Study of

Agro Industries in Bangladesh

BRAC University

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Submitted to:

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To

Hasan Maksud Chowdhury

Assistant Professor

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Subject: Submission of the Project Paper

Dear Sir

It is indeed a great pleasure for me to submit my project paper, which is based on, "**Agro Industries in Bangladesh.**"

I have tried my level best to present an effective report which will create various opportunities in the field of finance and analyst to develop effective financial strategy.

I am confident enough that this report will create an opportunity to understand the value of Agro industries in Bangladesh and how this influences to the community of Bangladesh.

With Regards

Md. Rezaur Rahman

13264056

Certificate

This is to certify that the project report on "**Agro Industries in Bangladesh**", submitted for the award of getting degree of Master of Business Administration with specialization in Finance to the BRAC University is a record of bona-fide research carried out by Md. Rezaur Rahman under my supervision. No part of the project paper has been submitted for any degree, diploma, title or recognition before.

Hasan Maksud Chowdhury

Assistant Professor

Master of Business Administration

BRAC Business School

Declaration

I, Md. Rezaur Rahman student of Master of Business Administration with specialization in Finance of BRAC University do hereby declare that the project report on "**Agro Industries in Bangladesh**" has not been submitted by me for any degree, diploma, title or recognition before.

Md. Rezaur Rahman

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Acknowledgement

At first I would like to express my gratitude to Almighty Allah who makes me able to prepare this report with good health and sound mind.

Then I would like to express my deepest gratitude and warmest appreciation to my project supervisor **Hasan Maksud Chowdhury**, whose assistance and guidance was outstanding for the successful completion of the report. Without his help, it was impossible for me to complete this report. His excellent method of guiding helped me to understand this critical title easily. I also thanked him for kindly assigning such a nice and significant title which I am always supposed to remember gratefully.

Last but not least, my appreciation and thanks to my friend **Shawkat Ali**. He helped me a lot on the time in making report. I also like to pass my thanks to the colleagues for their nice participation and cooperation.

Executive Summary

Agriculture plays a key role in Bangladesh by contributing 12 percent to its exports, 21 percent to its GDP and employing more than 60 percent of its labor force. The dominance of agriculture will continue well into the 21st century as the nation fights against poverty and strives to raise standard of living of its people through sustained economic growth.

Bangladesh is the 7th largest country in the world in population where 164.707 million people are virtually elbowing each other in a land that is 147,570 sq km in area with a population density of more than 1100 people per sq km. Overpopulated! Well, there are only a few city-like states – like Singapore – that would top this kind of population density. Excluding those states, Bangladesh would make it to the top of the lists in population density. What makes the situation even more horrifying for Bangladesh is that the country is poised to lose a good part of its territory for rise of sea levels because of global warming, while its very population increases at an unsustainable rate.

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Chapter 01: Introduction

Preface:

In Bangladesh, a country currently experiencing rapid population growth and serious food shortages, an effort to increase crop yields through the introduction of HYV (high yield varieties) of rice was initiated in 1966. As of 1979, 15% of the rice fields were planted with HYV rice, and the remaining rice fields were planted with lower yield, traditional varieties. An investigation was undertaken to determine if the increase in crop yields expected from the introduction of HYV rice would sufficiently offset expected population increases and create a balance between food supply and demand in the future. Time series analysis were used to project crop yields for the years 1980, 1990, and 2000 for each district of the country, if 15% of the land was planted in HYV rice and if 20% of the land was planted in HYV rice.

The aim of this report is to know overall Agro industries in Bangladesh.

Objective of the Report:

This report has mainly two objectives:

- To know the scope of Agro industries in Bangladesh
- To understand the food scarcity in Bangladesh
- To examine factors those can affect agro industries in Bangladesh

Limitation of the Report:

- Three months are not enough to conduct the project paper
- A few data are confidential which could not put in this project paper

Chapter 02: Overview of Agriculture Industry

Agriculture is the single most important sector of Bangladesh's economy. 80% of the population is engaged in agriculture (66% of the labor force). Fifty-seven percent of the labor force is engaged in the crop sector which represents about 78% of the value added in the agricultural sector. The share of agriculture in GDP has fallen from around 57% in the 1970s to 35% in recent years but is still the largest economic sector. It is also the source of many of the small industrial sector's raw materials, such as jute, and accounts for 32% of the value of exports. In short, agriculture is the driving force behind economic growth in Bangladesh and, as a result, increasing food and agriculture production have always been major concerns of Bangladeshi policy-makers**.**

The Crop Sector and Statistics:

Within the crop sector (rice, wheat, pulses and jute), rice dominates, with an average 71% share of the gross output value of all crops. As a result, growth in the agricultural sector essentially mirrors the performance of rice production, although the share of livestock and fisheries has increased steadily in recent years to 22% of the value added in agriculture.

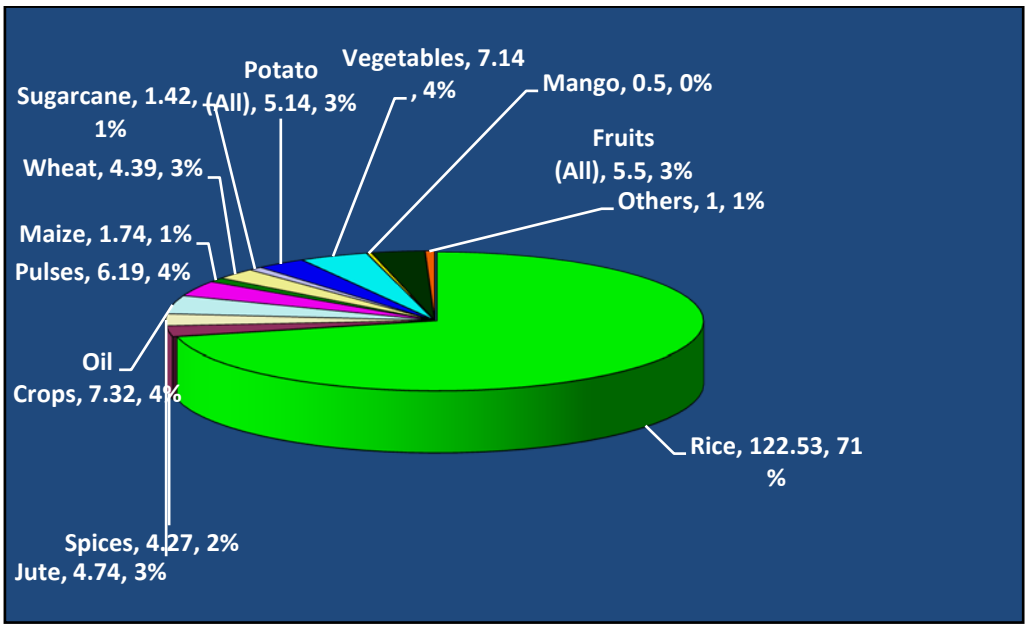

Figure 01: Statistics on Crop Sector

Chapter 03: Interpretation of Agro Industries in Bangladesh

Purposes and Activities of Agro Industries:

The Ministry of Agriculture is the highest central body of the government in the agriculture sector coordinating and supervising the activities of all the Agricultural Institutes and Directorates all over the country. The development objectives and functions of the MOA are as follows:

- Serves as a national coordinating and supervising apex body for planning, integration and implementation of agriculture policies and related projects
- Establish policies, regulations and projects that will ensure sustainable food production
- Achieve self sufficiency in food grain production through a sustainable growth in rice and wheat production
- Achieve increasing and profitable production of minor crops and thereby maintain a balanced crop production
- Increase rural employment through the adoption of modern agricultural practices
- Achieve low and stable consumer food prices and improve the nutritional status of the population
- Develop food production that is suitable and sustainable
- Establish macroeconomics policies that enable farmers to be responsive to domestic and world market opportunities
- Provide high quality infrastructure and government services that will enable farmers to produce and market products at low cost
- Rely on competitive markets to supply agricultural inputs at low cost
- Provide incentives to establish labor intensive production and processing agro-based industries
- The numbers of ongoing projects under the Ministry are at present 92 of which 28 are scheduled to be completed in June 2015

Role of Agriculture in Bangladesh:

The economy of Bangladesh is primarily dependent on agriculture. About 84 percent of the total population live in rural areas and are directly or indirectly engaged in a wide range of agricultural activities. The agriculture sector plays a very important role in the economy of the country accounting for 31.6 percent of total GDP in 1997-98 at constant (1984-85) prices. The agriculture sector comprises crops, forests, fisheries and livestock. Of the agricultural GDP, the crop sub-sector contributes 71 per cent, forest 10 per cent, fisheries 10 percent and

livestock 9 per cent. The sector generates 63.2% percent of total national employment, of which crop sectors share is nearly 55 %. Agricultural exports of primary products constituted 10.4% of total exports of the country in 1997-98. In the past decade, the agriculture sector contributed about three percent per annum to the annual economic growth rate.

The agriculture sector is the single largest contributor to income and employment generation and a vital element in the country's challenge to achieve self-sufficiency in food production reduce rural poverty and foster sustainable economic development. The Government has therefore accorded highest priority to this sector to enable the country to meet these challenges and to make this sector commercially profitable.

Challenges of Agro Industries:

Bangladesh has an agriculture-dependent economy with a growing population and one of the world's lowest land areas per caput. Not surprisingly, the most important issue in Bangladesh agriculture is to enhance and sustain growth in crop production, the most pressing problem is therefore the current state of stagnating yields and declining productivity in a range of food and non-food crops. Projections of food grain supply and demand are consistent in their conclusions that there is a widening food grain supply gap.

With negligible scope for area expansion, as most of the arable lands of Bangladesh are already under cultivation, future growth will have to continue to rely on raising productivity per unit of land. For this reason, continuous efforts are being made towards developing new improved seed varieties. It is also felt that the agricultural sector has by no means exploited its full potential for crop production and that there are various opportunities for substantially increasing cropping intensities. Currently only 40 percent of the potential irrigated area is covered by modern varieties and, most important, there are wide gaps between the potential and the realized yields for all crops in the country.

Narrowing gaps between actual and potential yields, however, is easier said than done, for there are various underlying issues and constraints in terms of productivity that are beyond the bounds of technology and another green revolution. To think that the growth of crop production and the goal of self-sufficiency depend almost entirely on technological progress is not only deceiving but also detrimental to the long-term sustainable development of the country. Aside from the fact that Bangladesh is prone to frequent natural disasters, there are

significant factors, both institutional and socio-economic, that play a part in determining the productivity of the agricultural sector and food security situation in the country. These include:

Landownership, Environmental degradation, Crop diversification, Social and physical infrastructure and support services.

Population and Food Challenge of Bangladesh in the 21st Century:

Rice is the staple food of about 135 million people of Bangladesh. It provides nearly 48% of rural employment, about two-third of total calorie supply and about one-half of the total protein intakes of an average person in the country. Rice sector contributes one-half of the agricultural GDP and one-sixth of the national income in Bangladesh.

Almost all of the 13 million farm families of the country grow rice. Rice is grown on about 10.5 million hectares which has remained almost stable over the past three decades.

About 75% of the total cropped area and over 80% of the total irrigated area is planted to rice. Thus, rice plays a vital role in the livelihood of the people of Bangladesh. Total rice production in Bangladesh was about 10.59 million tons in the year 1971 when the country's population was only about 70.88 millions. However, the country is now producing about 25.0 million tons to feed her 135 million people. This indicates that the growth of rice production was much faster than the growth of population. This increased rice production has been possible largely due to the adoption of modern rice varieties on around 66% of the rice land which contributes to about 73% of the country's total rice production.

However, there is no reason to be complacent. The population of Bangladesh is still growing by two million every year and may increase by another 30 million over the next 20 years. Thus, Bangladesh will require about 27.26 million tons of rice for the year 2020. During this time total rice area will also shrink to 10.28 million hectares. Rice yield therefore, needs to be increased from the present 2.74 to 3.74 t/ha.

To combat the future situation we will need to consider:

- Replacement of local varieties by modern varieties in T. aman season where possible.
- Limited increase in modern variety boro area

- Replacement of the present varieties by superior inbred, hybrid and super high yielding varieties
- Increment of irrigation areas in both boro and T. aman season
- Application of superior resource management technologies
- The use of quality seeds
- Mechanization of rice cultivation particularly minimization of post harvest losses

Economic Challenge of Agriculture in Bangladesh:

Agriculture in Bangladesh was once mainly subsistence based. This is no longer true. Recent estimates suggest that a proportion of farm produce is marketed. While post-harvest distress sales still exist, recent farm level studies indicate that such incidents are only marginal in explaining the extent to which is currently practiced.

Table 1: Proportions of Agricultural Output Marketed by Farm Households, (Household Expenditure Survey)

Crop	Percentage Marketed	Crop	Percentage Marketed
Paddy	38.7	Wheat	51.3
Jute	84.1	Mustard	62.9
Sesame	76.3	Pulses	50.3
Potato	60.4	Minor cereals	76.8
Egg Plant (Brinjal)	64.3	Arum	61.6
Pumpkin	35.2	Other vegetables	41.5

There are many types of farm produce, and most require a minimum of sorting or processing prior to home consumption or marketing. However, the degree of processing involved varies across commodity groups and by the target markets.

Most of the local production of vegetables and fruits is directed to the domestic market. Only in the 1980s the prospects of developing export markets emerged. Most of the country's exports are to the United Kingdom and United Arab Emirates and targeted to Bangladeshis residing in these countries. Domestically, the urban markets are the main consumers.

Production especially that of fruits was also adversely affected by the floods. Improved financial services are necessary to facilitate increased export of agricultural produce from Bangladesh.

In cases of both domestic and export marketing, produce is generally packed at the farm level in bamboo baskets of 10-30 kg each or in jute bags of 30-50 kg. Lack of modern marketing infrastructure, 20-40 percent of harvested produce often does not reach the consumers. Water transport is primary means of carrying the produce to urban markets. However, with development of road transportation system, more and more of the produce are being transported by trucks and vans.

In case of exports, produce is delivered to the exporters' "warehouse" or "packing house", which in many cases is a small room in a housing unit. Under the supervision of exporter's agents, the produces are sorted, graded and packed. These fresh vegetables and fruits are exported by air cargo.

Food Security:

Towards Self-Sufficiency:

Bangladesh became a perennially food-deficit country in the late 1950s when population pressures began to take their toll. Threats of mass starvation have been felt several times since independence owing to droughts and flooding, but a famine of significant proportion only struck the country in 1974 when world food production fell to an all-time low and world

food prices rose sharply. At that time, there was insufficient food aid and the country did not have enough foreign exchange resources to buy all the grain it needed in the world market. With subsequent increase in food aid allotments from donors and the government's import programs and increased capacity to finance food imports, the days of severe famine were put to an end. However the majority of the rural populations are still afflicted by malnutrition and semi-starvation. In fact, a downward trend in the daily per caput intake of cereals, pulses, vegetables, fruits and meat can be seen over the last few decades in rural areas as well as at a national level.

The Role of Rice:

With the availability of high-yielding varieties (HYVs), rice has contributed significantly to the progress towards self-sufficiency. Despite the significant inroads wheat has made in the Bangladeshi diet, rice has been and continues to be the favored food grain in the country and constitutes 95% of the cereals consumed. Rice cultivation is the major source of livelihood for the large majority of farmers of Bangladesh and it accounts for more than 74 percent of cultivated area, 83 percent of all irrigated area and 88 percent of the total fertilizer consumption in the country. In a social, political and economic context, rice is a significant crop in Bangladesh; it dominates all other economic activities and consumes a considerable amount of foreign exchange.

Food Grain Production:

Although Bangladesh continues to be a net importer of food, importing on average 1.5 million tons of rice annually, it has achieved substantial gains in food grain production during the last two decades. From 1969/70 to 1992/93, the cropping intensity increased significantly with food grain production almost doubling. In the crop years from 1989/90 to 1992/93, Bangladesh produced bumper harvests of food grains, with a record production in 1992/93 of 19.5 million tons (much higher than the average of 16.4 million tons during 1985-89).

Current State of the Agricultural Sector:

The recent trend in food grain production has not been positive. The agricultural sector is now confronted with low and stagnating yields of most crops, including rice, and the food gap between domestic production and demand has actually widened. In spite of the fact that rice production has increased at a higher rate than the rate of population growth during the last decade, and despite the fact that there are both public and private imports each year, the daily per caput food availability of food grains in Bangladesh has not reached the standard food grain requirement or target consumption level of 454 g since 1991/92. Given that food availability is not equally distributed, it is clear that the situation is worse for the poor than these figures would lead one to believe.

Food Production and Population Growth in Bangladesh:

Population projections were used to calculate per capita food requirements for each district for the years 1985, 1995, and 2020. Projected crop yields and per capita food requirements were then plotted on maps to determine the relationship between food supply and demand in each district. Even under the most favorable projection, in which 20% of the rice fields were planted in HYV rice, food deficient areas were more extensive than at the present time. These findings suggested that even a massive agricultural effort cannot solve the food problems of Bangladesh; however, if agricultural progress is combined with a rapid reduction in the population growth rate, the country can solve its food problem and also develop a viable economy.

Year	Population (million)
1985	88.855
1990	100.532
1995	113.049
2000	126.297
2005	140.767
2010	153.122
2015	164.707
Projected, 2020	190.000

In overpopulated Bangladesh, people virtually elbow each other in a land spanning 147,570 square kilometers with a population density of more than 1,100 people per square kilometer. While landmass is being lost to rising sea levels due to rains and floods, blamed on global warming, the population continues to increase at an unsustainable rate. The current growth rate varies from 1.5 percent to 2 percent a year according to different assessments.

Agriculture Research System in Bangladesh:

The National Agricultural Research System (NARS) of Bangladesh consists of ten research institutes under the umbrella of Bangladesh Agricultural Research Council (BARC). Out of ten research institutes six belongs to Ministry of Agriculture (MOA), two to Ministry of Fisheries and Livestock (MOFL) one to Ministry of Commerce, and one to the Forest and Environment Ministry. In addition the NARS also comprises universities that have casual working relationship with BARC and other related organizations.

The ten research Institutes under the NARs are:

- Bangladesh Rice Research Institute (BRRI)
- Bangladesh Agricultural Research Institute (BARI)
- Bangladesh Jute Research Institute (BJRI)
- Bangladesh Institute of Nuclear Agriculture (BINA)
- Bangladesh Livestock Research Institute (BLRI)
- Bangladesh Fisheries Research Institute (BFRI)
- Bangladesh Sugarcane Research Institute (BSRI)
- Bangladesh Tea Research Institute (BTRI)
- Bangladesh Forest Research Institute (BFRI)
- Soil Resources Development Institute (SRDI)

The Bangladesh Agricultural Research Council (BARC) is the apex body of the NARS. The Council serves as the national coordinating organization for planning, integration, and implementation of research on crops, livestock, soil, water, crop protection, agricultural engineering, forestry, fisheries, economics and social science. BARC also identifies problem areas in agriculture and prepares national plans for agricultural research within the framework of national policies and development goals. The Council collaborates with international and national research center to ensure a rapid introduction, evaluation and use of improved agricultural technologies. BARC is responsible for planning, developing and upgrading of manpower base of the NARS.

The component research institutes have their own ordinances and separate mandates. They are governed by their separate management boards. The role of the institutes is defined by their respective ordinances. They are responsible for the task of generating research programs

in their respective fields of activity. All the research institutes have their own network of regional stations, centers and sub-stations throughout the country. These stations undertake research on regional and local basis to cover the 30 agro-ecological zones of the country.

Opportunities and Constraints of Agriculture in Bangladesh of 21st Century:

Opportunities:

- Agricultural sector is the single largest contributor to GDP
- Crop production system is highly labor intensive and there is an abundance of labor in the country
- Agriculture is the largest source of employment for skilled and unskilled labor
- Favorable natural environment generally exists throughout the year for crop production
- Wide range of bio-diversity exists for different crops
- Different crops and agricultural commodities are the main sources of nutrition including protein, minerals and vitamins
- Agricultural commodities have comparatively higher value addition than non-agricultural commodities

Constraints of Agriculture in Bangladesh:

- Agriculture is dependent on the vagaries of nature and is risky
- Availability of cultivable land is decreasing
- Widespread poverty among the population engaged in agriculture
- Lack of required capital for agricultural activities
- Inadequacy of appropriate technology considering farmers soci-economic conditions
- Uncertainty of fair price of agricultural commodities due to underdeveloped marketing system
- Agricultural commodities are rapidly perishable and post harvest losses are too high
- Limited knowledge of common people about the nutritional value of agricultural commodities including vegetables and fruits

Chapter 04: Conclusion

A clearer picture of the demands that is likely to be placed on agriculture over the next century, and of the ways in which agricultural systems might be able to meet such demands, has yet to be produced. The demands that will be placed on agriculture will also depend on the rate of growth of income, particularly in the poor countries where consumers spend a relatively large share of income growth on subsistence: food, clothing, and housing.

During the twenty-first century water resources will become an increasingly serious constraint on agricultural production. Agricultural production is a major source of decline in the quality of both ground and surface water. Limited access to clean and uncontaminated water supply is a major source of disease and poor health in many parts of the developing world and in the former centrally planned economies.

Food-system perspective should become an organizing principle for improvements in the performance of existing systems and for the design of new systems. The agricultural science community should be prepared, by the second quarter of the next century, to contribute to the design of alternative food systems. Many alternatives will include the use of plants other than the grain crops that now account for a major share of world feed and food production. Some alternatives will involve radical changes in food sources.

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