

CHAPTER SEVEN

AGRICULTURE

Agriculture is working as one of the driving forces of the economy of Bangladesh as a result of the adoption of favorable agricultural policies and strategies by the government. Although food security is likely to be disrupted due to global corona disaster, food grains production and supply system may be disrupted, but Bangladesh did not have to face such problems due to timely decision of the government. The government is working tirelessly to build sustainable, safe and profitable agricultural systems to ensure food security. The government has been making all out efforts for the overall development of the agriculture sector in the light of Vision 2041, 8th Five Year Plan, National Agricultural Policy 2018, Sustainable Development Goals, Deltaplan-2100 and other planning documents. At present, the government has adopted short, medium and long term action plans to meet the future needs of the growing population, based on the agriculture sector's achievements in various emergencies, including the impact of COVID-19. The total production target of food grains in FY 2021-22 is 465.83 lakh metric tonnes (MT), which was 466.35 lakh MT in FY 2020-21. In the revised budget of FY 2021-22, the target for domestic food grain procurement is 19.50 lakh MT. As of February 2022, the country has imported 10.59 lakh MT of food grains under government management. However, a total of 27.69 lakh MT (3.04 lakh MT of rice and 24.65 lakh MT of wheat) was imported in the private sector. In FY 2021-22, a total of Tk. 19,530.25 crore was disbursed as against the target of Tk. 28,391 crore till February 2022, which is about 68.79 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. With a view to increasing agricultural production, Tk. 9,500 crore has been allocated for subsidising fertilisers and other agricultural activities and Tk. 150 crore has been allocated for seed production activities to support the farmers in the budget of FY 2021-22. A total of 46.21 lakh MT of fish was produced from inland water bodies and marine sources in FY 2020-21 which is targeted 46.64 lakh MT in FY 2021-22. In order to prevent various diseases and reduce the financial risk of diseases, 31.16 crore dose vaccines for 17 diseases of cattle and poultry have been produced and applied in FY 2020-21.

The agriculture sector is playing an important role in increasing productivity, ensuring sustainable food security and creating employment opportunities. According to the provisional calculation of BBS, the contribution of agriculture to the GDP in FY 2021-22 is about 11.50 percent. Despite declining arable land, meeting the food and nutrition needs of the growing population, climate change, and the impact of the COVID-19, crop production continues to grow. At this time, Bangladesh has risen from the fourth place to the third place in rice production in the world, as a result of which the foundation of food security in the country has been strengthened. Agricultural research has been evaluated and given importance by awarding

Independence Medal to Bangladesh Agricultural Research Council (BARC) in 2021 and Bangladesh Wheat and Maize Research Institute in 2022. These recognitions will play a role in increasing agricultural research and food production.

Management of Agriculture

The government is working tirelessly to build sustainable, safe and profitable agricultural systems to ensure food security. One of the government's key goals is to achieve food self-sufficiency while also assuring nutritious and safe food, improving productivity, building marketing systems, and establishing profitable agricultural systems. 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 adaptable varieties are being developed and expedited, 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. Along with the expansion of improved varieties of local fruits, the cultivation of exotic fruits suitable for cultivation in the country, such as teen, dragon, avocado, Arabic date, rambutan, persimmon has also increased. Initiatives have been taken to expand coffee and cashew nut cultivation in hilly areas.

Initiatives have been taken to increase crop cultivation and production through the use of fallow lands. Farmers have been given training to enhance crop density in order to increase productivity by cultivating seasonal fallow fields,

planting vegetable and orchards in other fallow lands, including homesteads, and diversifying crops. According to the Hon'ble Prime Minister's directives, 32 vegetable and nutrition gardens are being established in each union of the country with the goal of cultivating every inch of land and ensuring family nutrition security. To mark the commemoration of the birth centenary of the Father of the Nation, step has been taken to create 100 additional Family Nutrition Gardens in each union of the country. All the homeless people who have been given houses by the Hon'ble Prime Minister will be included in the Family Nutrition Gardens programme.

In response to the effects of the global COVID-19, extreme floods and natural disasters, government has adopted short, medium and long-term action plans to maintain food security for the people of the country by continuing the expansion in agricultural productivity. Increased agricultural subsidies, incentive and support cards for other agricultural inputs such as fertilisers and seeds, lower irrigation prices, agricultural commodity transportation at reduced rates, agricultural rehabilitation assistance and special agricultural loan facilities with low interest and easy terms have been provided for rehabilitation assistance including regular agricultural rehabilitation assistance in FY 2020-21 and FY 2021-22.

Food Grains Production

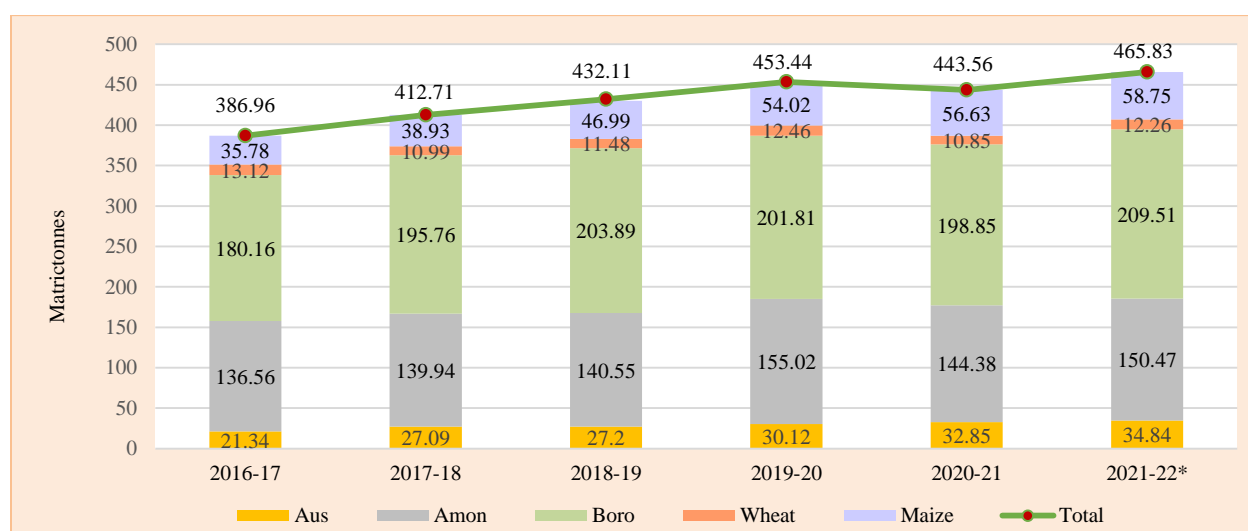
According to the combine estimate of BBS, Ministry of Agriculture and Department of Agriculture Extension (DAE), the volume of food grains production in FY 2020-21 stood at 443.56 lakh MT, of which *Aus* accounted for 32.85 lakh MT, *Aman* 144.38 lakh MT, *Boro* 198.85 lakh MT and wheat 10.85 lakh MT. In FY 2021-22 total food grains production target is 465.83 lakh MT, of which *Aus* 34.84 lakh MT, *Aman* 150.47 lakh MT, *Boro* 209.51 lakh MT and wheat 12.26 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	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22*
<i>Aus</i>	23.28	22.89	21.34	27.09	27.20	30.12	32.85	34.84
<i>Amon</i>	131.90	134.83	136.56	139.94	140.55	155.02	144.38	150.47
<i>Boro</i>	191.92	189.38	180.16	195.76	203.89	201.81	198.85	209.51
Total Rice	347.10	347.10	338.06	362.79	373.63	386.95	376.08	394.81
Wheat	13.48	13.48	13.12	10.99	11.48	12.46	10.85	12.26
Maize	23.61	27.59	35.78	38.93	46.99	54.02	56.63	58.75
Total	384.19	388.17	386.96	412.71	432.11	453.44	443.56	465.83

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 FY 2020-21 the revised budget of public food grain procurement was 14.04 lakh MT (13.04 lakh MT rice and 1.00 lakh MT wheat). Out of this targeted amount, 14.50 lakh MT rice was domestically procured from *Boro* and *Aman* seasons. About 1.03 lakh MT wheat was procured from last Wheat season.

In FY 2021-22, the revised budget for public food grains procurement has been set at 19.50 lakh MT (18.50 lakh MT rice and 1.00 lakh MT wheat). Against this target, 13.60 lakh MT rice has been

procured from *Boro* and *Aman* up to 28 February 2022.

Food Grains Import

In FY 2021-22, the revised budget for government food grain import was 13.33 lakh MT (7.32 lakh MT rice and 6.01 lakh MT Wheat). Out of the budget, a total of 10.59 lakh MT food grains (6.51 lakh MT rice and 4.08 lakh MT wheat) was imported up to February 2022. On the other hand, in private sector a total of 27.69 lakh MT food grains (3.04 lakh MT rice and 24.65 lakh MT wheat) was imported during the same period. As a result, a total amount of

imported food grain is 38.28 lakh MT (9.55 lakh MT rice and 28.73 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 programme, food grains are distributed through monetised channel that includes subsidised distribution programme such as - Open Market Sale (OMS), Essential Priority (EP), Others Priority (OP), Food friendly program (*Khaddya bandhob Kormosuchi*), LE programme and so on. On the other hand, non-monetised channels are all the social safety net programmes like Food for Work (FFW), Test Relief (TR), Vulnerable Group Feeding (VGF), Vulnerable Group Development (VGD), Gratuitous Relief (GR) and others.

In FY 2020-21, the government had a revised budget of 24.53 lakh MT food grains for distribution and the actual distribution was 22.89 lakh MT (monetised 15.60 lakh MT and non-monetised lakh 7.29 MT). In FY 2021-22, the government food grains distribution budget has revised and set at 32.38 lakh MT. Against this budget, up to February 2022, total actual distribution was 19.05 lakh MT, where 13.46 lakh MT was in monetised channels and 5.59 lakh MT in Non-monetised channel.

Food Grain Storage Capacity

The total capacity of food godowns and silos in the country till February 2022 in FY 2021-22 stands at 21.86 lakh MT; Which was 21.67 lakh MT in the same period of 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 is being observed as

National Food Safety Day since 2018. Bangladesh Food Safety Authority, as a central coordinating body, conducts mobile courts with awareness campaigns against food adulteration through coordination among all concerned government and non-government stakeholders. Conducts food safety and quality testing, restaurant grading and monitoring activities.

900 food samples have been collected till February 2022 in FY 2021-22. Of the tested samples, 533 were standardised and 62 were sub-standardised by the government-recognised accredited labs. As on February 2022, 112 food establishments were inspected on site by head office, 4,135 by district office and 8,455 by the designated food safety inspector. A total of 12,702 food establishments (hotels/restaurants, sweets and confectionery, bakery and others.) were inspected on the spot and provided necessary instructions. Besides, grading of 33 hotel-restaurant/food establishments and re-grading of 22 hotel-restaurant/food establishments have been provided with stickers. Till February 2022, 105 cases have been filed against 101 people through 110 mobile courts and fines of Tk. 1.40 crore have been imposed. In addition, 2,100 food workers have been trained to improve the quality of service of hotel/restaurant related traders and employees. In the *Mujib* Year, following the hygiene rules of COVID-19, till July-February 2022, about 28,650 participants have been imparted public awareness training on safe food through 443 seminars/workshops at divisional/district/*upazila* level and 130 seminars/workshops in educational institutions (schools/colleges). On the occasion of the 5th National Safe Food Day 2022, discussion meetings on food security were held with stakeholders in all the districts of the country.

Seed Production and Distribution

One of the most important inputs for enhancing crop yield and ensuring food security is high-quality seed. 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 86 contract growers' zones.

Likewise, BADC produces and supplies different crop sapling, graft and *gooties* through 9 Horticulture Development Centres and 14 Agro Service Centres. At present number of farmers are 98,693 under the 86 contract-growers zones throughout the country, the area of land is 2,16,434 acres. In FY 2021-22 seed production target of BADC is 1,57,677 MT as per demand of the country. Seed production and distribution by BADC in the FY 2019-20 to FY 2021-22 are shown in the table 7.2

Table 7.2: Seed Production and Distribution

(In metrictonnes)

Name of the Seed	FY 2019-20		FY 2020-21		FY 2021-22	
	Production	Distribution	Production	Distribution	Production (target)	Distribution*
Rice	84282	88520	93364	86266	97446	82292
Wheat	14922	12053	16228	14762	15925	12153
Maize	82	55	52	556	80	22
Potato	33537	33496	35148	32476	38721	23777
Pulses	2069	2118	1807	2029	1984	1490
Oil	1724	1519	1427	1621	1817	1236
Jute	826	793	736	592	1320	223
Vegetables	90	98	88	102	129	60
Spices	205	178	154	158	255	345
Total	137737	138829	149004	138572	157677	121598

Source: Ministry of Agriculture. * Up to February 2022.

Fertiliser

To meet the increasing population's food needs, intensive farming with high yielding varieties and advanced technology should continue to increase food production. Organic fertilisers as well as chemical fertilisers have to be used in the soil to meet the nutrient deficiencies required for these high yielding crops. The use of chemical fertilisers for crop production is increasing day

by day to ensure increase in agricultural production as the demand for food increases. The use of urea fertiliser alone is the highest in the agriculture of the country.

In FY 2021-22, a total of 56.91 lakh metrictonns of fertiliser was used, of which urea was 21.58 lakh metrictonns. The year wise use of fertilisers during the period from FY 2014-15 to FY 2021-22 is shown in Table 7.3.

Table 7.3: Use of Chemical Fertiliser

(In '000' metrictonn)

FY	Name of Fertiliser										Total
	Urea	TSP	DAP	SSP	NPKS	MOP	AS	Gypsum	Zinc	Others	
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	2463.00	523.00	1424.00	0	40.00	798.00	4.00	550.00	141.00	130.00	6073.00
2021-22*	2158.00	609.00	1442.00	0	27.00	757.00	4.30	455.00	117.50	120.70	5691.50

Source: FFM, Ministry of Agriculture. * Up to February 2022.

Irrigation

Through environmental conservation, agricultural intensification, diversity and yield increase, efforts are being undertaken to ensure a harmonious and well-planned use of the country's groundwater and surface water. The government has placed special emphasis on maintaining ecological balance and reducing irrigation costs by reducing the use of groundwater and increasing the use of surface 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, 290 solar powered irrigation pumps and 101 solar powered dug wells have been installed in different districts of the country. In addition, there are plans to install solar powered irrigation pumps in area-based and centrally implemented projects. In FY 2021-22, 15 irrigation projects and 05 irrigation programmes are being implemented through BADC. Through all these irrigation projects and programmes 712 km. re-excavation of canals/drains, 650 irrigation infrastructures, 02 rubber dams, 820 km. underground and surface irrigation canals, 352 powered pumps, electrification of 505 irrigators, installation of 160 solar powered irrigation pumps, 20 km. construction of embankments/crop protection dams, installation of 05 sprinkler irrigation system demonstration plots, installation of 55 drip irrigation system demonstration plots and supply of 20,000 meter ribbon pipes which will be completed by June 2022.

Barind Multipurpose Development Authority (BMDA) has expanded irrigation in all the districts of *Rajshahi* and *Rangpur* divisions. In FY 2021-22 (up to January, 2022) about 3.90 lakh hectares of land has brought under controlled irrigation in *Aus*, *Aman* and *Robi* season by using 14,120 nos. of deep tubewells (DTW) and 389 nos. of low lift pumps (LLP).

To use surface water for irrigation BMDA has re-excavated 3,443 nos. *khas* ponds, 9 nos. water bodies, 2,093 km. *khas* channel and to preserve the water in the channel 749 nos. cross dam has been constructed across the channels. As a result, about 97,700 hectares of land has brought under supplementary irrigation. To increase the use of surface water for irrigation, a total of 11 pontoons have been set up on *Padma*, *Mahananda* and *Atrai* rivers, pumped water from the river and transferred to canals/ponds and a total of 519 low lift pumps (LLPs) have been installed on canals, ponds and river banks. Arrangements have been made to irrigate 15,000

hectares of land. In the areas where no irrigation system is effective in the *Barind* region, a total of 604 dug-wells have been dug and rainwater harvesting has been arranged to hold underground leakage water. The people of these areas are using the water from Dug-wells for cultivating vegetables and drinking purpose. About 578 nos. of Dug wells has been operated through solar energy by installing solar panel over the wells. As a result, about 2,300 kilowatts of environmentally friendly solar power is being used to irrigate about 1,150 hectares of land 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 2015-16 was 54.90 lakh hectares, which increased to 56.54 lakh hectares in FY 2020-21. The target area for irrigation in the FY 2021-22 has been set at 56.58 lakh hectares. The irrigated land area during the period from FY 2015-16 to FY 2021-22 is shown in Table 7.4.

Table 7.4: Area under Irrigation

(Area in lakh hectare)

Irrigation method	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2020-21*
LLP & others	13.42	13.88	12.21	12.48	12.70	12.87	12.88
Deep tube well	11.94	10.63	10.72	10.76	10.84	10.85	10.85
Shallow tube well (surface/deep/very deep)	29.54	30.79	29.82	29.94	30.01	30.06	30.08
Others	-	1.97	2.82	2.69	2.72	2.76	2.77
Total	54.90	55.27	55.57	55.87	56.27	56.54	56.58

Source: DAE, BADC, BMDA, Ministry of Agriculture. * Target.

Jute Crop Production

Increasing 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, both 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.

Under the supervision of Bangladesh Jute Research Institute, 'Genome Sequence' of *Tosha* Jute was first unveiled in the world in 2010 and *Desi* Jute was unveiled in 2013. In the meantime,

two high yielding advanced breeding lines of *Tosha Jute Robi-1*, *Robi-2* and two high yielding advanced breeding lines of *desi jute Shashi-1* and *Shashi-2* have been invented using the genome information of jute. Among them, 1 high yielding advanced breeding line (*Robi-1*) variety of *Tosha Jute* has been released in 2019 under the name of BJRI *Tosha Pat-8*. In the meantime, 4,000 demonstration plots have been set up in different areas of the country through DAE to disseminate the variety at the farmers' level. This will greatly reduce the import dependence of jute seeds. Moreover, the government has enacted 'Mandatory Packaging Act-2010' and 'Rules for Mandatory Packaging rules with jute bag-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 82.77 lakh bale from an area of 7.45 lakh hectare in FY 2021-22.

Agricultural Credit

In order to strengthen the food security of the country and to uplift the role of the agricultural

sector and rural areas in the overall socio-economic development, the distribution of agricultural and rural loans through banks and financial institutions is continuing. Extended agricultural and rural credit policy and programme has been formulated by Bangladesh Bank to ensure agricultural and rural credit disbursement easier and hassle free. Like previous years, the agricultural and rural credit policy and programme in FY 2021-22 is formulated with a view to speed up the agricultural credit at the marginal level.

In FY 2020-21 Tk. 25,511.35 crore has been disbursed as agricultural and rural credit against the target of Tk. 26,292.00 crore through all the scheduled commercial and specialised banks, which is 97.03 percent of the target. Beside this, in FY 2021-22 Tk. 19,530.25 crore has been disbursed up to February 2022 as agricultural and rural credit against the target of Tk. 28,391.00 crore, which is 68.79 percent of the target. In accordance with the previous fiscal year agricultural credit is increasing every year. The below table shows a summary of agricultural and rural credit disbursement and recovery position during the period from FY 2014-15 to February 2022 of FY 2021-22.

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

(In crore Tk.)

Fiscal Year	Target	Disbursement	Recovery	Balance
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	25511.35	27123.90	45939.80
2021-22*	28391.00	19530.25	17597.68	48834.80

Source: Bangladesh Bank * up to February 2022.

Development projects/programme

To deal with the COVID-19 shock and other emergency situations, the Ministry of Agriculture has developed an Action Plan-2020 to assure increased agricultural production, improved agricultural marketing mechanisms and fair agricultural commodity prices. 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. 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.
- 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.

- Using solar energy for irrigation to save oil and electricity.
- Promoting participation of women in agricultural sector to alleviate poverty and create employment opportunities.
- Adoption of synchronised cultivation.
- Project implementation for coffee and cashew nut production.
- Establishment of family nutrition garden in homestead and uncultivable fallow land.

Fisheries Sector

Fish Production

Bangladesh has achieved fish production self-sufficiency through the adoption and implementation of timely plans for the production and management of inland open water bodies, inland closed water bodies and marine water bodies. The GDP growth in the fisheries sector is 2.08 percent and the contribution of the fisheries sector in the overall agriculture sector is 21.83 percent in FY 2021-22. The government is implementing various activities to ensure supply of animal protein through increasing fish production. Fish farming in open water, conservation of endangered fish species, establishment of fish breeding and breeding sanctuaries, conservation of *Jatka*, eco-friendly shrimp farming and other activities are currently underway. The *Halda* river, a natural fish breeding centre, has been declared a '*Bangabandhu* Fisheries Heritage'. In addition, quality control activities have been intensified to preserve and expand the market for export of fish and fish products. Work is currently being done to provide registration and identity cards to fishermen across the country, as well as to develop a database to integrate rural fish farmers,

fishermen and fishermen with information technology.

As a result of successful implementation of far-reaching planning and development projects undertaken by the government in the fisheries sector, the fish production in FY 2020-21 stood at 46.21 lakh metric tonnes, which is 50.91 percent more than the total production (30.62 lakh MT) in FY 2010-11. It may be mentioned that the total fish production in the country was 7.54 lakh MT in FY 1983-84. Fish production has increased more than 6 times in 38 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.

In the recent Corona crisis, the government has continued to provide the necessary assistance to address supply complexities and marketing challenges. At this time fish is distributed with relief materials to the poor and helpless people to speed up the sale of fish, online fish marketing, fish marketing of fish farmers through mobile fish sales centre/growth centre. Out of the Tk. 5,000 crore incentive announced by the government to address the crisis in agriculture during the COVID-19 period, Tk. 153.72 crore has been provided to 6,438 fishermen in the fisheries sector till July 2021. Table 7.6 shows the trend of fish production during the period from FY 2014-15 to FY 2021-22.

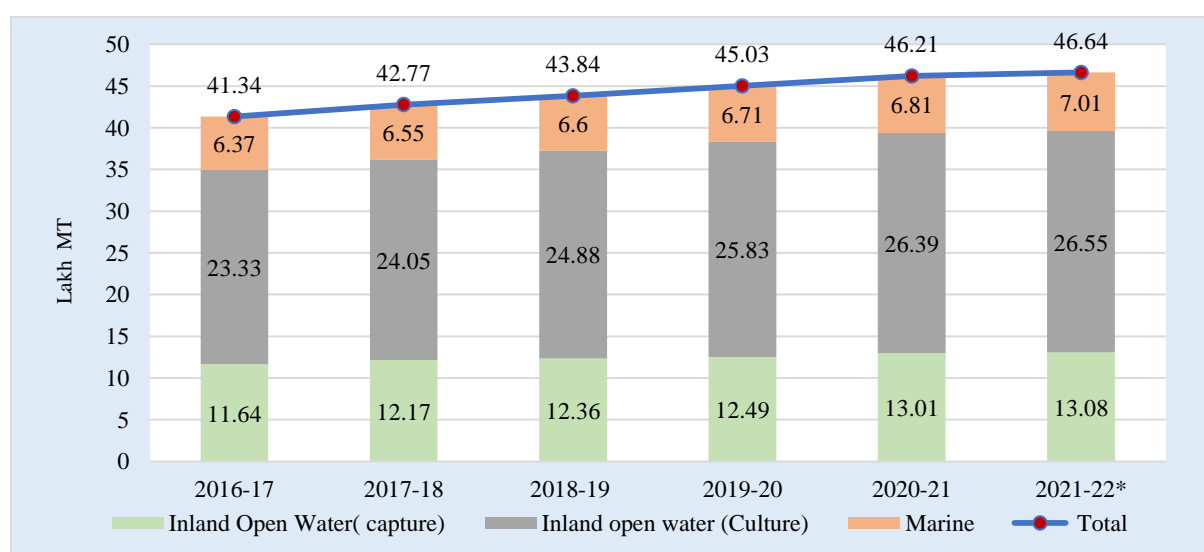
Table 7.6: Fish Production Trends in Different Resources

(In lakh metrictonnes)

Sector	Area (Lakh ha)	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22*
1. Inland									
(a) Capture									
(i) River & Estuaries	8.54	1.75	1.78	2.72	3.21	3.25	3.29	3.37	3.50
(ii) Sundarban	1.78	0.18	0.17	0.18	0.18	0.18	0.21	0.22	0.19
(iii) Beel	1.14	0.93	0.95	0.98	0.99	2.00	1.00	1.05	1.08
(iv) Kaptai lake	0.69	0.08	0.10	0.10	0.10	0.11	0.13	0.12	1.11
(v) Flood plain	26.93	7.30	7.48	7.66	7.69	7.82	7.73	8.25	8.20
Sub-Total (Open Water)	39.08	10.24	10.5	11.64	12.17	12.36	12.49	13.01	13.08
(b) Culture									
(i) Pond	3.77	16.13	17.20	18.33	19.00	19.75	20.46	20.91	21.05
(ii) Baors	0.055	0.07	2.08	0.08	0.08	0.1	0.11	2.27	2.33
(iii) Seasonal cultured water bodies	1.33	2.01	0.08	2.16	2.16	2.17	2.26	0.11	0.11
(iv) Shrimp /Prawn farms	2.756	2.24	2.40	2.47	2.54	2.58	2.7	2.79	2.78
(iv) Pen culture	0.833	0.13	0.13	0.13	0.11	0.12	0.13	0.14	0.11
(iv) Cage culture	0.001	0.02	0.02	0.02	0.04	0.04	0.04	0.05	0.04
(v) Crab			0.13	0.14	0.12	0.12	0.13	0.12	0.13
Sub-Total (Culture)	8.75	20.60	22.04	23.33	24.05	24.88	25.83	26.39	26.55
Total (Inland)	47.83	30.84	32.52	34.97	36.22	37.24	38.32	39.40	39.63
2. Marine Fisheries									
(a) Industrial		0.85	1.05	1.08	1.2	1.07	1.15	1.19	1.29
(b) Artisanal		5.15	5.21	5.29	5.35	5.53	5.56	5.62	5.72
Total (Marine)	-	6.00	6.26	6.37	6.55	6.60	6.71	6.81	7.01
Country Total	47.83	36.84	38.78	41.34	42.77	43.84	45.03	46.21	46.64

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

At the moment, hatchery-produced seed/fry are meeting nearly hundred percent of total demand for fish farming. However, it is often difficult to obtain quality fry from hatcheries due to inbreeding issues. 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 1,055 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
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 Programme for *Jatka*

Hilsa is one of the bearers and carriers of the tradition and culture of Bangladesh. Bangladesh is a role model in Hilsa production in the world. Hilsa alone accounts for 12.22 percent of the total fish production in Bangladesh. Hilsa contributes more than one percent to the country's GDP. The contribution of Hilsa as a single species is 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 is known as the country of Hilsa producing more than two-thirds of the world. The government has taken the following initiatives to increase the production of Hilsa and ensure sustainable production:

- Formulating and implementing Hilsa Fisheries Management Action Plan.
- Identifying 7,000 sq. km. major Hilsa breeding area in Bay of Bengal.

- 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.
- Declaring 3,188 sq. km. Marine Reserve Area adjacent to *Nijhum dweep*.
- Arranging awareness building and fish act implementation programme to stop Hilsa fishing, marketing and carrying for 22 days during the peak spawning season to protect Hilsa brood.
- Imposing 8 months (November-June) ban on *Jatka* fishing.
- Imposing 65 days ban on all kind of fishing in Bay of Bengal
- Developing the livelihood of Hilsa fishermen by giving VGF (vulnerable group feeding) and AIG (alternative income generation).

As a result of the above-mentioned initiatives and joint operations/mobile courts, conservation of

Jatka and implementation of Hilsa breeding protection activities, production and size of Hilsa have increased unexpectedly. In FY 2020-21, the production of Hilsa was 5.65 lakh MT, which is 66.17 percent more than the total production of Hilsa (3.40 lakh MT) in FY 2010-11. Under the social security programme, In FY 2020-21, a total of 56,224.88 MT. food assistance provided to 3,74 lakh *Jatka* families. VGF also given at the ban period of brood Hilsa. In FY 2020-21, total amount of 11,118.88 MT VGF food assistance were provided to 5.56 lakh families at the rate of 20 kg. In 2022, special combing operations were conducted in 17 districts (*Barishal, Bhola, Patuakhali, Barguna, Pirojpur, Jhalokhathi, Chandpur, Noakhali, Cox's Bazar, Chattagram, Laxmipur, Khulna, Bagerhat, Satkhira, Shariatpur, Madaripur and Munhsiganj*) to eradicate the misuse of illegal nets for fishing.

Management of Marine Fisheries Resources

To ensure effective use and control of marine fishing resources, the government is implementing special programmes and enacting rules and regulations. For the desired development of marine fisheries resources, the Ministry of Fisheries and Livestock has formulated a Short, Medium and Long Term Marine Development Plan of Action and several long-term initiatives are being implemented. Through effective management, extraction, conservation and development of fisheries resources in Bangladesh's coastal waters, the 'Marine Fisheries Act-2020' was enacted to enhance the country's income, create jobs and promote the Blue Economy. In addition, a draft of 'Marine Fisheries Policy 2021' has been prepared. The National Plan of Action (NPOA) has been formulated under the project titled 'Support to countries to address Illegal, Unreported and Unregulated (IUU) Fishing' to prevent IUU fishing with the assistance of Food and Agriculture Organisation (FAO) of the United Nations.

The Research and Survey vessel 'RV Mean *Sandhani*' have conducted 35 survey cruises till February 2022 in the Bay of Bengal and data has been stored for biological analysis. An area of 3,188 sq. km. in the area adjacent to *Nijhum* Island 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 set up at *Kalatali* in *Cox's Bazar*. Besides, sea weed and oyster culture is being piloted in 0.8 hectares coastal area of *Sadar upazila, Teknaf, Maheshkhali* and *Ukhia upazila* of *Cox's Bazar* district. This will open up new horizons of blue economy.

Export of Fish and Fisheries Products

Fisheries and fish products are one of the major export sectors of Bangladesh. Fish and fish products of Bangladesh are exported to 52 countries of the world including European Union countries, United States, Japan, Russia and China. The top 10 exporting countries are: Netherlands, Belgium, Germany, UK, China, India, France, USA, Japan and Russia. The Netherlands is the top importer of fisheries and fish products in Bangladesh. In FY 2020-21 Bangladesh earned Tk. 4,088.96 crore by exporting 76,591.69 MT fish and fishery products.

Livestock

The livestock sector makes an undeniable contribution to Bangladesh's economic growth, food and nutrition security, self-employment creation, and, most importantly, poverty alleviation. With the continuous efforts of the government, Bangladesh has achieved self-sufficiency in meat and egg production and has made promising progress in milk production. At constant prices, the contribution of livestock sector to the GDP in FY 2021-22 is 1.90 percent and the contribution of livestock to the overall agricultural sector is 16.52 percent. The role of this sub-sector is immense in meeting the

demand of essential animal protein of human body in daily diet. The government has already taken a multi-pronged approach to livestock development. Expansion of artificial insemination activities using semen produced for breed development, production and distribution of vaccines for disease-prevention, provision of medical services and diagnosis for livestock and poultry, supply of low-cost poultry, farmer

training and technology transfer, and entrepreneurship development, etc. are notable. The number of cattle and poultry in the country in FY 2020-21 stood at 563.30 lakhs and 3,658.50 lakhs respectively. 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	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	245.50
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	266.00
Sheep	32.06	32.70	33.35	34.01	34.68	35.37	36.07	36.80
Total livestock	535.90	539.72	543.57	647.45	551.39	555.34	559.26	563.30
Chicken	2553.11	2617.70	2683.93	2751.83	2821.45	2892.83	2966.02	3041.10
Duck	488.61	505.22	522.40	540.16	558.53	577.52	597.16	617.50
Total Poultry	3041.72	3122.93	3206.33	3292.00	3379.98	3470.35	3563.18	3658.50

Source: DLS, MoFL.

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 193.38 ml/day, 136.18 gm/day and 121.18

no's/year respectively in FY 2020-21. The production statistics of milk, meat and eggs during the period from FY 2014-15 to FY 2021-22 are summarised in Table 7.9

Table 7.9: Production of Milk, Meat and Eggs

Product	Unit	Production							
		2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22*
Milk	Lakh MT	69.69	72.75	92.83	94.06	99.23	106.80	119.85	94.62
Meat	Lakh MT	58.62	61.52	71.54	72.60	75.14	76.74	84.40	70.99
Eggs	crore	1099.52	1191.24	1493.31	1552.00	1711.00	1736.00	2057.64	1578.67

Source: Department of Livestock Services, ministry of Livestock and Fisheries, *Up to February 2022.

Artificial Insemination of Cattle

In order to increase the production and productivity of cattle, artificial insemination services are being provided across the country through 15,389 artificial insemination sub-centres/points. Over the past decade, artificial insemination coverage has increased from 28 percent to 55 percent. During the period under review, semen production, artificial insemination

and crossbred calf production increased to 142.58 percent, 151.49 percent and 227.50 percent respectively.

During FY 2020-21, 95.41 lakh doses of quality semen were produced and 90.64 lakh breed able cows/heifers are inseminated of which about 35.37 lakh crossbreed calves were born. By February 2022 in FY 2021-22, 64.85 lakh doses of quality semen were produced and 61.54 lakh

breed able cows/heifers are inseminated. During this period about 22.86 lakh crossbreed calves were born.

Vaccination and Treatment

In order to prevent diseases and reduce the financial risk of diseases, 31.16 crore dose vaccines for 17 diseases of cattle and poultry have been produced and implemented at the government level in FY 2020-21. To prevent trans-boundary diseases 24 animal quarantine stations are working at different river port, land port and airport. In addition, initiatives have been taken to establish Veterinary Public Health Labs including modernisation of Central and Field Disease Investigation Labs for control of Zoonotic Diseases to protect public health. In FY 2020-21, 10.93 crore livestock and 53,127 pet services and 9,282 disease surveillance activities have been conducted.

Budget Allocation for Agriculture Sector

The government is taking various steps for the development of agriculture sector to establish a self-sufficient and sustainable agricultural system. To ensure food security and keep agricultural production normal during COVID-19 situation, Tk. 24,345 crore has been allocated for the agriculture, food security and fisheries and livestock in FY 2021-22, which is 4.03 percent of the total budget allocation. With a view to

increasing agricultural production, Tk. 9,500 crore has been allocated in the budget of FY 2021-22 for subsidising fertilisers and other agricultural activities to support the farmers. Up to February 2022 Tk. 5,809.58 crore has released to provide subsidy on fertilisers and other Agriculture Inputs. Besides, an amount of Tk. 400 crore has allocated for agriculture rehabilitation assistance, out of which Tk. 299.30 crore has been released. In FY 2021-22, Tk. 150 crores has allocated for seed production activities.

An incentive package of Tk. 3,220 crore has been allocated 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 provide required agricultural credit to farmers and as of April 2021, Tk. 3,936 crore has been disbursed. 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 has been disbursed. 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.