388.17	386.96	413.25	415.74*

Source: Bangladesh Bureau of Statistics (BBS), Ministry of Agriculture.* provisional figure.

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Food Budget

Internal Procurement of Food Grains

In FY2017-18, the internal food grain procurement target was 15.47 lakh MT. (14.47 lakh MT. rice and 1.00 lakh MT. wheat). Out of this targeted amount, 14.35 lakh MT. rice was domestically procured from Boro and Aman but no wheat was procured in the last season. In the current FY2018-19, the internal food grain procurement target has been set at 21.81 lakh MT (21.31 lakh MT. rice and 0.50 lakh MT. wheat). Against this target, 16.13 lakh MT. rice has been procured from Boro and Aman until 28 February 2019.

Food Grains Import

In FY2018-19 (up to February), the target of food grains import through government was 7.28 lakh MT. Out of this targeted amount total food grains import is 2.67 lakh MT. (of which rice 0.56 lakh MT). On the other hand, in private sector, a total of 35.66 lakh MT. food grains (rice 0.85 lakh MT, wheat 34.81 lakh MT.) was imported during the same period.

Public Food Distribution

The government provides food support to the fixed-income government employees and low-income people through different channels of Public Food Distribution System (PFDS). Under this program, food grains are distributed through monetised channel that includes subsidized distribution program such as-Open Market Sale (OMS), Fair Price Card (FPC), Essential Priority (EP), Food for Work (FFW), Test Relief (TR), Vulnerable Group Feeding (VGF), Vulnerable Group

Development (VGD), Gratuitous Relief (GR) and others.

In the current FY2018-19, the government food grains distribution budget has been revised and set at 28.38 lakh MT. Against this budget, until February 2019, total actual distribution was 15.54 lakh MT. where 8.87 lakh MT. was in monetised channel (like EP, OP, LE, OMS, Fair Price card, Freedom Fighter etc.) and 6.67 lakh MT. in non-monetised channel (such as FFW, TR, VGF, VGD and others).

Food Grain Storage Capacity

The total capacity of godowns and silos in the country, was 21.48 lakh MT. in February 2019 of FY2018-19, which was 21.18 lakh MT. in the same time of FY2017-18.

Food Safety

Following the 'Food Safety Act-2013', the government of Bangladesh has established Bangladesh Food Safety Authority (BFSA) which is in effect since February 2015 with a view to ensuring safe food for the people of the country. 2nd February in each year has been declared as National Food Safety Day and this day is being observed as National Food Safety Day since 2018. Along with the inception of the implementation of the 'Food Safety Act-2013', the government has also taken steps to increase people's awareness on food safety and on 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.

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The authority is responsible for the overall monitoring of safe food following farm to fork approach, production, processing, storage and marketing of food and food stuff.

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 sector as per demand. A number of seed-producing organisations and NGOs are implementing quality seed distribution activities of hybrid rice, maize and vegetables. Bangladesh Agricultural Development Corporation (BADC) produces foundation seeds from breeder seed of cereal crops in its 24 farms, jute seeds in 2 farms,

vegetable seeds in 2 farms, potato seeds in 2 farms and pulse and oil seeds in 4 farms, 2 vegetable seed production farms and 111 contract growers zone. Likewise, BADC produces and supplies different crop sampling, graft and gooties through 9 Horticulture Development Centers and 14 Agro Service Centers. At present number of farmers are 3,98,327 under the 111 contract-grower's zones throughout the country and the area of land is 7,41,640.42 acre.

Taking into account the demand for quality seeds in Bangladesh, the target of seeds distribution to the farmers set by BADC was 1.40 lakh MT. in FY2018-19. Seed production and distribution by BADC in the FY2016-17 to FY2018-19 are shown in the table 7.2:

Table 7.2: Seed Production and Distribution

(In metrictonnes)

Name of the Seed	Achievement in FY2016-17		Achievement in FY2017-18		Achievement in FY2018-19*	
	Production	Distribution	Production	Distribution	Production	Distribution
Rice	86368	82038	85548	87668	89498	87022
Wheat	18161	16575	17527	18177	15028	18077
Maize	13	5	20	5	111	10
Potato	32627	25352	33043	31321	35510	31246
Pulses	2315	1699	2435	1888	2476	1888
Oil	775	1567	1195	1023	1245	1023
Jute	834	722	723	223	437	236
Vegetables	87	80	45	73	102	73
Spices	117	105	106	105	205	106
Total	141297	128143	140642	140483	144875	140561

Source: Ministry of Agriculture. * Up to February 2019.

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 leads to an increased 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 increasing with the increased demand for food production in the country. The use of urea fertiliser alone is the highest in the agriculture of the country. In FY2017-18, the total quantity of fertiliser used was 50.93 lakh MT, of which the use of Urea fertiliser is

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24.27 lakh MT. In FY2018-19, the total quantity of fertiliser will be used at around 55.75 lakh MT. The year wise use of

fertilisers during the period from FY2011-12 to FY2018-19 is shown in Table 7.3.

Table 7.3: Use of Chemical Fertiliser

(In '000' metric ton)

FY	Name of Fertiliser										Total
	Urea	TSP	DAP	SSP	NPKS	MOP	AS	Gypsum	Zinc	Others	
2011-12	2296.00	678.00	409.00	0	20.00	613.00	6.00	15.00	12.00	0.00	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	3.00	126.00	42.00	0.40	4465.40
2014-15	2638.00	722.00	597.00	0	27.00	640.00	6.22	122.00	39.00	0.00	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	40.00	781.00	10.00	323.30	57.47	0.00	4926.77
2017-18	2427.46	706.62	689.90	0	50.00	789.47	10.00	250.00	80.00	90.00	5093.45
2018-19*	2550.00	700.00	900.00	0	50.00	850.00	0.00	305.00	100.00	120.00	5575.00

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

Irrigation

It is possible to increase crop production through proper water management. Government has given more importance on reducing irrigation cost and maintaining environmental harmony by increasing use of surface water and reducing use of underground water. Rubber dam and Hydraulic Elevator Dam project has been taken in small and medium rivers of prospective areas for using surface water. Removal of water logging, 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. A total of 201 Auto water level recorders have been installed by BADC. Data of every moment is being collected Auto Water Level recorders automatically. 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 on a regular basis. Where and which type of irrigation equipment is required throughout the country can easily be determined by this Ground water Zoning Map. Furthermore, irrigation charge can easily be collected by setting and using smart card/prepaid meter. This has enabled the farmers to irrigate in optimum and timely manner. Renewable energy such as solar operated pump has been installed by BADC. So far 57 solar pumps have been installed in different districts of the country. Other districts are being considered to install solar operated irrigation pumps.

In FY2018-19, 16 irrigation projects and 12 irrigation programs are being implemented. By those irrigation projects and programs BADC re-excavated 450 km. khal, constructed 400 irrigation infrastructures, 3 rubber dams, 2 hydraulic elevator dams, 557 km. underground water irrigation channel, 8 km. surface irrigation channel, installed 10

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deep tube-wells, 250 power pumps, install 10 smart card based prepaid meter and 110 solar operated irrigation pumps which will be completed by June 2019.

The irrigated land area during the period from FY2012-13 to FY2018-19 is shown in Table 7.4.

Table 7.4: Area under Irrigation

(Area in lakh hectare)

Irrigation method	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19 (Target)*
LLP& others	11.96	12.46	12.51	13.42	13.88	12.20	12.25
Deep tube well	9.34	8.77	9.62	11.94	10.63	10.72	11.10
Shallow tube well (surface/deep/very deep)	32.42	32.79	32.35	29.54	30.79	29.81	29.90
Others	-	-	-	-	1.97	2.81	2.95
Total	53.72	54.02	54.48	54.90	55.27	55.56	56.20

Source: BBS, DAE, Ministry of Agriculture. * provisional figure.

Barind Multipurpose Development Authority (BMDA) has expanded irrigation in all the districts of Rajshahi and Rangpur divisions. About 5.20 lakh hectares of land has been brought under irrigation in Aus, Aman and Boro season by using 16,036 nos. of deep tubewells. To use surface water for irrigation, the authority has re-excavated 3,098 khas ponds, 1,991 km. canal and 749 cross-dam have been constructed over the canal to preserve the water in the channel. As a result, 96,500 hectares of land has been brought under supplementary irrigation. 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 channel through Buried pipe line. About 15,000 hectares of land has been brought under irrigation by using 519 Low Lift Pumps (LLP) beside the channel, 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 has

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 at home and abroad. Production and demand of jute is also increasing. The market price of raw jute in the recent years might play key role in growing interest of farmers to increase area and production. Subsequently the production will reach around 74.40 lakh bale from an area of 6.51 lakh hectare in FY2018-19.

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. Extended Agricultural and Rural Credit Policy and Program have been formulated by Bangladesh Bank to make disbursement of agricultural and rural credit easier and hassle free. In FY2017-18, Tk.21,393.55 crore (104.87%) has been disbursed as agricultural and rural credit against target of Tk.20,400.00 crore through all the scheduled commercial and specialised banks. In the current FY2018-

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19 up to January 2019 Tk.12,101.04 crore (55.51%) has been disbursed as agricultural and rural credit against the target of Tk.21,800.00 crore. Table 7.5 shows a

summary of agricultural credit disbursement and recovery during the period from FY2011-12 to FY2018-19.

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

(In crore Tk.)

Fiscal Year	Target	Disbursement	Recovery	Balance
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
2017-18	20400.00	21393.55	21503.12	40601.11
2018-19*	21800.00	12101.04	13305.50	40305.75

Source: Bangladesh Bank * up to January 2019.

Development projects/program

Ministry of Agriculture has been implementing different development projects/programs in the field of agricultural research and education, agricultural extension, 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 mechanization and crop storage etc. Some important reform activities are mentioned below:

- Implementing projects in Haor areas to increase cropping intensity.
- Implementing projects to reduce pressure on ground water and enhancing ground water level through recharge wells.
- Implementing projects on irrigation and conservation of rain water in the Barind Region in order to increase crop production and promote minor irrigation facilities through solar energy driven dug wells.
- Agriculture research organisations have invented flood, drought, salinity and high temperature tolerant crop varieties to cope with climate change effect.
- Introduction of crop zoning technology.
- 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.
- 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 in proper time.
- Establishment of seed multiplication farm in the south west region of the country to ensure quality seed supply.
- Establishment of Community Rural Radio to share information on modern agricultural practices among rural farmers community.

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- 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).
- Promotion of agriculture and agriculture-based services through mobile operators.
- 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.
- Extension and popularisation of cultivation of vegetables and spices on floating bed in water logging area.
- Promoting participation of women in agricultural sector to alleviate poverty and create employment opportunities.

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 programs have been taken up for implementation by the government. Important activities of this sub sector include: expansion and strengthening community-based agriculture, ensuring access of fisherman 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. Fisheries sector contributes 3.61 percent to national GDP (Gross Domestic Product) and around one-fourth (25.30%) to the agricultural GDP. Fish and fisheries products contribute 1.39 percent to total export earnings. Bangladesh achieved self-sufficiency in fish production with a per capita fish consumption of 62.58g/day against set target of 60g/day according to FAO report.

The State of World Fisheries and Aquaculture 2018, Bangladesh ranked 3rd in inland open water capture production and 5th in world aquaculture production. Currently Bangladesh ranks 4th in tilapia production in the world and 3rd in Asia. If this growth of fish production continues, the fish production in the country is expected to be 45.52 lakh MT. by FY2020-21.

Table-7.6 shows the trend of fish production during the period from FY2011-12 to FY2018-19.

Table 7.6: Fish Production Trends in Different Resources

(In lakh metric tonnes)

Sector	Area (Lakh ha)	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19* (Projected)
1. Inland									
(a) Capture									
(i) River & Estuaries	8.54	1.46	1.47	1.67	1.75	1.78	2.72	3.21	3.32
(ii) Sundarban	1.78	0.22	0.16	0.19	0.18	0.17	0.18	0.18	0.18
(iii) Beel	1.14	0.85	0.89	0.89	0.93	0.95	0.98	0.99	1.00
(iv) Kaptai lake	0.69	0.09	0.09	0.08	0.08	0.10	0.10	0.10	0.10
(v) Flood plain	26.93	6.96	6.86	7.13	7.30	7.48	7.66	7.69	7.69
Sub-Total (Open Water)	39.08	9.60	9.61	10.0	10.24	10.5	11.64	12.17	12.29
(b) Culture									
(i) Pond	3.77	13.42	14.47	15.26	16.13	17.20	18.33	19.00	19.72
(ii) Baors	0.055	0.05	0.06	0.07	0.07	2.08	0.08	0.08	0.08
(iii) Seasonal cultured water bodies	1.33	1.82	2.01	1.93	2.01	0.08	2.16	2.16	2.17
(iv) Shrimp/Prawn farms	2.756	1.96	2.06	2.17	2.24	2.40	2.47	2.54	2.64
(v) Pen culture	0.833	-	-	0.13	0.13	0.13	0.13	0.11	0.11
(vi) Cage culture	0.001	-	-	0.01	0.02	0.02	0.02	0.04	0.04
(vii) Crab						0.13	0.14	0.12	0.12
Sub-Total (Culture)	8.745	17.25	18.60	19.57	20.60	22.04	23.33	24.05	24.88
Total (Inland)	47.825	26.83	28.21	29.53	30.84	32.52	34.97	36.22	37.17
2. Marine Fisheries									
(a) Industrial		0.74	0.73	0.77	0.85	1.05	1.08	1.2	1.22
(b) Artisanal		5.05	5.16	5.18	5.15	5.21	5.29	5.35	5.42
Total (Marine)	-	5.79	5.89	5.95	6.00	6.26	6.37	6.55	6.64
Country Total	47.825	32.62	34.10	35.48	36.84	38.78	41.34	42.77	43.81

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

Production of Fish Spawn and Fish Fry

In boosting fish production, availability of quality fish seed is pre-requisite. The production and collection of spawn from natural sources is decreasing due to environmental changes and man-made obstacles. Several steps were taken by the government for the restoration of the natural breeding habitats. The availability of quality fish fry is quite difficult due to inbreeding problem in hatcheries. To overcome this problem, DoF developed infrastructure

facilities and raised brood stock, thereby collecting fries from the natural sources and rearing these fries properly to make them quality broods. These brood fishes are distributed to private hatchery owners at a concessional price. To ensure the supply of quality fish seed, at present there are 143 governments Fish Seed Multiplication Farm (FSMF), 985 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
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	477.34	459.11	1.35	900.15	901.50
2014	136	893	9.87	492.47	502.34	2.34	1028.33	1032.61
2015	136	857	10.46	705.19	715.65	2.59	828.02	830.61
2016	137	899	11.18	668.20	679.38	2.78	828.47	831.25
2017	138	872	12.49	670.09	682.58	2.52	879.12	881.64
2018	143	985	12.06	767.16	779.22	2.77	822.36	825.13

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

Conservation Program for Jatka

The government is taking several timely and realistic programs to ensure the sustainable increasing trend of Hilsa production. As a result of combined implementation of these programs, Hilsa production is in increasing trend for the last few years, which is recognized at national and international level. The programs have been implemented by the government to conserve and to develop the Hilsa resources are as follows:

- Implementation of Vulnerable Group Feeding (VGF) program 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.
- Apart from increasing public awareness to stop jatka fishing, ‘The Jatka Protection Act’ is strictly implemented from November to June.
- Arranging awareness building and fish act implementation program to stop Hilsa fishing, marketing and carrying for 22 days during the peak spawning season to protect Hilsa brood.

- Observing Jatka Conservation Week every year to create social movement for protection jatka fish.

In order to protect jatka and ensure of its desired growth, 6 Hilsha sanctuaries has been designated. In breeding season of Hilsha, joint operations and mobile courts have been implemented with the help of various organisation for 22 days ban period. Apart from this, Special Combing Operation are being carried out to seize the illegal fishing net. Up to February 2019, about 424 mobile courts and 1,235 operations were executed in 11 districts. Through ‘Special Combing Operation’ 1,883 Behundi nets, 88.916 lakh meter current nets and 1,749 other types of nets were confiscated. Apart from taking all these measures, government has increased the amount of VGF to support the fishermen of coastal areas under the social safety net program. In the fiscal year 2018-19, a total of 39,787.84 MT. food assistance will be provided to 2,48,678 Jatka catching families for 4 months from February to May 2019. VGF food assistance were provided to 3,95,709 families at the rate of 20 Kg per

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family. In FY2017-18, the total production of Hilsa was 5.17 MT.

Management of Marine Fisheries Resources

Bangladesh is one of the leading fish producing country in the world. Bangladesh won the maritime boundary of 1,18,813 sq. km. by the International Tribunal for the Law of the Seas (ITLOS). Ministry of Fisheries and Livestock has already taken different Pragmatic initiatives like framing short term, mid-term and long term 'Action plans' to ensure conservation, sustainable development and harnessing the potentials of the marine resources. Bangladesh is considered a pilot country in implementing Blue Economy concept.

Export of Fish and Fisheries Products

Fish and fishery products are one of the major export commodities of Bangladesh. Fisheries sector has achieved tremendous success in achieving foreign exchange. 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. Hazard Analysis & Critical Control Point (HACCP) system has been ensured at every level of production of fish and fishery products. To ensure traceability of exported fish and fishery products, 2,07,000 shrimp farms and 9,651 commercial fish farms have been already registered. Bangladesh achieves, noteworthy advancement in exporting fish and fishery products through training of farmers on Good

Aquaculture Practice, implementation of National Residue Control Plan (NRCP) and rules and regulation, modernization of Fish quality control laboratories, etc.

In FY2017-18, Bangladesh earned Tk.4309.9 crore by exporting 0.68 lakh MT. of fish and fish products. In the current FY2018-19 (up to February), Bangladesh earned Tk.2757.8 crore by exporting 0.46 lakh MT. of fish and fish products.

Livestock

The contribution of the animal farming sector to GDP at constant price is 1.53 percent and in agricultural sector the contribution to GDP from this sector was 13.46 percent in FY2017-18. 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. A number of initiatives have been taken by the government 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 liquid and frozen semen for developing the number of variety, prevention and control of anthrax, foot and mouth diseases and avian influenza.

The number of livestock and poultry rose to 554.02 lakh and 3,440.22 lakh respectively in FY2018-19 up to February 2019. 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	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19*
Cattle	231.95	233.41	234.88	236.36	237.85	239.35	240.86	241.87
Buffalo	14.43	14.50	14.57	14.64	14.71	14.78	14.85	14.90
Goat	251.16	252.76	254.39	256.02	257.66	259.31	261.00	262.11
Sheep	30.82	31.43	32.06	32.70	33.35	34.01	34.68	35.14
Total livestock	528.36	532.11	535.90	539.72	543.57	647.45	551.39	554.02
Chicken	2428.66	2490.10	2553.11	2617.70	2683.93	2751.83	2821.45	2869.03
Duck	457.00	472.53	488.61	505.22	522.40	540.16	558.53	571.19
Total Poultry	2885.66	2962.64	3041.72	3122.93	3206.33	3292.00	3379.98	3440.22

Source: DLS, MoFL, *Up to February 2019.

The production of animal protein like milk, meat (beef, mutton, chicken) and eggs have been increasing over the past several years.

The production statistics of milk, meat and eggs during the period from FY2011-12 to FY2018-19 are summarized in Table 7.9

Table 7.9: Production of Milk, Meat and Eggs

Product	Unit	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19*
		Milk	Lakh tonnes	34.63	50.67	60.90	69.69	72.75	92.83
Meat	Lakh tonnes	23.32	36.20	45.20	58.62	61.52	71.54	72.60	62.78
Eggs	Lakh	73038	76173	101680	109952	119124	149331	155200	118520

Source: Department of Livestock Services, ministry of Livestock and Fisheries, *Up to February 2019.

Artificial Insemination of Cattle

Artificial Insemination is an important tool to increase production and productivity of domestic animal. Semen is collected from the bulls reared in the Central Cattle Breeding Station at Savar Cattle Breeding Station and other District Artificial Insemination (AI) Centers and processed as liquid and frozen semen to run the Artificial Insemination Extension Program. A total of 3,998 AI sub-centers/points are in operation to run the program. In FY2018-19, (up to February) 31.72 lakh doses of quality semen were produced and 26.55 lakh doses semen were used for insemination in cows and giving birth to 8.47 lakh cross breed calves.

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 FY2018-19, (up to February) 99.31 lakh doses Livestock vaccine and 14.87 crore doses of poultry vaccines were produced. To strengthening vaccine production activities 'Vaccine production technology modernization 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.

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Infrastructural Development

For providing one stop service to the farmers, 85 new upazila Livestock Development Centers (ULDC) were established through 'Upazila Livestock Development Center (ULDC) Establishment' project. On the other hand, 14 new duck hatcheries were established through 'Regional Duck Breeding Farms Establishment' project. With a view of creating more veterinary graduates, a veterinary college was established at Sirajganj through 'Sirajganj Govt. Veterinary College Establishment' project. For creating diploma graduate in livestock sector, Gaibandha livestock diploma institute was established through 'Establishment of Institute of Livestock Science & Technology' project. Under this project, establishment of 4 diploma institutes in Gopalganj, Khulna, Brahmanbaria and Netrokona district is going on. Besides, a national livestock and poultry training institute was established at 'Gopalganj district through Establishment of National Institute of Livestock and Poultry Management and Disease Diagnostic Laboratory' project. Moreover, 3 sheep farms were established at Rajshahi, Bagerhat and Bogura district through 'Conservation & Improvement of Native Sheep through Community Farming & Commercial Farming' project. Establishment of 2 bull station cum A.I lab at Chattogram and Faridpur district and 3 bull calf rearing unit cum mini A.I lab at Bogra, Sylhet and Barisal district is going on through 'Artificial Insemination Activities Extension and Embryo Transfer Technology Implementation' project. Besides, establishment of a national livestock quality control laboratory at Savar, Dhaka is going on

through 'Establishment of Quality Control Laboratory for Livestock Inputs and its Food Products' project.

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 FY2017-18, 81.67 MT. meat, 29.30 MT. bull stick, 1,176 MT bone chips, 58.52 MT. tail hair of cattle, 24.65 MT. sweet, curd and roshmalai and 12,076 pieces duck dawn jacket were exported from Bangladesh which earned about Tk.16.00 crore. Besides, livestock sector also earn about 200.00 crore taka foreign exchange by exporting livestock products as omasum, abomasum, cattle horn and bone through Export Promotion Bureau (EPB) during FY2017-18. By February 2019 in FY2018-19, 150.29 metric ton meat, 195 metric tonnes bull stick, 2,545 metric ton bone chips, 29.60 metric ton tail hair of cattle, 14.10 metric ton sweet, curd and roshmalai and 56,655 pieces duck dawn jackets were exported from Bangladesh which earned about Tk.16.32 crore. Government provides 10-20 percent cash incentive on exporting these livestock products.

Budget Allocation for Agriculture Sector

In FY2018-19, the total budget allocation for agricultural sector (Ministry of Agricultural, Ministry of Livestock and Fisheries and Ministry of Food) stood at Tk.19,933 crore (Tk.16,326.00 crore for operating and Tk.3,607.00 crore for development), which is 4.29 percent of the total budget allocation. Considering the increase of agriculture production and to provide subsidy to the

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farmers for fertiliser and other agriculture inputs an amount of Tk.9,000.00 crore was allocated in budget of FY2018-19. Up to January 2019 Tk.1,821.44 crore has released to provide subsidy on fertilisers and other Agriculture Inputs. Furthermore, an amount

of Tk.120.00 crore was allocated for agricultural rehabilitation programs and amount of Tk.87.41 crore has already released.