

CHAPTER SEVEN

AGRICULTURE

Agriculture is the main source of food and nutrition for the people and a source of employment for the rural population. In addition to the impact of climate change, the role of agriculture in ensuring food security for a growing population from declining cultivable land is undeniable. The government is working tirelessly to build a sustainable, safe and profitable agricultural system to ensure food security. In the light of Vision 2041, 8th Five Year Plan, National Agricultural Policy 2018, Sustainable Development Goals, Deltaplan-2100 and other planning documents, the government has been making all out efforts for the overall development of the agriculture sector. At present, the government has adopted short, medium and long-term action plans to meet the needs of the growing population in the future, keeping in view the success achieved so far in the agricultural sector in various emergencies, including the impact of COVID-19. The total production target of food grains in FY 2020-21 was 466.35 lakh metrictonnes (MT), which was 453.44 million MT in FY 2019-20. In the revised budget of FY 2020-21, the target for domestic food grain procurement was 14.04 lakh MT. As of February 2021, the country has imported 3.12 lakh MT of food grains under government management. However, a total of 35.00 lakh MT (2.21 lakh MT of rice and 32.79 lakh MT of wheat) was imported in the private sector. In FY 2020-21, a total of Tk. 16,180.82 crore was disbursed as against the target of Tk. 26,292 crore till February 2021, which is about 61.54 percent of the target. In order to increase the productivity in response to the effects of corona, subsidies on agricultural inputs have been increased, agricultural inputs have been made available and the scope of agricultural credit has been facilitated. In view of the increase in domestic agricultural production, Tk. 9,500 crore was allocated in the budget of FY 2020-21 for subsidising fertilisers and other agricultural activities to provide assistance to farmers. A total of 45.03 lakh MT of fish was produced from inland water bodies and marine sources in FY 2019-20, which is targeted 45.52 lakh MT in FY 2020-21. As of February 2021 in FY 2020-21, 1.04 crore and 26.71 crore dose vaccines have been produced for cattle and poultry respectively.

As a result of the adoption of favorable agricultural policies and strategies by the government, agriculture is working as one of the driving forces of the economy of Bangladesh. Agriculture is playing an important role in food grain production, food security, employment and export trade. According to the Provisional estimate of BBS, in FY 2020-21 agriculture contributes about 13.47 percent to the GDP. The agriculture sector is playing an important role in increasing productivity, ensuring sustainable food security and creating employment opportunities. The role of agriculture in reducing rural poverty and accelerating national growth is undeniable. Crop yields continue to increase instead of declining arable land, growing

population, climate change, and the impact of the COVID-19 epidemic. At this time, Bangladesh has risen from fourth place to third place in the world in rice production. As a result, the foundation of food security in the country has been strengthened. Agricultural research has been evaluated and given importance by awarding the Independence medal to the Bangladesh Agricultural Research Council this year. This recognition will play a role in increasing agricultural research and food production.

Management of Agriculture

Achieving self-sufficiency in food as well as ensuring nutritious and safe food to a large

section of the population and establishing a profitable agricultural system is one of the main goals of the government. To attain this goal, the government has taken timely policies, action plans and steps. With the highest consideration for the development of agriculture and the welfare of the farmers, the government is continuing its all-out efforts for the overall development of the agricultural sector in the light of Vision 2041, 8th Five Year Plan, National Agriculture Policy 2018, National Agricultural Extension Policy 2020, National Agricultural Mechanisation Policy 2020, Master Plan for Agricultural Development in the South, Sustainable Development Goals, Deltaplan-2100 and other planning documents. In order to increase crop production and productivity, improved and adversity tolerant varieties are being developed and expanded rapidly, small and marginal farmers are being provided incentives for natural disasters, free and subsidised high yielding varieties are being distributed among farmers and development assistance is being provided in agricultural inputs including fertilisers. Along with this, mechanisation of agriculture, innovation of new cropping systems, development of irrigation system, implementation of integrated pest management (IPM) system, production of transgenic crops etc. have been undertaken. Measures have been taken for targeted agricultural expansion, quality control of agricultural products, adequate crop protection measures, development of marketing system, and ensuring fair prices for all agricultural products.

Short, medium and long-term action plans have been adopted to ensure food security of the people of the country by increasing agricultural production in response to various emergencies including the impact caused by the global epidemic coronavirus (COVID-19). As per the directions of Hon'ble Prime Minister, necessary steps have been taken to increase the production of food in every inch of cultivable land. Considering the movement of workers in the corona situation and the issue of early floods, agricultural machinery combined harvesters and reapers have been allotted on an urgent basis for harvesting paddy in seven districts of the *haor* region. To combat the effects of corona, agricultural subsidies, incentives and support cards for fertilisers, seeds and other agricultural inputs, reduction in irrigation prices, transportation of agricultural commodities at reduced fares, support for agricultural rehabilitation, special agriculture credit at low interests and easy terms, have been provided.

Food Grains Production

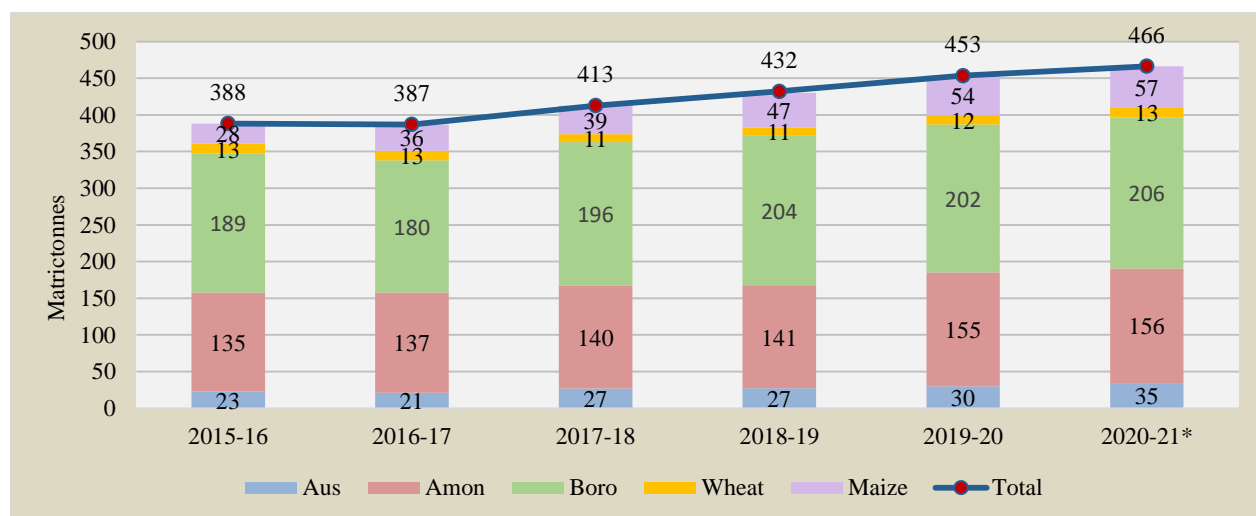
According to the combine estimate of BBS, Ministry of Agriculture and Department of Agriculture Extension (DAE), the volume of food grains production in FY 2019-20 stood at 453.44 lakh MT, of which *Aus* accounted for 30.12 lakh MT, *Aman* 155.02 lakh MT, *Boro* 201.81 lakh MT and wheat 12.46 lakh MT. In FY 2020-21 total food grains production target is 466.35 lakh MT, of which *Aus* 34.52 lakh MT, *Aman* 156.11 lakh MT, *Boro* 205.81 lakh MT and wheat 12.99 lakh MT approximately. Table 7.1 and Figure 7.1 shows the food grains production status.

Table 7.1: Food Grains Production

	(In lakh MT.)							
Food Grains	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
<i>Aus</i>	23.26	23.28	22.89	21.34	27.09	27.20	30.12	34.52
<i>Aman</i>	130.23	131.90	134.83	136.56	139.94	140.55	155.02	156.11
<i>Boro</i>	190.07	191.92	189.38	180.16	195.76	203.89	201.81	205.81
Total Rice	343.56	347.10	347.10	338.06	362.79	373.63	386.95	396.44
Wheat	13.02	13.48	13.48	13.12	10.99	11.48	12.46	12.99
Maize	25.16	23.61	27.59	35.78	38.93	46.99	54.02	56.93
Total	381.74	384.19	388.17	386.96	412.71	432.11	453.44	466.35

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

Figure 7.1: Food Grains Production



* target

Food Budget

Internal Procurement of Food Grains

In the FY 2019-20, the revised budget of public food grain procurement was 22.69 lakh MT (20.74 lakh MT rice and 1.95 lakh MT wheat). Out of this targeted amount, 18.05 lakh MT rice was domestically procured from *Boro* and *Aman* seasons. About 0.64 lakh MT wheat was procured from last Wheat season.

In FY 2020-21, the revised budget for public food grains procurement has been set at 14.04 lakh MT (13.04 lakh MT rice and 1.00 lakh MT wheat). Against this target, 6.55 lakh MT rice has been procured from *Boro* and *Aman* up to 28 February 2021.

Food Grains Import

In FY 2020-21, the revised budget for government food grain import was 15.68 lakh MT (10.01 lakh MT rice and 5.67 lakh MT Wheat). Out of the budget, a total of 3.12 lakh MT food grains (0.96 lakh MT rice and 2.16 lakh MT wheat) was imported up to February 2021. On the other hand, in private sector a total of 35.0 lakh MT food grains (2.21 lakh MT rice and 32.79 lakh MT wheat) was imported during the same period. As a result, a total amount of

imported food grain was 38.12 lakh MT (3.17 lakh MT rice and 34.95 lakh MT wheat).

Public Food Distribution

Under the Public Food Distribution System (PFDS) government distributes food grains to prioritised groups of employees and low-income people through different channels. Under this program, food grains are distributed through monetised channel that includes subsidised distribution program such as-Open Market Sale (OMS), Essential Priority (EP), Others Priority (OP), Food friendly program (*Khaddya bandhob Kormosuchi*), LE program and so on. On the other hand, non-monetised channels are all the social safety net programs like Food for Work (FFW), Test Relief (TR), Vulnerable Group Feeding (VGF), Vulnerable Group Development (VGD), Gratuitous Relief (GR) and others.

In FY 2019-20, the government had a revised budget of 31.04 lakh MT food grains for distribution and the actual distribution was 27.77 lakh MT (monetised 16.02 lakh MT and non-monetised lakh 11.75 MT). In FY 2020-21, the government food grains distribution budget has revised and set at 24.55 lakh MT. Against this budget, up to February 2021, total actual

distribution was 14.58 lakh MT, where 9.87 lakh MT was in monetised channels and 4.71 lakh MT in Non-monetised channel.

Food Grain Storage Capacity

The total capacity of food godowns and silos in the country till February 2021 in FY 2020-21 stands at 22.59 lakh MT; Which was 21.72 lakh MT in the same period of FY 2019-20. At present 3 projects are being implemented with the aim of increasing the capacity to 30 lakh MT by 2030. Besides, 5 lakh family silos have been distributed in 63 upazilas of 19 disaster prone districts of the country. On the occasion of Bangabandhu's birth centenary celebration, a project has been taken up to distribute 3 lakh more family silos in FY 2020-21.

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. As a science based central coordinating body, it collects food samples from all over the country and conducts tests in various food laboratories recognised by the Government of Bangladesh, monitors various food establishments, conducts enforcement in case of inconsistencies in safe food and conducts various public awareness activities such as meetings, seminars/workshops, Caravan road shows, hand wash programs regularly

As of February 2021 in FY 2020-21, 1,777 food samples have been collected out of which 1,476 food samples have been tested and 1,266 standard samples and 209 non-standard samples have been proved by the recognised lab. Grading (A+, A, B, C, D) has been given to 87 hotels/restaurants based on Food Safety

Management Quality. A total of 92 cases have been filed and a fine of Tk. 1.31 crore has been imposed through 64 mobile courts for inconsistencies related to safe food in different food establishments.

In the Mujib Year, to increase public awareness about safe food by following the COVID-19 hygiene rules BFSA conducted 363 seminars /workshops, 60 caravan road shows at upazila level, 15 seminars at district level and 03 seminars /workshops at divisional level in where public awareness instructions on safe food have been provided to about 19,000 stakeholders. On the occasion of the 4th National Food Safety Day 2021, discussion meeting on food safety has been held with the stakeholders.

Seed Production and Distribution

Quality seed is one of the main fundamental inputs for increasing crop production to ensure food security. 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 of private seed producing organisations are also supplying hybrid rice, maize and vegetable seeds. Bangladesh Agricultural Development Corporation (BADC) is performing seed production activities through 24 cereal seed production farms, 2 jute seed production farms, 2 potato seed production farms, 4 pulse and oil seed production farms, 2 vegetable seed production farms and 111 contract growers' zones. Likewise, BADC produces and supplies different crop sapling, 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-growers zones throughout the country, the area of land is 7,41,640 acres. In FY 2020-21 seed production target of BADC is 1,45,500 MT as per demand of the country. Seed production and distribution by BADC in the FY2018-19 to FY 2020-21 are shown in the table 7.2

Table 7.2: Seed Production and Distribution

(In metrictonnes)

Name of the Seed	FY2018-19		FY 2019-20		FY 2020-21	
	Production	Distribution	Production	Distribution	Production (target)	Distribution*
Rice	88141	84347.11	84282	88520	87287	79726
Wheat	12007	17958.16	14922	12053	16000	13143
Maize	82	13.78	82	55	88	519
Potato	34992.7	31649.26	33537	33496	37440	25578
Pulses	2279.6	2128.92	2069	2118	1820	1121
Oil	1636.4	1210.30	1724	1519	1690	1051
Jute	293.3	352.39	826	793	960	0
Vegetables	82.8	67.72	90	98	100	69
Spices	205	199.41	205	178	115	158
Total	139720.6	137927	137737	138829	145500	121364

Source: Ministry of Agriculture. * Up to February 2021

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 FY 2019-20 urea fertilizer was used at a volume of 25.05 lakhs MT and total volume of fertiliser used was 54.57 lakhs MT. The year wise use of fertilisers during the period from FY2013-14 to FY 2020-21 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	
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	2594.00	781.00	763.00	0	50.00	724.00	10.00	285.00	95.00	120.00	5422.00
2019-20	2505.00	660.00	953.00	0	42.00	715.00	6.00	360.00	115.00	101.00	5457.00
2020-21*	2450.00	500.00	1300.00	0	40.00	750.00	4.00	550.00	141.00	130.00	5865.00

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

Irrigation

Efforts are being made to ensure harmonious and well-planned use of groundwater and surface water of the country through conservation of environment, intensification of crop production, diversification and increase in yield. 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. The government is implementing various activities for efficient micro-irrigation management. 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 through survey and monitoring project of minor irrigation development. 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 206 solar pumps and installation of 66 dug well have been installed in different districts of the country. Other districts are being considered to install solar operated irrigation pumps. In FY 2020-21, 18 irrigation projects and 10 irrigation programs are being implemented. Through these irrigation projects and programs 475 k.m. khal/canal/drain re-excavation, construct 300 irrigation infrastructures, 4 rubber dam, 400 k.m. irrigation channel, 140 deep tube wells rehabilitation, installation of 250 power pumps, electrification in 407 irrigation schemes, installation of 75 solar powered irrigation pumps, 16 km construction of embankments/ crop protection dams, 1 nos installation of sprinkler irrigation systems, 36 nos drip irrigation system exhibition plots and

supplying of 44,800 meter ribbon pipe which will be completed by June 2021.

Barind Multipurpose Development Authority (BMDA) has expanded irrigation in all the districts of Rajshahi and Rangpur divisions. About 5.25 lakh hectares of land has been brought under irrigation in Rabi season by using 16,057 nos. of deep tube-wells. To use surface water for irrigation BMDA has re-excavated 3,224 nos. has ponds, 8 nos. water bodies, 2,045 km. khas canal and to preserve the water in the canal 749 nos. cross dam has been constructed across the canals. As a result about 97,500 hectares of land has 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 canal through Buried pipe line. About 15,000 hectares of land has brought under irrigation by using 516 nos Low Lift Pumps (LLP) beside the canal, River and other water bodies. Irrigation work is being carried out on about 5,500 hectares of land in 5 *upazilas* along the river by setting up a single rubber dam on *Baranai* river in *Puthia upazila* of Rajshahi district. In order to increase the efficiency of irrigation activities, about 13,517 km. Irrigation activities are being conducted by constructing and extending underground pipelines. Pre-paid meters have been installed in (16,057) irrigation devices to prevent wastage of irrigation water and electricity and to provide irrigation at moderate cost. In the areas where no irrigation system is effective in the *Barind* region, a total of 574 wells have been dug to retain groundwater and rainwater conservation and 457 wells have been installed in funnel-shaped structures with solar panels to generate about 1,640 kilowatts of eco-friendly solar energy. Through management, about 925 hectares of land is being used for cultivation of low irrigation crops and for food and household purposes.

Area under irrigation continues to grow. The total area under irrigation in FY 2014-15 was 54.48 lakh hectares, which increased to 56.27 lakh hectares in FY 2019-20. The target area for

irrigation in the FY 2020-21 has been set at 56.30 lakh hectares. The irrigated land area during the period from FY 2014-15 to FY 2020-21 is shown in Table 7.4

Table 7.4: Area under Irrigation

(Area in lakh hectare)

Irrigation method	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21 (Target)*
LLP & others	12.51	13.42	13.88	12.21	12.48	12.70	12.71
Deep tube well	9.62	11.94	10.63	10.72	10.76	10.84	10.85
Shallow tube well (surface/deep/very deep)	32.35	29.54	30.79	29.82	29.94	30.01	30.01
Others	-	-	1.97	2.82	2.69	2.72	2.73
Total	54.48	54.90	55.27	55.57	55.87	56.27	56.30

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

Jute Crop Production

Rising environmental awareness around the world has increased the demand and market value of jute as a natural fiber to protect the environment from the harmful effects of synthetic fibers nationally and internationally. About 3 percent of the country's total export income comes from jute and jute products. Therefore, the contribution of jute sector in the development of agriculture and socio-economic condition of this country is very important.

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 77.25 lakh bale from an area of 6.82 lakh hectare in FY 2020-21.

Agricultural Credit

With a view to improving the socio-economic condition of the country along with an underscored role of the agriculture and rural sector, agricultural credit program is being implemented through all scheduled banks. Extended Agricultural and Rural Credit Policy and Program has been formulated in FY 2019-20 by Bangladesh Bank to ensure agricultural and rural credit disbursement easier and hassle free. Like previous years, the agricultural and rural credit policy and program of FY 2020-21 is formulated with a view to speed up the agricultural credit at the marginal level. In FY 2020-21 Tk. 16,180.82 crore has been disbursed up to February'21 as agricultural and rural credit through all the scheduled commercial and specialised banks against the target of Tk. 26,292 crore, which is 61.54 percent of the target. Table 7.5 shows a summary of agricultural credit disbursement and recovery during the period from FY 2013-14 to FY 2020-21.

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

(In crore Tk.)

Fiscal Year	Target	Disbursement	Recovery	Balance
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	23616.25	23734.32	42974.29
2019-20	24124.00	22749.03	21245.24	45592.86
2020-21*	26292.00	16180.82	17492.36	45053.28

Source: Bangladesh Bank * up to February 2021

Development projects/program

Ministry of Agriculture has prepared an Action Plan-2020 to confront with the COVID-19 shock and such emergency situations to ensure increasing agricultural production, improve agricultural marketing systems and ensure fair prices of agricultural commodities. Ministry of Agriculture has been implementing different development projects/programs 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. for ensuring long term food security. Some important reform activities are mentioned below:

- Implementing projects in *haor* areas to increase cropping intensity.
- Ensuring nutrition security through year-round fruits production.
- Implementing projects to reduce pressure on ground water and enhancing ground water level through recharge wells.
- Expansion of irrigation facilities and increase of crop production through installation of rubber dams on small and medium rivers.
- 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.
- Raising awareness among farmers and personnel involved with agricultural activities on the proper utilisation of arable land, fertiliser and other agricultural inputs.
- Establishment of Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN) to reduce of nutritional problems, to develop skilled Human Resources and to create employment opportunities.
- 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.
- Implementing projects on the marketing of agricultural products to ensure fair price for the farmers.
- Implementing projects on Farm Mechanisation Technology to increase crop production and minimize the seasonal labor crisis.
- Ensuring supply of quality seed to farmers through establishment of seed cold storage.
- Establishment of seed multiplication farm in *Dashmina, Patuakahli*, pulse and oil seed multiplication farm and seed processing center in *Subarnachar, Noakhali*.
- Modernisation of seed production, processing and distribution system to ensure quality seed supply to farmers.
- 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 project for the establishment of Post-Entry Quarantine Centre.
- Promotion of organic pest control method and organic agriculture activities.
- 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.
- Using solar energy for irrigation to save oil and electricity.
- 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.
- Adoption of synchronized cultivation.
- Project implementation for coffee and cashew nut production.
- Project implementation for the establishment of family nutrition garden in homestead and uncultivable fallow land.

Fisheries Sector

Fish Production

The contribution of the fisheries sector to the socio-economic progress, prosperity and above

all poverty alleviation of Bangladesh is very important and undeniable. GDP growth rate in fisheries sector is 5.74 percent. Fisheries sector contributes 3.57 percent to the national GDP and 26.50 percent to the total agricultural GDP of the country. The government is taking and implementing various activities to ensure the supply of animal protein through increasing fish production. As a result of the implementation of fisheries-friendly activities of the government and the provision of demand-based and appropriate technical services at the farmer and entrepreneurial level, fish production has increased to 45.03 lakh MT in FY 2019-20, which is 27 percent more than the total production (35.48 lakh MT) in FY2013-14. It may be mentioned that the total fish production in the country was 7.54 lakh MT in FY1983-84. Fish production has increased more than six times in 37 years.

According to FAO report 'The State of World Fisheries and Aquaculture 2020', Bangladesh ranked 3rd in inland open water capture production and 5th in world aquaculture production. In the last 10 years, Bangladesh has risen to the second position in terms of growth rate of fish production in inland water bodies. Moreover, Bangladesh ranked 1st among 11 Hilsa producing countries in the world. Currently Bangladesh ranks 4th in Tilapia production in the world and 3rd in Asia.

The recent coronavirus outbreak has posed a major challenge to fish marketing due to supply constraints. The government has continued to provide necessary assistance to address this crisis. At this time selling of fish through mobile fish sales center/growth center, online fish marketing and distribution of fish with relief to poor and helpless people to speed up fish marketing of fish farmers were carried out for the development of fish supply chain. Table 7.6 shows the trend of fish production during the period from FY2013-14 to FY 2020-21.

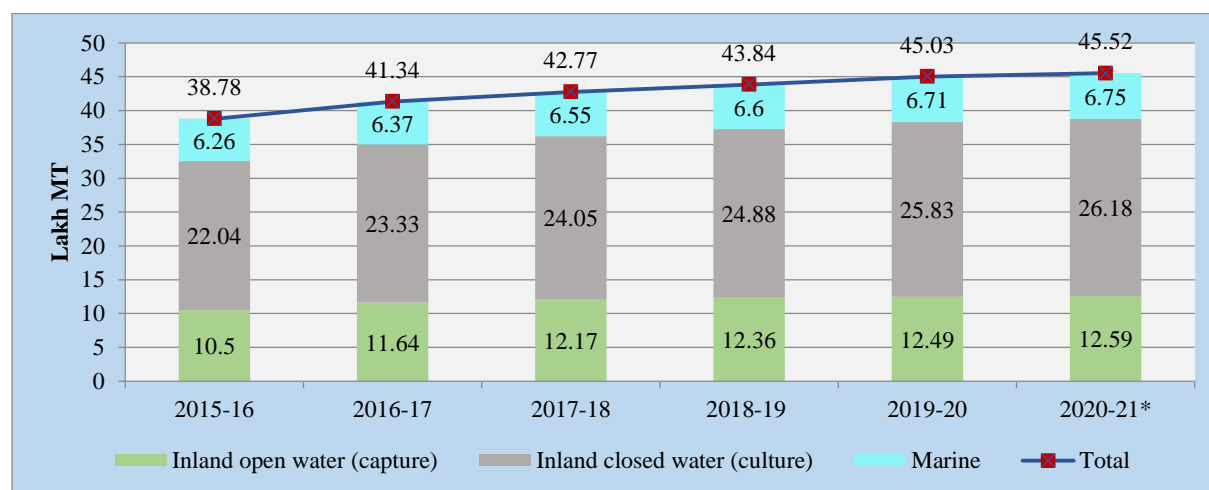
Table 7.6: Fish Production Trends in Different Resources

(In lakh metric tonnes)

Sector	Area (Lakh ha)	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21* (Projected)
1. Inland									
(a) Capture									
(i) River & Estuaries	8.54	1.67	1.75	1.78	2.72	3.21	3.25	3.29	3.32
(ii) Sundarban	1.78	0.19	0.18	0.17	0.18	0.18	0.18	0.21	0.21
(iii) Beel	1.14	0.89	0.93	0.95	0.98	0.99	2.00	1.00	1.00
(iv) Kaptai lake	0.69	0.08	0.08	0.10	0.10	0.10	0.11	0.13	0.13
(v) Flood plain	26.93	7.13	7.30	7.48	7.66	7.69	7.82	7.73	7.79
Sub-Total (Open Water)	39.08	10.0	10.24	10.5	11.64	12.17	12.36	12.49	12.59
(b) Culture									
(i) Pond	3.77	15.26	16.13	17.20	18.33	19.00	19.75	20.46	20.75
(ii) Baors	0.055	0.07	0.07	2.08	0.08	0.08	0.1	0.11	0.11
(iii) Seasonal cultured water bodies	1.33	1.93	2.01	0.08	2.16	2.16	2.17	2.26	2.3
(iv) Shrimp /Prawn farms	2.756	2.17	2.24	2.40	2.47	2.54	2.58	2.7	2.71
(iv) Pen culture	0.833	0.13	0.13	0.13	0.13	0.11	0.12	0.13	0.13
(iv) Cage culture	0.001	0.01	0.02	0.02	0.02	0.04	0.04	0.04	0.05
(v) Crab				0.13	0.14	0.12	0.12	0.13	0.13
Sub-Total (Culture)	8.745	19.57	20.60	22.04	23.33	24.05	24.88	25.83	26.18
Total (Inland)	47.825	29.53	30.84	32.52	34.97	36.22	37.24	38.32	38.77
2. Marine Fisheries									
(a) Industrial		0.77	0.85	1.05	1.08	1.2	1.07	1.15	1.16
(b) Artisanal		5.18	5.15	5.21	5.29	5.35	5.53	5.56	5.59
Total (Marine)	-	5.95	6.00	6.26	6.37	6.55	6.60	6.71	6.75
Country Total	47.825	35.48	36.84	38.78	41.34	42.77	43.84	45.03	45.52

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

Figure 7.2: Fish Production Trends in Different Resources



*Projected

Production of Fish Spawn and Fish Fry

Hatchery produced seed/fry provide about hundred percent of total demand in aquaculture. But the availability of quality fish fry is quite difficult due to inbreeding problem in hatcheries. To overcome this problem, Department of Fisheries has continued its efforts to ensure the

quality of fry by producing quality brood in hatchery through collecting fry from natural sources. At present there are 143 government fish farm and 1,068 private farms 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
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
2019	143	1038	12.58	734.43	747.01	3.38	821.16	824.54
2020	143	1068	14.98	972.91	987.83	4.31	957.26	961.57

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

Conservation Program for *Jatka*

Bangladesh ranked first among 11 Hilsa producing countries in the world. About 12.15 percent of the country's total fish production comes from Hilsa alone. Hilsa contributes more than one percent to the country's GDP. The contribution of hilsa as a single species is the highest. Hilsa of Bangladesh is appreciated in the world market with its own identity after obtaining the Geographical Registration Certificate (GI Certificate) titled Bangladesh Hilsa. Bangladesh, which produces more than two-thirds of the world's Hilsa will henceforth be presented to the world as the country of Hilsa. The government is firmly committed to the desired development of these resources. The government has adopted following steps for the protection and conservation of Hilsa fishes:

- 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.
- A part 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.

- Establishment of a total of 6 hilsa sanctuaries in the upper and lower basins of Padma, Meghna, *Kalabadar*, *Andharamanik* and other coastal rivers including *Tentulia* and strengthening of partnership management.
- To destroy Illegal fishing net ‘Special Combing Operation’ has been operating every year.

Production and size of Hilsa has increased unexpectedly as a result of smooth implementation of 6 existing Hilsa sanctuaries in the country and implementation of joint operations/activities, conservation of *Jatka*, protection of brood Hilsa. Under the social security program, a total of 26305.20 MT food assistance provided to 3,28,815 *Jatka* families for 2 months (up to February-March) at 98 *upazila* under 20 district In FY 2020-21. VGF also given at the ban period of brood hilsa. In FY 2020-21, total amount of 10,566.84 MT VGF food assistance were provided to 5,28,342 families at the rate of 20 kg at 152 *upazila* under 36 district .In the year 2021, special combing operations were conducted in 17 districts and 492 mobile courts and 1,681 operations were executed. By this operation, 2,448 destructive *Behundi* nets, 274.18 lakh meters of current nets and 3,255 other nets were seized and destroyed.

Management of Marine Fisheries Resources

The government is implementing special programs and enacting laws and regulations to ensure proper utilisation and control of marine fisheries resources. 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. Marine Fisheries Act-2020 has been passed on 16 November 2020 in the 11th National Parliament and published to Govt. gazette on 26 November 2020 in order to income generation, employment

and expedition of blue economy through marine fisheries resources management, exploitation, protection and development. Initiatives has been taken to prepare National Marine Fisheries Policy (NMFP) and Marine Fisheries Management Plan (MFMP).

The Research and Survey vessel ‘RV Mean *Sandhani*’ have already conducted 27 survey cruises till February 2021 in the Bay of Bengal. All the collected data have been preserved for further biological analysis. A marine surveillance check post is being operated in Chattogram and 16 more marine surveillance check posts will be established under the ‘Sustainable Coastal and Marine Fisheries Project’. With the help of Eco fish project, 3,188 sq km area adjacent to *Nijhum dweep* under *Hatia Upazila* has been declared as Marine Protected Area (MPA). The government has undertaken a pilot project to extract Tuna and similar pelagic fish in the deep sea. Crab hatchery has been established at *Kalatali*, *Cox's Bazar* and crablets are being successfully produced. In addition, seaweed and oyster culture is being piloted in coastal areas that will unveil the new horizon of blue economy.

Export of Fish and Fisheries Products

Fish and fishery products are one of the major export commodities of Bangladesh. Bangladeshi fish and fishery products are exported to more than 50 countries including European Union (EU), USA, Japan, Russia, China etc. EU countries are the major importers of Bangladeshi fish and fishery products. At present, a total of 105 fish processing plants are licensed of which 73 are approved for exporting their products to the EU countries. In FY 2020-21(up to January 2021) Bangladesh earned Tk.2,555.04 crore by exporting 46,393.52 MT fish and fishery products.

Livestock

Contribution of livestock sector in national GDP at constant price was 1.44 percent and share of

livestock sector in agricultural GDP was 10.69 percent in FY 2020-21. Though the share of the livestock sub sector in national GDP is small, but it has immense contribution to meet the daily animal protein requirements for human consumption. A number of multilateral activities and initiatives have been taken by this sub-sector for livestock development. The most important activities are: extension of breed up gradation through artificial insemination using superior quality semen, vaccine production and

distribution for preventing diseases, providing treatment and diagnostic services, distribution of chicks and ducklings at subsidised rate among the stakeholders, providing training and technology transfer to the farmers, entrepreneur's development, etc. The population of livestock and poultry rose to 560.62 lakh and 3,585.46 lakh respectively by February 2021 in FY 2020-21. 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.

Livestock/ Poultry	(Number in Lakh)							
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Cattle	234.88	236.36	237.85	239.35	240.86	242.38	243.91	244.42
Buffalo	14.57	14.64	14.71	14.78	14.85	14.92	14.93	15.01
Goat	254.39	256.02	257.66	259.31	261.00	262.67	264.35	264.94
Sheep	32.06	32.70	33.35	34.01	34.68	35.37	36.07	36.24
Total livestock	535.90	539.72	543.57	647.45	551.39	555.34	559.26	560.62
Chicken	2553.11	2617.70	2683.93	2751.83	2821.45	2892.83	2966.02	2984.06
Duck	488.61	505.22	522.40	540.16	558.53	577.52	597.16	601.39
Total Poultry	3041.72	3122.93	3206.33	3292.00	3379.98	3470.35	3563.18	3585.46

Source: DLS, MoFL, *Up to February 2021.

The production of animal protein like milk, meat (beef, mutton and chicken) and egg has been increasing over the past several years. As a result, per capita availability of milk, meat and egg rose to 175.63 ml/day, 126.20 gm/day and 104.23 no's/year respectively in FY 2019-20. However, due to prolonged public holidays due to the coronavirus outbreak, there have been enormous difficulties in the poultry and dairy sector,

especially in the marketing for eggs and milk products, and the government has taken necessary steps, and is continuing to provide required assistance to help the sector overcome those difficulties. The production statistics of milk, meat and eggs during the period from FY2013-14 to FY 2020-21 are summarised in Table 7.9

Table 7.9: Production of Milk, Meat and Eggs

Product	Unit	Production							
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Milk	Lakh Ton	60.90	69.69	72.75	92.83	94.06	99.23	106.80	78.96
Meat	Lakh Ton	45.20	58.62	61.52	71.54	72.60	75.14	76.74	61.98
Eggs	Lakh	101680	109952	119124	149331	155200	171100	173600	122348

Source: Department of Livestock Services, ministry of Livestock and Fisheries, *Up to February 2021.

Artificial Insemination of Cattle

Artificial Insemination is an important tool to increase production and productivity of domestic animal. DLS is implementing artificial insemination (AI) activities through 4,609 nos AI point/sub-centers throughout the country. As a result, about 48 percent cattle population were transformed into crossbreed cattle in Bangladesh now. During FY 2019-20, 46.74 lakh doses of quality semen were produced and 44.41 lakh doses semen were used for artificial insemination in cows. During this period about 14.78 lakh cross breed calves were born. By February 2021 in FY 2020-21, 28.66 lakh doses of quality semen were produced and 27.89 lakh doses semen were used for artificial insemination in cows. In this period about 10.48 lakh cross breed calves were born.

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 FY 2020-21, (up to February 2021) 1.04 crore doses Livestock vaccine and 26.71 crore doses of poultry vaccines were produced. To strengthening vaccine production activities '*Vaccine production technology 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.

Infrastructural Development

For providing one stop service to the farmers, 85 new ULDC building were established through '*Upazila Livestock Development Center (ULDC) Establishment*' project. On the other hand, for increasing day old duckling production, 14 new duck hatchery were established through '*Regional Duck Breeding Farms Establishment*' project. With a view to creating more veterinary graduates, a veterinary college was established at

Sirajganj district through '*Sirajganj Govt. Veterinary College Establishment*' project, which starts academic session in FY 2019-20 education years. Moreover, for creating diploma graduate in livestock sector, *Gaibandha* and *Brahmanbaria* livestock diploma institute were established through '*Establishment of Institute of Livestock Science and Technology*' project, which runs academic session. Through this project another 3 diploma institute establishment at *Gopalganj*, *Khulna* and *Netrakona* district is going on.

Besides, a national livestock and poultry training institute were established at *Gopalganj* district through '*Establishment of National Institute of Livestock and Poultry Management and Disease Diagnostic Laboratory*' project for providing training and disease diagnostic facilities to the farmers. Moreover, with a view to increase sheep farming in Bangladesh 3 demonstration sheep farm were established at *Rajshahi*, *Bagerhat* and *Bogura* district through '*Conservation and Improvement of Native Sheep through Community Farming and Commercial Farming*' project which are now in function. For more semen production, establishment of 2 bull station cum A.I lab at *Chattogram* and *Faridpur* district and 5 bull calf rearing unit cum mini A.I lab at *Bogura*, *Sylhet*, *Khulna*, *Rangpur* and *Barisal* district is going on through '*Artificial Insemination Activities Extension and Embryo Transfer Technology Implementation*' project. Moreover, 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 for quality control of livestock product and by products. With a view to eradicate PPR disease from Bangladesh and control of FMD in selected 4 districts, a project named '*Eradication of PPR disease and control of FMD project*' is implementing at project area.

Export of Meat and Livestock Products

Livestock sector has been earning foreign exchange by exporting meat and livestock products to USA, UAE, China, Kuwait, Canada, Vietnam, Malaysia, India and Maldives. In FY 2019-20, 66.83 metrictonnes meat, 57.88 metrictonnes bull stick, 989.5 metrictonnes beef bone chips, 20.5 metrictonnes tail hair of cattle, 64.53 metrictonnes sweet products (sweet, curd and *roshmalai*), 142.44 metrictonnes duck feather, 12.60 metrictonnes animal feed and 63 metrictonnes bone gelatin were exported from Bangladesh which earned about Tk. 26.05 crore. Besides, livestock sector also earned about Tk.743 crore by exporting livestock products through Export Promotion Bureau (EPB) during FY 2019-20. By February 2021 in FY 2020-21, 61.0 metrictonnes meat, 40.5 metrictonnes bull stick, 62 metrictonnes tail hair of cattle, 158.57 metrictonnes sweet products, 2,213.54 metrictonnes animal and poultry feed, 137 metrictonnes bone gelatin and 13.56 metrictonnes Omasum were exported from Bangladesh which earned about Tk. 35.41 crore.

Budget Allocation for Agriculture Sector

The government has taken several important initiatives to ensure food security and keep agricultural production normal in the country under coronavirus (COVID-19). In FY 2020-21, the total budget allocation for agricultural sector (Ministry of Agricultural, Ministry of Livestock and Fisheries and Ministry of Food) stood at Tk.24,682 crore, which is 4.35 percent of the total budget allocation.

In view of the increase in agricultural production, Tk 9,500 crore was allocated in the budget for FY 2020-21 for subsidising fertilisers and other agricultural activities to provide assistance to farmers. Up to February 2021 Tk. 800.84 crore has released to provide subsidy on fertilisers and other Agriculture Inputs. In addition to that an amount of 374.85 crore has allocated for Agriculture Rehabilitation Programmes and an amount of Tk.130 crore has allocated for seed production activities. An incentive package of Tk. 3,220 crore has been formulated for distribution of agricultural machinery to modernise agriculture, increase production, resolve labor crisis in major seasons and ensure overall food security. An agricultural refinance scheme of Tk. 5,000 crore was set up to facilitate farmers to get loans. Under this, loans amounting to Tk. 3,936.00 crore have been disbursed till April 2021. Another refinancing scheme of Tk. 3,000 crore has been launched for low-income farmers/small traders in the agriculture sector and as of April 2021, Tk.1,772 crore have been disbursed. As many as 2,05,99,869 farmers have been provided incentives through cards for the assistance of fertilisers, seeds and other agricultural inputs worth Tk. 413.46 crore in FY 2020-21. In addition to the normal subsidy for agricultural development, a 20 percent cash incentive is being provided for the export of agricultural inputs and a 20 percent rebate on electricity bills for the use of electricity-driven irrigation equipment.