

Draft



National Agriculture Policy 2018

Ministry of Agriculture

Government of the People's Republic of Bangladesh

1. Introduction

- 1) The work force in rural Bangladesh is majorly dependent on agriculture. Agriculture contributes to approximately 15.37% of the nation's annual income. Despite growing expansion of industries, 45% of the population in Bangladesh is dependent on agriculture. In the last four decades, agriculture has made a significant success. In developing the annual growth of the nation, agricultural sector has played a significant role. The country has seen unimaginable success in the paddy, corn, fresh vegetables whereas the country is hugely dependent on export for pulses, oil and spices. Due to various developed technology, specially increase in hybrid crops which have led to the availability of fresh leaf and vegetables all round the year. Likewise, the development in the agricultural sector through bio-technology has also helped the country to reach a milestone, and helped create an example in the Asian market. The development of agriculture is directly related to the upliftment of the poverty stricken population. In order to reduce poverty, agriculture has been the way to "Redemption of poverty and started for growth and development".
- 2) In contemporary times, due to increasing development of industrial and service sector; the share of agricultural sector in the national gross domestic product has reduced. Notwithstanding this, the livelihood of majority of the rural population is dependent on farming. The contribution of small farmers in increasing national food security is immense. In the past, a pressure have been created to increase production of paddy, wheat and other pulses due to which food and agricultural production has increased. Though acquiring food security has been possible to some extent, but to acquire good level of nutrition still remains a challenge. Thus, it is important to stress the increase of production of all varieties of crops according to agricultural policy.
- 3) In this recommended agricultural policy framework, the resolutions adopted by the related ministries like, Environment Policy 1992, National Forest Policy 1994, National Food Policy 1998, National Water Policy 1999, National Land Use Policy 2001, National Jute Policy

2002, Livestock Policy and Action Plan 2015, National Livestock Development Policy 2007, National Food Policy 2008, National Poultry Development Programme 2008, Seed policy- Biosafety guideline 2008, Bio-safety rule 2012, Southern Master Plan for Agricultural Development in the southern region 2013, Five year plan(2016-2020), Bangladesh Delta Plan 2100, National Organic Agricultural Policy 2017 have been taken into consideration. The Government of Bangladesh has always kept the agricultural sector in forefront, it has also invested considerable share in this sector. Due to such development, the culmination of report and programmes have been drafted into a policy framework named as “National Agricultural Policy”.

- 4) Bangladesh has been severely vulnerable to climate disaster. Climate Change has caused increasing problems like drought, flood, salinity, waterlogging, increasing temperature which have eventually affected crops. In different areas and during various season, such conditions have affected and worsened conditions of crops. In order to deal with such situations, we have to grow crops which can tolerate these adverse effects, innovate production strategy and expand these ways. Thus, it is necessary to develop with the help of modern technology disease resistant pesticides and nutrition rich crops. These have been discussed in details in the policy paper.
- 5) Majority of the crop yield of Bangladesh is comparatively much less to that of the advanced countries. Continued reduction of land and increasing population has posed a challenge to the country. As there is lesser chance in increasing production area; it has become important for us to focus how to increase our ways of production. In this case, it's important to innovate modern techniques to deal with the variation of challenges faced in the peasant lands.
- 6) At recent times, the determination of coastline has been an achievement for Bangladesh. The existing resources along the coastline of Bangladesh has contributed in accumulation of huge amount of revenue. It has also led to multipurpose utilisation of these littoral resources to acquire foreign revenue and also help the population depending on these areas to earn a living. Along with fishing, wet rice farming also can contribute a

lot. This topic has been given importance in this policy paper and has been discussed elaborately.

7) Before the formulation of a realistic and fruitful national agricultural policy it's important to evaluate the current farming condition properly. The elements in existing agricultural policies should be considered properly after discussing with people so that when further policies are framed they are implementable and fruitful. In Bangladesh, the existing advantages are optimal production and spread of research procedure, fit technologies, and better network of agricultural supply, labour force and interested farmers and experienced lineage of farmers. The existing opportunities available are commercial agriculture, agricultural mechanization, use of hybrid and biotechnology in agriculture, establish agricultural industry, integrated management system for nutrition and pest control.

8) In the agriculture sector, the country has a lot of weakness which needs attention. Production equipment desired for increasing productivity is lacking, lack of financial resources, green technology required for adverse climate situations is insufficient, limited infrastructure for agricultural export, limited agricultural loans. The other problems are climate change, growing barren infertile land, degrading environment and biodiversity, agricultural farmlands used for non-agricultural activities, etc.

9) The existing National Agricultural Policy was adopted in 2013. In course of time, along with accelerating the growth of crops several others issues have been addressed. It is important to strengthen the farmers on several challenging issues such as; lowering down of agricultural lands, depleting biodiversity, climate change, extreme temperatures, rise in process of agricultural equipments, and rise in price of agricultural products. Also, necessary steps to produce durable crops and also ones according to the format of changing climate are required. It is very crucial to be realist in the approach toward agricultural policies at present.

10) Due to use of same agricultural fields for various crops, the use of pesticides and chemical fertilisers are deteriorating the fertility of the soil

which is also leading to depleting quality of food products. The reason for this condition is lack of use of moderate and accurate pesticides/fertilisers. Good agricultural procedures can lead to less depleting condition of soil quality, better quality of food products and good export quality products. Thus use of organic fertilisers, integrated pests has got importance in the policy framework.

11) In the agriculture and crop sector, better quality seed production, infrastructure for better irrigation and good fertilisers, use of bio-technology, mechanization of agriculture, agricultural cooperatives and marketing, empowerment of women, youth empowerment, local agricultural methods and infrastructure, food security and use of research and development in agricultural sector.

12) The agricultural sector at present is semi-commercial. But, we have to focus more to make it commercial sector. To convert agricultural sector into commercial and cater to the needs of the growing population, modernization of agricultural sector is necessary. This will lead to creation of not only a lifestyle but also employment. Thus, it is necessary to encourage innovation of modernized technology, training and infrastructure.

2. Purpose of National Agriculture Policy

The foremost purpose of the National Agricultural Policy is crop productivity, increase in income, diversification of grains, and secure food production, nutrition security, provision of employment opportunities in order to develop the whole economic system.

Main Purpose

The main purpose of the Bangladesh Agricultural Policy 2017 is providing food and nutrition security, profitable, productive, environment friendly, durable policy helpful in achieving growth.

Specific points

The specific points of the National Agricultural Policy are:

- Increasing production of granulated grains ,food crops which eventually contribute towards food security;
- In the interest of farmers, rapid establishment of durable and profitable agricultural based art for local and export markets, basmati rice, potato, fruits, vegetables, etc. Encouragement
- Sustainable productivity and real income in rural areas has to be emphasized through increasing durability;
- Under the act ,“Crop varieties and rights of peasants” , the local technologies and innovative power of the farmers will be encouraged;
- In order to maintain stability of natural resources, even in agriculture green technology has to be used;
- In order to increase productivity, enhance the knowledge and skill of whoever engaged in agriculture;
- Reduce the use of manual labour force and focus more on mechanization; and
- Create human resource useful according to the hostile environment provide knowledge for expansion reforms.

3. Research on Agricultural Development

1. Development of Agricultural Research Management

Along with development of the Ministry of Agriculture, it is also important to establish other Ministries which are connected to this. The National Agricultural Research System (NARS) consists of 13 institutions which monitor the agricultural research development.

- It is the responsibility of the Bangladesh Agricultural Research Council(BARC) to coordinate along with other nursed institutions to develop accountability, improvements, human resources and asset management;

- According to the National need, termed research of 7-10 years will be prioritised , planned, monitored and also focus on quality increase has to be stressed;
- Through BARC, major steps of receiving international assistance in areas such as improvement of research and innovation of technology has to be taken;
- Unpleasantness in research has to be avoided also investment has to be made in research development. Also, in this field learning from the past research is also important;
- The Government can also be advised on the incentives and recognition of scientists who excel in this field ;
- In order to strengthen the foundation of research ,the scientists involved in agricultural research should be at regular intervals provided with adequate training and knowledge;
- Through the medium of innovation, the innovative technology could acquire the IPR status which will be looked after.

1. Variety Development

- Common breeding methods which has been successful have to increased over more agricultural farmland practices;
- In order to increase nutrient and productivity of major crops ,hybrid technology will be encouraged to develop the variety of those crops;
- The crops which are popular, unique and significant which have demand in market (local fruits, paddy),the development of such sectors will be encouraged;
- All industries related to breed development will be encouraged to work in an integrated way;
- Private sector which is related to research has to be encouraged to individually and through joint initiatives to take up such work.

2. Research in Bio-Technology

- Theoretically, high yield variety crops from other parts will be identified for gene regulation purpose, and also the results will be tested;

- At present, in order to break the yield ceiling , stress has to be made over necessary research procedures;
- Through the medium of biofotrification, the nutrition in several major crops has to be increased;
- Scientists have to be encouraged to innovate Genetically modified technology in research;
- Research related to bio-technology according to local and international guidelines has to be focussed upon;
- Scientists have to be also encouraged for excelling in developing stress tolerance mechanisms in various major crops.

3. Cultural Resources

- In order to develop breed, resources from different places, nation and abroad has to be collected and conserved;
- The assessment and information the resources has to be stored in a database , which can be used for further breed development;
- The desired importance of conserved forests has to be focused upon and information of how these to be used has to be encouraged;
- According to the suitable guidelines, the resources can be exchanged and exported and this should be encouraged.

4. Microbiological Research

- The identification of microbes, attribution and advanced variation in agriculture has to be focused;
- Innovation of useful microbes and their advantages in agriculture has to be stressed upon;
- The research related to increase in effectiveness of microbes has to be stressed ;
- Agriculture based microbe development will eventually develop related industries and people and would encourage them.

5) Climate Change

- Framework has to be made to protect different crop varieties from continuous climate change;
- Changing temperature is leading to water logging, droughts, flood and other issues and proper framework should be made to counter these problems;
- With changing climate, suitable methods and techniques which would contribute to increasing productivity will be encouraged;
- Suitable and fertile land resistant to harsh environment will be used for productivity, focus has to be on fertiliser management;
- The private sectors have to be encouraged and coordinated to produce disaster resistance breed, innovation of technology, expansion and management of agricultural products.

6) High price and garden centric crops

- According to the demand of local and export markets, breed development of high quality paddy is important;
- Proper research infrastructure development should be ensured for fruits and vegetables from abroad (strawberry, dragon fruit etc.)
- Other than the old methods and procedures, self life expansion of spices, vegetables, fruits can be carried through hybrid method;
- Research on beauty enhancing crops(bonsai) have to be encouraged and also private sector has to be involved;
- In advance to get high productivity of fruits, efficient and better ;
- Research has to be strengthened also for medicinal and valuable plants and their flowers/buds should be collected for breed development and other study purpose.

7) Natural Resource Management Research

- The pace to use farmlands have to studied and also fertile lands have to protected from getting depleted;
- After studying the fertile content of the soil, such crops have to be harvested and particular content of manure and fertilisers have to be used;

- The quality of water resources will be changing location wise, so after determining the amount and content of water at particular areas harvesting have to be done .

8) Obsolete and Seasonal crops

- In order to develop the obsolete and seasonal crops, breed improvement is required;
- Evaluation, advanced version selection, development of these crops have to be focussed ;
- The collection of production finance cost for obsolete and seasonal crops needs formulation of separate programme chart.

9) Seed Technology

- Research has to be focussed for new and possible seeds which can increase productivity;
- Research also should be focussed for management of seeds, remove diseases from seeds.

10) Innovation of farming and adoption Technology

- Training related to organic farming will be provided; the advantages and requirements of these will be involved in program of activities;
- Training for new agricultural techniques will be provided on farm.

11) Crop Zoning

- Due to change in climate, according to regional climatic conditions through GIS and remote sensing crop zoning has to be strengthened;
- Crop zone based productivity has to be examined properly, and for the development research has to be strengthened;
- For increasing productivity and income, crop zoning has to be initiated.

12) Use of barren land

- Identification and marking of fall lands are necessary;
- In order to increase cultivable land, the barren land have to be made fertile and cultivable in nature;

- The Government along with awareness have to also provide with suggestions;
- Special initiative has to be taken to turn these fall lands into durable and highly productive lands;
- In the dry seasons, crops have to be grown on the banks of the river for better productivity.

13) Pest management

- New pests and environment friendly pests have to be identified for research purpose;
- The residual effect of the pesticides have to be regulated;
- Research for developing organic pesticides and their use have to be focussed;

14) Farming System Research

- To increase the overall income of the farmers, production and development facility of basic amenities (house courtyard, roof, fencing, pond, fertilisers, pesticides) have to be looked after;
- Area based research has to be focussed upon and development framework also should be monitored;
- In order to increase productivity the framework for farming system research has to be spread to other regions as well;
- In the above mentioned activities, farmers, agricultural businessmen, producers have to participate in huge numbers;
- Training programs and awareness about the significance and advantages of farming system research has to be spread among all.

15) Post-production Technology

- Activities like collection of all kinds of vegetable and fruits, postharvest, establishing cold storage and packaging facilities have to be strengthened;
- Post harvest loss has to be addressed and reduced and research in this area has to be focussed.

16) Crop diversification, Crop intensity and difference in yield

- Increase in demand of consumers, and to gain considerable profit, it is important encourage related research to diversify crops in certain fields;
- Research related to increase crop-intensity has to focused to increase short term breed development of crops;
- The gap between the income and production cost of crops has to be reduced;
- In order to strengthen optimal production, crop diversification, crop intensity, and to reduce considerable gap between cost and income have to be favourable.

17. International Relations in Agricultural Research

- In agriculture research, international research centres can be encouraged to collaborate to provide techniques , methods and make significant development in research in this field;
- International systems and procedures can be known through BRC established with the help of Government;
- Through participation in international countries, the value of national methods and procedures will be known.

18. Research on Agricultural Mechanization

- After the consideration of deficit number of agricultural workers, more encouragement is been given to innovate durable, conservative, peasant friendly equipments.
- Innovation of such equipments would require low cost materials and low energy use, that is, focus has to be on green development.
- For irrigation and agricultural machines, encouragement to use solar power has to be stressed.
- Service providers who will
- Local equipment repairers and artisans will be encouraged

Technology Transfer and Agricultural expansion

The overall development of the farmer is dependent on how well the technology is connected and spread to the fields. The availability of modern technologies is required heavily to improve the area wise productivity and increase the overall income of the farmers. The slow expansion of agricultural technologies leads to a drastic fall in the quality. In order to have durable and nutrition rich products, it is important to commercialise agriculture. Thus information technology plays a vital role to transfer correct information and awareness. Along with these, one has to switch from the age old methods and techniques move towards a better and efficient technology transfer.

In Bangladesh, the experience of expanding agriculture has been done from a long time. The expansion of agriculture at the Government level happens till the union level. There have been existing reach and expansion institutes at district levels. The private sectors at present are also involved in expansion of agricultural activities. With the growing infrastructure of information and technology, there is also growing awareness and expansion of agricultural sector.

1. Agricultural Expansion

Expansion coverage

- Every farmer- marginal, middle, tenant, big will be provided with the opportunity of expanding agricultural activities;
- Women and youth have to be included within this sector and have to be encouraged;
- The Government institutions will collaborate with the private and NGOs on certain matters;
- Expansion of agriculture at urban level has to be stressed.

Communication Method

- Several committees like ATC,RTC,NATCC have been established to transfer important information also to gather financial assistance;
- Recommendation will be taken from regional level meetings at the local and regional level to reach the efficient farmers;

- Fertiliser Recommendation Guide will in a way encourage the farmers ;
- Research and expansion of agriculture has to be strengthened in a way to utilise the knowledge from each other;
- Certain groups will be responsible for services of expanding agricultural sectors;
- Seasonal wise,” farmers school “and “farm day” will be observed to increase the communication between farmers

Partnership

- It is very important to build partnership at national, regional, sub-divisional level. It is also essential to have both public and private partnership;
- The farmers will be informed about weather forecast from beforehand, which will be regulated by the government;
- According to the needs of the farmers, research for the required methods and equipments will be expanded;
- Demand based information and consultation would be provided.

Disaster management and crop protection

- Understanding the financial estimate of local farmers, to develop modern equipments for agricultural benefit;
- Crops which have disease rich crops , such have to be destroyed immediately and even seeds from such areas would not be further used;
- Lands prone to disaster, fallen, coastal areas have to be made cultivable;
- Crops affected in a particular area have to be stopped from being transferred to other areas;
- In order to tackle the disaster management situation, farmers will be provided with loan assistance at the current price;
- People also have to be made aware regarding the crop protection and disaster management procedures.

Regional knowledge/technology and experience

- The Government would recognise the regional techniques and methods useful;
- The need, experience and problems faced by the farmer individually or at collective level will be spread to worker expanding agriculture in the country;
- At times, it will also lead to have seminars to make others aware of the regional technologies and methods and have necessary discussions.

Farmers' Association/club

- Associations should be established at regional and rural level to expand the agricultural techniques;
- Through these associations, the farmers will be given accurate information about what crop is beneficial for a particular region;
- Regional wise such associations would help to resolve immediate problems which would eventually encourage farmers to form such clubs;
- The Government would provide equipment assistance, awareness, financial assistance to farmers.

Conservation of environment and natural resources

- Use durable agricultural products which are not affecting the environment;
- Opting for such ways to maintain the organic content of the soil ;
- Farmers should build compost, also produce organic manure with good pest content useful for the fertility;
- To increase organic content, use bioslurry, manure from rural and urban areas, poultry manure;
- For irrigation purpose, the water resources used should not be polluted ;

Seed technology

- To hold seminars with farmers along with government institutions which produce high yield variety seeds;
- The farmers have to be encouraged about high quality and better productivity breed development;
- The private sector will be encouraged to involve in developing high quality seeds along with government sectors which are contributing in expansion of these sectors.

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Ingredients

The need for better quality products is increasing day by day. In order to have better quality of products, certain products have to be used at particular time period. Seeds, manure, irrigation, pesticides, agricultural equipments, also energy, financial resources and labour are required. With the proper guidelines from the Government, the agricultural sector has been able to develop a lot. Food security has been attained with the help of pest management. With the depleting environment condition, climate change the diseases in crops are increasing day by day. In order to provide food to the growing population, the following should be used to increase productivity.

Seeds and saplings

- The Government would play an important role to maintain the quality of seeds;
- At regional level, national level it is important to stock manure for emergency purposes;
- In order to increase the quality of fertility of soil, domestication of cattle will be encouraged;
- The efficient use of urea as a manure has to be emphasised;
- The farmers have to be trained to use balanced, less costly and organic manure;

Seed enlargement, distribution and seed industry

Manure (Chemical, Organic, Microbe) (Repititon)

Repel pest and pest control

Irrigation and water facility management

Loan

- The small and middle sized farmers have to be encouraged by providing loan facilities;
- There should be easy terms and low interest charge for loan re-payment;
- Incase of destruction of crops during natural calamities, the loans have to be reduced by the Government;
- The Government will not only provide loan but also technical support to farmers.

Agricultural Mechanization

- Development of small user friendly equipments will be encouraged;
- At national level production units for equipments will be set up;
- It is important to produce consistent and earth socialization equipments for better productivity;

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Special Regional Agriculture

Due to continuous climate change the agricultural sector of Bangladesh is hugely affected. The southern region is affected by tides, waves and water logging, the north and south-west are majorly drought prone areas, the northern region has majorly extreme cold temperature, and the south east is majorly mountainous terrain. The country is also affected by cyclones such as Aila, Cidar which eventually water log the farmlands and destroy the farmlands. In order to counter such conditions, adaptive measures gave to be developed along with innovative technology to increase and develop agricultural sector.

Coastal Farming

- Fallen and barren land have to be brought under cultivation;
- Focus should also be to produce vegetable and fruits in these areas;

- Crops resistant to the tides in the areas have to be produced (which are minimum more than 50 cm)
- Research has to be strengthened on the soil content of the coastal areas;
- The crops have to sown, irrigated and harvested at proper times;
- The fertility of the land have to increased with the help of organic and green manure/fertilisers;
- Houses near these areas should have year-wide, farming of various fruits and vegetables;
- In order to protect crops, several other assistance has to be taken from institutions and private sectors;
- The farmers will be informed about the weather forecast in advanced in order to protect the crops.

Tropical area farming

- Places with more wind and extreme temperature should focus on crops and seeds which are resistant to such climates;
- Advanced kind of seeds and crops will help to reduce the risk aversion in such areas;
- Certain kind of crops have to stopped from being cultivated in these areas;
- Awareness regarding weather and help during calamities should reach these areas;
- Information should be spread through TV Channels and Community radio systems;

Mountain farming

- In these areas, crops according to the needs of the people in mountains should be cultivated;
- Small falls and streams in the region would be used for agricultural and household purposes;
- Through digitization, the government would try to spread the knowledge and awareness;

- Focus will be grow more ginger and turmeric bushes;
- Through Government assistance, nursery owners will be provided training for small agricultural activities;
- In order to regulate the fair price, storage houses have to be established;
- Special training will be provided to interested farmers regarding efficiency.

Extreme hot and cold temperature

- Special climate resistant crops have to be harvested;
- Scientists have to be encouraged to research about crops for extreme hot climate(like wheat);
- For extreme temperatures, it is also necessary to have required procedures and equipments;

Cyclones and tides

- Through improving digitization, the government will provide awareness to farmers beforehand;
- Area with cyclones and tides have to produce such resistant crops and research also have to be focussed;
- Breed development according to the area has to be done and conservation of seeds for future purpose has to be stocked.

Drought

- Less costly equipment production has to be stressed upon by the Government;
- Farmers will be encouraged to grow crops which need less water ;
- To increase the water holding capacity of the soil, organic and green manure has to be used;
- Water conservation during rain has to be made compulsory in dried ponds, drains for further use;
- Irrigation procedure with less water use have to be focussed upon;

Thundering

- In order to protect crops and lives, the government would focus on growing tall trees such as (Plum tree, Beetle nut tree)
- In the thundering prone areas, the Government will be focussing on creating agricultural forestry to risk ;
- Beforehand forecast will be given and made aware in order to protect both crops and lives from thundering;

Water logging

- Breed development of Water logging resistant crops have to be focussed upon and farmers have to be encouraged;
- Research for water resistant paddy is also been focussed by the Government to develop agricultural sector in such areas;
- In order to increase the overall production, farmers have to be encouraged for cultivation of fish and poultry farming;
- The farmers have to be trained well and made aware about the problems of such areas and how to tackle with these.

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Specialised Agriculture

Roofing Agriculture

- Attention has to be drawn towards roofing agriculture;
- Research related to this field have to be encouraged;
- To spread roofing agriculture, awareness programs have to be framed;
- Low interest loan assistance and incentives have to be provided;
- In research and development, both public and private sectors have to take the joint initiative.

Hydroponic Agriculture

- Through this fallen land, water-logged areas, roof tops have to be made cultivable;

- Hydroponic agriculture related research has to be done and also encouraged;
- For agricultural production, banks will provide low interest charged loan assistance;

Mushroom and other high price products

- The Government will try to create international market for high price products;
- People have to be made aware about the importance, use and advantages of these crops ;
- To encourage private sector, the government will provide loan assistance to these sectors;
- The durability and productivity procedures have to be developed of these crops.

Precision Agriculture

- The export of equipments and amenities required for precision agriculture,
- The Government would try to generate financial assistance and also to encourage
- After understanding the techniques, the government should identify the areas and improve the productivity.

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Secure Food Production

Food security is very essential to have a healthy and strong life. Unsafe food leads to degraded quality of productivity of labour. The government has decided to follow the following policies to ensure food security of the population.

Increasing Capability

- The Government is emphasising on establishing Microbiology/Food Testing Laboratory in order to curb the bacterial attack on food products.
- Through various training programme, the government is trying to increase the awareness and research on food security, expansion, marketing and will also be able to emphasise on increasing human resource.

Research, Awareness and Training

- The Government will supervise and control the sale of adulterated and unwanted pesticides and also would punish the offenders according to the related laws.
- The Government will start certification works and good planting initiatives;
- The exact duration to use the pesticides during harvesting of crops will be given;
- The farmers have to be trained to use sterilised equipments during harvesting crops;
- Cleanliness of packaging house, storage locations and tools has to be monitored. Other provisions and infrastructural advantages also have to be kept under regular monitoring.
- New pests, secure pesticides development and training of partners food production has to be assured;
- The Government would discourage the harvesting and expansion of such crops which are harmful for health;
- Confirmed health preservation, transport system also has to be provided;
- Research and activities related to cross-border pests and their expansion has to be stressed.

Agricultural Marketing

At the farmer level, to get the fair price for agricultural products is the base for agricultural development. The pre-conditions of agriculture commercialization are effective and efficient manufacturing conditions. Method of agricultural marketing of processed products generated is connected to consumers. The manufacturing conditions of the products lead to overall economic development and play an important role in it. Due to unique significance of agricultural products, productivity has increased and the fair price of the products has been maintained, in which manufacturing conditions have a significant role. Effective and efficient management system leads to the reach of products to consumers readily available. Through establishing effective systems of manufacturing, the Government will be helping farmers to bargain and receive fair price for their products.

1. Agriculture Manufacturing Infrastructure Development

a) Agricultural Industry and export

- The Government would regulate the supply of products from rural markets to wholesale and retail traders which connects to the consumers;
- Durable Supply Chain will be created between the producer and the consumer;
- To develop the market of agricultural products, both public and private sector enterprises will be encouraged;
- In order to great easy availability, fresh and durable agricultural products, vapour treatment plant, hot water treatment, specialized vegetable and cold storage and packing house will be established;
- Proper storing houses and cold storage will be established to make the products durable;
- Try to digitalise the small rural markets;
- To test the quality of the products, laboratory and other needful requirements will be made available.

b) Demand based production

- In terms of the demand in market, precise production of agricultural products have to be made;
 - The quality of the products has to be determined and increased in order to maintain the export market through good agricultural production methods.
- c) Market Information search and broadcast services
- The collection and spreading of information related to agricultural products and materials for farmers, producers, businessmen, entrepreneur and consumers have to be encouraged;
 - Through the connection of consumers and farmers, the fair price of agricultural products will be determined;
 - The Government will provide with the initial technical support required for farmers and producers to collect the origin of agricultural produce;

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- In the light of marketing , the cost of produce of agricultural products and their export, will include the cost of wholesale and retail at joint level;
- The e-marketing of products, spreading of these in super markets, wholesale and retail markets, monitoring of their price is required;
- The price in the coming future will be decided according to the demand and supply of the agricultural product.

2. Agro-products processing industrial expansion

- The Government would encourage industries based on agriculture production;
- During the processing of agricultural products, the businessmen and entrepreneurs related to this field will be provided with technical support.

a) Commercial Agriculture

- Through production of profitable agricultural products, commercial agriculture will be encouraged;
- The Government would help group based to expand commercial agriculture and improve productivity facility;
- Through connection of farmers and consumers, the fair price of products will be determined;
- To encourage farmers for commercial agriculture, farmers will be provided with incentives and loan assistance.

b) Manufacturing of export goods

- Before searching for export markets, the government would regulated the need of products in the market;
- The products with high price and better productivity will be encouraged;
- The private sector will be encouraged to produce the demand based export products by recognising and providing assistance to them;

c) Demand based production

- The Government will set the amounts of productivity limit of demand based products in local and export markets;
- Keeping in mind export market, good agricultural methods have to be followed and increase in quality have to be prioritised;
- Farmers have to be encouraged about commercial agriculture and incentives and loans have to be provided to them.

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d) International Market Development

- The Government is trying to diversify agricultural products and to search favourable markets abroad;

- To spread environment friendly agriculture/organic farming products to national and international markets will be encouraged;
- Export market development and information and data retrieval regarding this would be carried through e-infrastructure.

3. Policy support

- “ In the expansion process of agricultural products, agricultural expansion laws and rules will be strengthened and updated”;
- In order to manage effective market, government and private partnership have to be coordinated and encouraged;
- The Government will establish Agriculture Monetary Commission to regulate the fair price of products for the farmers, also so that consumers can purchase according to their capability and strengthening the expansion of agriculture;
- The Government would provide technical support to individual entrepreneur and farmers’ with Agricultural Trade Act;
- Through cash assistance the Government will increase the opportunity of agricultural trade in national and international markets.

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12. Empowerment of Women

In our food and nutrition security framework, activities, and increasing economy, agriculture plays a major role. Women have never been pictured as contributing to this sector. But involvement of women in this field has been one of the major purposes of Bangladesh. It is important to build them as human resources. Also to counter rural migration to urban areas, more development has to be made in this field.

- Women will be provided with assistance to regulate the demand of food and nutrition in a family;
- Women will be encouraged and provided with training for simple agricultural activities;
- Encouragement to innovate women-friendly agricultural technology;
- In planning how to counter food security challenges, monitoring and implementation, women will be playing an important role;
- In expansion of products and marketing, women have to be given role;
- Discrimination of wages for women farmers have to be reduced, and men-women pay have to be made equal;
- To uplift the economic condition of women, small cottage industries have to established;
- The women farmers should be provided with equal opportunities such as farmer card, fertilisers, seeds, loan assistance in order to encourage them;
- Women have to be trained regarding disaster management.

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13. Poverty Reduction and Life Improvement

At present, in semi-commercial agriculture; the farmer will be able to fulfil the demand for cash needed in a family and selling the products. Several other measures taken to uplift condition of life, poverty reduction and attaining food and nutrition security can be done through agricultural and non-agricultural sectors.

Garden farmers

- The Government would encourage garden farmers;
- The breed development and expansion of vegetables and fruits which can be easily grown in garden will be the major step. Also, this will eventually lead to food and nutrition security;
- The manure leftover from garden farming can be utilised to increase the fertility of farmlands;
- Women will be encouraged for betel leaf farming, this will improve the breed quality, expansion and encouragement for such farming activities;

- The Government will try to make people aware of the benefits of such kind of farming.

Hand Cottage Industries

- The Government would encourage and provide loan assistance for several hand cottage industries related to (bag making, making of flattened rice, puff rice etc.);
- Women will be trained to make jam, jelly , pickles with the available fruits and vegetables;
- The Government would encourage hand cottage industries through , training people, spreading awareness, and expanding such hand cottage industries;
- The products from hand cottage industries will be exported to local and other markets which would eventually help these to expand.

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14. Youth Power in Agriculture

The future of agricultural development will be empowered by the youth. The youth will be educated, skilful and informed.

- “Youth Farmers’ Organization “will be a medium through which youth will be encouraged to join agriculture;
- Profitable agricultural sector identification, high yielding crops, and through medium and small industries self employment of youth will be encouraged;
- Through incentives, financial loans and recognition the youths will be encouraged more;
- Though training, by testing their skills, interests, and the youths will be made the future agricultural producers.

15. Investment in Agriculture

The establishment of proper framework of research and development, development assistance, agricultural equipments, creating efficient human resources would create a profit oriented, environment friendly and food secure oriented sector. Increase in productivity will lead to reduction in poverty in the society. Also providing favourable conditions, loan assistance will lead to better quality life and reduction of poverty levels.

- The Government would allocate funds for research framework and technology development;
- The Government would allocate fund for developing irrigation and draining system ;
- For establishing agricultural industries the Government would provide easy term loans;
- The Government should make arrangements to create efficient human resource;
- Marginal, tenant farmers should be provided with proper financial and loan assistance;
- In order to regulate fair price of commodities, market coordination groups will b established;
- The sale of agricultural equipments, paddy/corn crops, establishing vermin-compost such activities will be encouraged;
- In order to increase productivity, modernised technologies have to be used in collaboration with private sectors.

16. Agricultural Co-operatives

- The Government by not changing the land ownerships is encouraging the marginal farming, producers and entrepreneurs;
- In subdivision wise production, the government would provide financial and technical support to encourage these activities;
- In cooperative , crops which have high yielding and productivity will be prioritised by the government;

- The Government will encourage cooperatives to establish fair price of products based on the farmers;
- The Government would expand the services of Agricultural co-operatives.

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17. Information and Communication Technology

To spread the available technology amongst the farmers, the development of agriculture is necessary. Through establishing digital Bangladesh, information is spread over areas about several agricultural activities. Such use of technology is been used for the development of agriculture also, and the use of IT has increased. This technology is really helpful to spread information about durable products, and to gather information regarding agricultural activities.

- Establishing community rural radio stations in order to spread awareness and agriculture related information to several areas;
- To receive and spread agriculture related information ,GIS and Remote Sensing Technology will be used;
- The Government would telecast agriculture related programs everyday at a specific time in TV Channels;
- Through various cell phone network companies, information can be spread related to agricultural activities;
- Agriculture Information and Communication Centre will be established. Also, several e-agriculture service can be established;
- To publish agriculture based news in newspaper/magazine(online also);
- Establish separate agriculture based radio and TV Channel(24 hours);

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18. Labour in Agricultural Sector

The service sector is playing a vital role in the GDP than the agricultural sector. The use of technology is increasing with the mechanization of agriculture. Thus, labour in agricultural sector is reducing. In the last 10 years, women have started playing an important role in this sector. With the overall income

increasing, income from agricultural sector is also high. Through providing dignity, welfare of labour and recognition, the Government is trying to energize the labour force in agricultural sector.

Enthusiasm

- The Government will recognise and provide respect to the agricultural labour force;
- Labour development will be included in the programs;
- Through grain intensity and diversification, the government would allow the labour force to establish institutions year wide;
- The Government would also establish region wise farmers association;
- The farmers will be sent abroad to learn from other experiences and to encourage them.

Labour welfare

- In risky agricultural works(such as application of pesticides, use of heavy, edged ,rotating equipments, child and women labour force has to be reduced;
- Government would not discriminate in wages according to gender;
- The required basic minimum wage will be determined by the Government;
- The Government would try to incorporate the agriculture labour welfare in the list of programs;
- Funds will be raised; loans raised ad guidelines made for the poor and deprived farmers.

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19. Collaboration and Cooperation

a. Government office stage

- At the national level, several ministries(land, water, food, trade, industries, fisheries ,ministry of disaster and relief) along with the directorate , they will try to properly implement the policies and also increase production ;

- The Government would focus more on developing irrigation, and reducing water logging and extraction;
- During any emergency related to agriculture, the Government would form a committee to deal with the situation.

b. Implementation stage

- The existing problems can be dealt through proper agricultural research, expansion, marketing and production;
- The agricultural research institutes should field wise mark the problems faced and should work to resolve these issues;
- The Government institutions should work towards charting out the price of products according to the demand and supply in the market.

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c. Public and private cooperation

- The public institutions along with the interested private ones should jointly contribute towards research, expansion, marketing;
- The Government should conduct training programs and conferences related to developed technology and innovative breed development
- Private sector initiative to contribute towards research and expansion will receive cooperation from public sector;
- The public and private sector will take joint initiative to resolve the regional problems.

d. Regional and International Cooperation

- In breed and technology development, the Government will take help of the regional institutions;
- The Government would exchange innovative technology in lieu of experience from neighbouring countries;
- The Government would invite the international community for functional research.

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20. Public and Private Partnerships

Varied agricultural environment, varying crop adaptation, differing fertility related reason is the cause for differing crop production. Due to climate change, calamities, it affects crop production a lot. Such problems can be solved through joint partnership of public and private and also individual entrepreneurs. Along with several other problems, the social ties will be solved. Through joint initiative, there will be growth in agricultural sector.

- Through joint initiative, mechanization of farms has to be increased;
- Based on partnership, the Government will take initiative to export and develop sales of agricultural products to abroad;
- Through joint initiative, the Government will try to do agricultural research, expansion, training and infrastructure for production can be encouraged;
- The Government will take initiative to market agricultural products based on partnerships;
- The offspring and small plants will be used to feed the animals, for small art and will be used for fuel.

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21. Miscellaneous issues

Intellectual Property Rights

- The Government will help and encourage organisations/individuals with innovation and technology to acquire IPR and patent;
- By providing incentive and royalty to invented technology, IPR will be a source for employment;
- In order to rear intellectual development, invention capability, the Government will felicitate Scientists who excel in the fields every year;
- The Government would also encourage and fund service providers to travel abroad to research and also develop their skills in innovation.

Geographical Indication

- The identification and processing of Geographical Indication (GI) crops and their conservation will be the responsibility of the Government;
- Increasing awareness and durability in production of GI products has to be emphasized;
- People will be encouraged to increase production, export of such products to abroad.

Non-Agricultural Activities

The equipments related to agriculture, small cottage industry, processed food and other small business should start including local and rural small farmers; women should play an important role in this matter.

- The farmers who have less income should be included into non-agricultural activities in order to decrease the rate of poverty ;
- Help will be provided to poor farmers in areas such as; agricultural tourism, mechanic service, income during non-season;
- By using agricultural products , employment has to be increased;
- The rural population has to be made aware of non-agricultural sector and has to be shown of the opportunities in such sectors.

22. Importance/Preference of Bengali Language

After the implementation of the notification, the Government will be able to publish a translated version in English. In case there is any dispute between the Bengali and English text, the Bengali one will be considered acceptable.

23. Conclusion

In contemporary times, Bangladesh agricultural development is an unequalled instance in Asia and the whole agriculturally develop countries. From concerns of food crisis to enriching food quality, Bangladesh has been able to attain the fulfilment of the food and nutrition of its population. Originally dependent on agriculture technology,

The Agricultural Policy was the initiative of the Ministry from 2013 onwards. The Government has shown the report of the proper implementation of the policies, with the success rate of the policies. In the economic development of the country, agriculture has been able to contribute 7 percent to the overall economy. Although in the recent years there has been a stagnant in the growth, which has been observed.

The Agricultural Policy 2017 has been made from the past experiences, evolved knowledge and the several bizarre issues. Especially regional wise and sub division wise improvements of technology and procedures have been taken into consideration to increase productivity. This policy framework would tackle the climate change problems, reduce poverty situation and contribute to increase overall economy.