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Short Commentary

Food Security Challenges Need to be Resolved

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Human society has been enlightened by the light of civilization through the introduction of the agricultural system. The agriculture sector has been making an important contribution to the development of the rural economy, food security, employment, poverty alleviation and self-reliance for a long time. Agricultural-based economic activities of the people of Bangladesh were all covered by agriculture. Industry and trade-services sector developed significantly after independence, but for a long time, these too were dependent on agriculture. As a result, agriculture has become the mainstay of this country's economy. And this success has been made possible by the labor of farmers, the supervision of agricultural extensionists, the research of agricultural scientists and the combined efforts of various public and private organizations. In addition to continuing food production, ensuring sustainable production, producing nutritious crops, preventing food wastage and ensuring food and nutrition security for every human being, it will start a new trend in the economy of Bangladesh.

At the time of Bangladesh's independence, the population of this country was about seven and a half million, for whom food supply was not sufficient. As a result of successful adaptation of agricultural production system to natural disasters and climate change, Bangladesh has emerged as a role model for agricultural development in the world by continuing food production. To ensure nutritional security, more than one and a half hundred different crop varieties have been developed by the national agricultural research institutes with suitable technologies, which are meeting the food and nutritional needs of the country along with increasing the overall agricultural production of the country. Apart from this, Bangladesh has been able to develop flood, drought, salinity tolerant crop varieties, floating farming, diverse crop production, transgenic varieties, disclosure of jute genome sequence and intellectual property to combat climate change.

Since independence, Bangladesh's rice production has more than tripled, wheat has doubled, vegetables have increased fivefold, and maize has increased tenfold since independence. Agriculture in Bangladesh today has been transformed from subsistence agriculture to commercial agriculture as a result of increased production of staple food grains. Bangladesh ranks 3rd in rice and vegetable production, 2nd in jute production, 7th in potato and mango production, 1st in hilsa production and 2nd in fish production. Bangladesh is now self-sufficient in meat and egg production and on the verge of self-sufficiency in milk production. This achievement of Bangladesh at the critical stage of the global food crisis has shocked the world. International organizations including the United Nations are promoting Bangladesh's success as an example to the world in increasing agricultural production and ensuring food security.

Agriculture now contributes 11.50 percent to GDP and 40.6 percent to employment. In the fiscal year 2022-23, the export earnings of agricultural products were 84.3 million US dollars. In the first quarter (July-September) of the current financial year 2023-24, the income from the export of agricultural products was 25 crore 74 lakh 90 thousand dollars, which is 22.13 percent more than the target. Almost all industries are directly or indirectly dependent on agriculture. A study found that if agricultural GDP per worker increases by one percent, the incidence of poverty decreases by 39.0 percent. In the light of the United Nations declared SDG 2030, Vision 2041 and Delta Plan 2100, the government has adopted other timed action plans including National Agricultural Policy 2018 and 8th Five Year Plan. To ensure food and nutrition security, agriculture policy

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has given importance to the use of modern technologies like nanotechnology.

To achieve self-sufficiency in nutrition, the scientists of the country's agricultural research institutes have developed various varieties of fruits and vegetables, including rice, as a result of their continuous and continuous research. As a result, vegetables and fruits are cultivated throughout the year, which plays an important role in meeting the overall nutritional needs of the country. Agricultural research institutes are using various nutrients (zinc, iron, protein, minerals including essential nutrients of the body) to provide nutrients through rice, adding to rice according to the body's needs, supplying or increasing the amount and using the world's latest biofortification and GM technology. Zinc-enriched rice varieties have been developed, and research on beta-carotene-enriched golden rice is ongoing. In addition, it has been possible to meet the nutritional needs of the people of the country through the development of various varieties and technologies of high-yielding and nutrient-rich vegetables, fruits, wheat, pulses, oilseeds and pulses.

The Ministry of Agriculture is working on the production of various essential food-rich crops through the use of biotechnology in the agricultural sector, integrated pest management, balanced fertilizer management, agricultural mechanization, and biofortification. Agricultural processing industries are being developed in 100 special economic zones across the country to enrich the country's export sector. As a result which agricultural products or food products will meet international standards and massive employment will be created. In the current fiscal year 2023-24, the government has allocated 22 thousand 528.93 lakh taka for the welfare of marginal and marginal farmers through various crops under the agricultural rehabilitation and incentive program. Efforts are underway to continue the upward trend in agricultural productivity by increasing investment in the research sector and providing various incentives to create laboratories, infrastructure, and higher education and training opportunities.

Under the digital program of the government, clicking on the integrated digital service tab will provide 45 citizen services of the Ministry of Agriculture and 17 subordinate departments/organizations. Digital Bangladesh's progress has been strengthened with the introduction of 'e-Agriculture'. A total of 499 Agriculture Information and Communication Centers (AICC), Agriculture Call Center (16123), AIS Tube, Agricultural Information Exchange, Farmers Friend Phone (3331), E-Books, Online Fertilizer Recommendations, E-Irrigation Services, Farmers Window, Farmers Digital Addresses, digital agricultural calendar, e-services for seed sales, community radios, etc. through various mobiles and websites to quickly share agricultural information and make agricultural information available to all. Online Crop Zoning Information System software based on GIS (Geographic Information System) technology has been developed for crop utility assessment and crop zoning. Modern agriculture will be more prosperous with these immense possibilities of information technology along with the youthful energy of young farmers and entrepreneurs.

Good agricultural practice policies have been formulated to increase the export of agricultural products while ensuring a safe and nutritious food supply. An International quality accredited lab and modern packing house have been set up on two acres of land in Purbachal. In addition to increasing food storage capacity, the Ministry of Food is constructing paddy silos and steel silos to ensure fair prices for their produce by purchasing paddy directly from farmers. The government plans to produce 40 percent of the oil demand locally within the next financial year 2024-25 without reducing the production of rice. Along with the government, various private organizations and even mobile operator companies are coming forward to make agriculture more farmer-friendly by digitizing it.

In the coastal areas of Bangladesh, arable land is continuously becoming salinized and causing waterlogging as salt water from the sea enters the agricultural land due to tides tidal waves and cyclones. Food security is likely to be threatened if rice production is not satisfactory due to flash floods in Howar and various regions of Bangladesh, drought in Barendra region and increasing salinity in southern regions. The total arable land in the country is about 14 million hectares, of which 2.6 million hectares are flood-prone. In addition, every year 30 to 40 million hectares of land are affected by drought of various levels. According to Delta Plan-2100 of Bangladesh, about 70% of the country's area is within 1 meter above sea level. Sea level may rise by 1 meter by 2050. As a result of which about 3000 million hectares of land can be permanently lost and the total production can decrease by about 30 percent.

Global warming is having adverse effects on marginalized populations, agricultural yields, changes in nutrients and productivity across the world. According to experts, arable land is decreasing at the rate of about 0.7 percent every year due to urbanization, industrialization and construction of homesteads for increased population, while the population is increasing at the rate of 1.47 percent every year to about 23 lakhs. Due to the war situation, the market of wheat, one of the main food products in many countries, and the price of refined oil have increased alarmingly. Various crises have arisen in the supply of fuel oil and natural gas. Gas and oil-based power generation systems, production of chemical fertilizers and other products have been adversely affected. All must play a strong role in diversifying production and equitable distribution of food systems to provide food and nutrition for a growing global population by expanding the scope of inter-state cooperation.

As a result of the continuous progress and success of science and technology, the food situation of the country is currently satisfactory, but in the future, it will become more difficult to cope with the pressure of increasing population and decreasing agricultural land. Although the food production deficit in Bangladesh has been met, many people are dying due to various diseases due to malnutrition. In line with the Eighth Five Year Plan, National Agricultural Policy, National Seed Policy, National Food Policy and SDGs, to provide nutritious food security to the people of the country, safe food production to avoid public health risks, creation of fruit gardens in hilly areas for backward groups and expansion of vegetable plantations and underdeveloped fodder and Several steps need to be taken including integrated agricultural support schemes in Howar region. One and two crop fields should be converted into four crop fields and cropping intensity should be increased. To ensure safe food, public awareness should be created on what to do to keep food safe and nutritious during production, marketing, processing, cooking and serving.

There are many challenges in the development of sustainable agriculture due to limited arable land, adverse effects of climate and various natural disasters in this populous country. To continue the trend of achieving success in facing these challenges, more investment and partnership are needed from the government institutions as well as the private sector. Every inch

of cultivable land in the country should be ensured to grow different crops according to season by following advanced technology. As a result, economic development will continue by doubling production and increasing income. In the next decade, all countries of the world will work to implement the goals of sustainable development, through which it will be possible to end all forms of poverty of the people by achieving economic growth. Bangladesh will be a proud partner of a poverty-free country and a hunger-free world by increasing food production through modern agricultural management through the formulation of better social security management strategies, e-commerce and digitization.