Internship Report On

An Analysis on the Supply Chain Management of Dry Food Items of SK Agro Food Processor – A Case Study

By

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An internship report submitted to the BRAC Business School in partial fulfillment of the Requirements for the degree of

Bachelor of Business Administration

BRAC Business School

BRAC University

January 2021

Declaration

It is hereby declared that

1. The internship report submitted is my own original work while completing degree at BRAC University
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Assistant Professor, BRAC Business School

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Letter of Transmittal

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Assistant Professor

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Subject: An Analysis on the Supply Chain Management of Dry Food Items of SK Agro Food Processor – A Case Study

Dear Sir,

I am glad to inform you that I have secured a position of Operations Officer at SK Agro Food Processor where I have been working since 11 October, 2020. I am grateful to have the opportunity to submit my internship report titled "An Analysis on the Supply Chain Management of Dry Food Items of SK Agro Food Processor – A Case Study". I tried my best to maintain a standard while writing this report using the information that was available at my disposal.

This report would not be possible without your guidance and cooperation. I hope that this report will be able to meet your expectations.

Sincerely yours,

_____

Raqeeb

17104010

BRAC Business School

BRAC University

Date: January 9th, 2021

Non-Disclosure Agreement

This agreement is made and entered into by and between SK AGRO FOOD PROCESSOR and the undersigned student at BRAC University.

Acknowledgement

At first, I would like to thank the Almighty for giving me strength and perseverance to accomplish my internship at SK AGRO FOOD PROCESSOR and enabled me to continue in the middle of the pandemic. This report would not be completed without the endless support of numerous people.

I would like extend my deepfelt gratitude toward Md. Hasan Maksud Chowdhury, whose guideline and instructions proved to be invaluable when writing my report. I am also thankful towards my supervisor at work, Md Rezaul Karim, under whom I was able to navigate through the many hurdles I have faced so far. I am grateful to both of them who served as great mentors and have supported me throughout my work with great patience.

At last, but not the least, I would like to thank my family, friends, colleagues and many others without whose support and encouragement I would not be able to move forward and complete this internship.

Executive Summary

The report was created as a requirement for degree completion at BRAC University. It outlines the supply chain activities of SK Agro Food Processor where I completed my internship.

SK Agro Food Processor is a sole proprietorship that engages in manufacturing and export of variety of dry food stuffs.

SKAFP's operational strategies include a low-cost pricing strategy, consistent good quality product, high flexibility in terms of altering product specification and introducing new flavors to attract new customers and remain competitive in the market.

The factory is located at Narayanganj, which is an industrial zone that has availability of labor and near to the suppliers. It follows a batch process of production and has a process type layout where similar production processes are done in the same area.

SKAFP has many types of inventory on hand and use a perpetual inventory system to track their inventory. They use weighted moving average for their demand forecasting to get an estimate of following year's demand.

The inbound logistics is very simple as SKAFP arranges transport for raw materials to be delivered to the factory. However, the outbound logistics, the consignment is sent from the factory to the Chittagong port where it is loaded into a cargo vessel and shipped to client's destination.

These are the major aspects of supply chain activities covered by SK Agro Food Processor. However, they also face many issues. Many of their inventory tracking is done manually. This causes many errors and the flow of information is also disrupted resulting in inefficient decision making. Moreover, their wastage level is very high due to power outage and equipment failure. And finally, many of their packaging is done manually that leads to a huge bottleneck.

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List of Acronyms

BAPA	Bangladesh Agro Processor Association
EPB	Export Promotion Bureau
DAE	Department of Agricultural Extension
SKAFP	SK Agro Food Processor
BSTI	Bangladesh Standard Testing Institute
FDA	Food & Drug Authority

1. Introduction

Bangladesh is one of the most densely populated country in the world and had a GDP of USD 302 billion in 2019. Majority of the GDP contribution comes from Ready Made Garments (RMG) sector and Agriculture sector. Both of the sectors are manufacturing sector. Supply Chain Management is an integral part of any manufacturing organization. It deals with the flow of materials, information and cash throughout the organization. By utilizing and optimizing the supply chain, a company may achieve greater profits, smooth day to day operations and lead to greater customer satisfaction.

The report is based on SK Agro Food Processor, an agro food processing company based and operating in Bangladesh since 2006. SKAFP is a sole proprietorship engages in manufacturing and export of various food stuff that includes spices, aromatic rice, mustard oil and other ready to eat snacks like chanachur, biscuit, etc. The report will include an overview of SK Agro Food Processor, its supply chain activities and discuss the problems they currently face and possible solutions.

1.1 Rationale for the Report

This report was created for the partial fulfillment of the requirements of Bachelor of Business Administration at BRAC Business School by undergoing an internship for the duration of at least 3 months. The content of the report includes the understanding of the supply chain management of SK Agro Food Processor as understood during the period of internship that was done.

1.2 Objective of the Report

Supply Chain Management is of strategic importance to manufacturing organizations. During this pandemic, it has become more important than ever, that food products are delivered safely to the end consumer. The objective of this report is to outline the current supply chain activities of Agro food processing firms with SK Agro Food Processor as a focal point.

1.3 Scope and Limitations of Study

The report helps to understand the overall supply chain activities of Agro Processing firms with SK Agro Food Processor as a reference point. This report will help future industry practitioners and researchers to study the supply chain, identify gaps and further develop the supply chain of food processing industry.

However, this report is not without its flaws. There were several obstacles that I have faced while undergoing my internship and preparing this report. They include: -

- COVID-19 Pandemic – The pandemic has forced many businesses to close down while many large companies struggled. This report was prepared from the observation that was made during the pandemic. Regular operations may differ from before the pandemic. Furthermore, factory visit was largely restricted due to the pandemic. So, some of the details were collected via interviews.
- Time Constraints – There was not enough time given for the report. With the pandemic in mind, further time allotted would have been beneficial to prepare a more extensive report from further observations.
- Availability of Information – Many of the information that was required was unable to be gathered due to the pandemic and time constraints.
- Confidentiality – Since the firm is a sole proprietorship, many details of the company are confidential and are not up for disclosure in the report.

2. Methodology

2.1 Sources of Data

This report is collected using primary and secondary sources of data.

Primary Sources of Data

This report is made from the various observation and experience gathered throughout the internship experience. Furthermore, additional information has been collected or provided by:

Md Abdus Sattar – Proprietor

Md Rezaul Karim – Chief Executive Officer (CEO)

Md Sajjad Hossain – Executive, Commercial and Export

Abdul Momin – Factory In charge

Secondary Sources of Data

This refers to the work that has been prepared or published by others. For the purpose of this report, supplementary information has been collected from various company documents and articles that were available on the internet.

2.2 Data Collection Process

The information that was required for the purpose of this report has been gathered from empirical observation of day to day operations and short interview sessions of various employees in the company. Supplementary information was collected from websites of government and private organizations affiliated with the Agro Processing Industry.

3. Organizational Overview and Industry Perspective

3.1 Background of the Company

SK Agro Food Processor is a food processing company that is engaged in manufacturing and export of quality food products. The company was established in 2006 by its Proprietor, Md Abdus Sattar. The landscape of Bangladesh makes agriculture one of its most important sectors. The company wants to leverage the potential of the agricultural sector to provide quality goods and services to clients both home and abroad and contribute to the economy and the agricultural sector.

Company Profile

Company: SK AGRO FOOD PROCESSOR

Year of Establishment: 2006

Proprietor: Md Abdus Sattar

Number of Employees: 56

Office Address: 102, Shantinagar, Paltan, Dhaka-1217

Factory Address: Areab, Rupshi, Rupgonj, Narayanganj.

Vision, Mission and Values

Vision: To be the global leader and provider of consistent and quality food product that is preferred by everyone, everywhere and every day.

Mission: SK Agro Food Processor is committed to provide superior customer value by producing food products that are essential, healthy and safe for consumption and generating profit to compete in the market.

3.2 Company Products

SK Agro Food Processor produces various food products under its brand names SK FOOD and Deshi Food. The food items it produces are as follows:

SL No.	Category	Food Items
1	Spice	Chili Powder, Turmeric Powder, Coriander Powder, Cumin Powder, Pea Powder, Curry Powder, Chicken Curry Masala, Meat Curry Masala, Fish Curry Masala, Biriyani Masala, Bay Leaf, Chirata, Dry Chili, Basil Seeds, Isabgol husk.
2	Rice	Puffed Rice, Flattened Rice, Aromatic Rice.
3	Biscuits	Dry Cake, Cookies, Toast, Salted Biscuit.
4	Snacks	Chanachur, Jhal Muri, Fried Lentils, Puffed Rice Ball, Flattened Rice Ball, Chips, Palm Molasses, Sugarcane Molasses.
5	Pickle	Garlic Pickle, Mango Pickle, Olive Pickle, Chili Pickle, Elephant Apple Pickle, Mixed Pickle.
6	Other Foodstuff	Juice, Mustard Oil

Table 1: Company Products

The food products are tested by Bangladesh Standard Testing Institute (BSTI) and approved for export and commercial sale.

3.3 Industry Perspective among export of Agro food products

Agriculture is a key sector and a major contributor to the economy of Bangladesh. The workforce engaged in agriculture and food processing sector is composed of a significant portion of the population. According to Export Promotion Bureau (EPB), the total export of Bangladeshi products during the fiscal year of 2019 – 2020, was USD 33.67 billion which was 16.93% less than the previous fiscal year. For 2019 – 2020, the total export of agricultural products was USD 862.06 million which is a 5.16% decrease from the previous year. The total contribution of agriculture to the whole export of Bangladesh is 2.56%. The data stated above is excluding the fisheries sector and only includes food products derived from agricultural raw materials. The largest exporter among the food processing companies is PRAN (Program for Rural Advancement Nationally). They exporting since 1996 and are already serve 134 countries globally. Furthermore, there are many large processing companies in the export market like Square Food & Beverage Limited (SFBL), ACI Consumer Brands, etc. This drop in export occurred mainly because of the pandemic that is still ongoing. According to an article by The Business Standard, Bangladesh has a lot of potential to increase their exports of food products by 10-fold. However, they cannot do so as there is no international accredited certification body to certify Bangladeshi food products safe for export and human consumption. All certification is done by local regulatory bodies.

There are several watchdog organizations and associations that are setup to help farmers and producers and to make the supply chain much easier. They ensure that quality of goods are high, introduce new farming and manufacturing techniques to farmers and producers via training programs. The organizations among many are: -

- Bangladesh Agro-Processors' Association (BAPA) – It is an association of owners of food processing companies. They monitor and help producers export their goods internationally.
- Ministry of Agriculture (MoA) – It was founded to increase production and productivity in the agriculture sector.
- Department of Agriculture Extension (DAE) – It is a department under Ministry of Agriculture and its function is to conduct agriculture extension activities. Furthermore, the Plant and Quarantine Wing of DAE is responsible to issue Phytosanitary certificates which is essential for export of food stuff.

4. Supply Chain Management of SK Agro Food Processor

The supply chain of SKAFP is shown in the figure below. Firstly, they purchase the raw materials from the vendors and have it delivered to their warehouse which is located adjacent to the factory. The raw materials are then processed to produce finished goods and packaged as per the consignment. The finished goods are then delivered to the sea port at Chittagong where they are loaded into a cargo container and shipped to various countries. The client receives the consignment and sells to retailers and then finally reaches the end consumer.

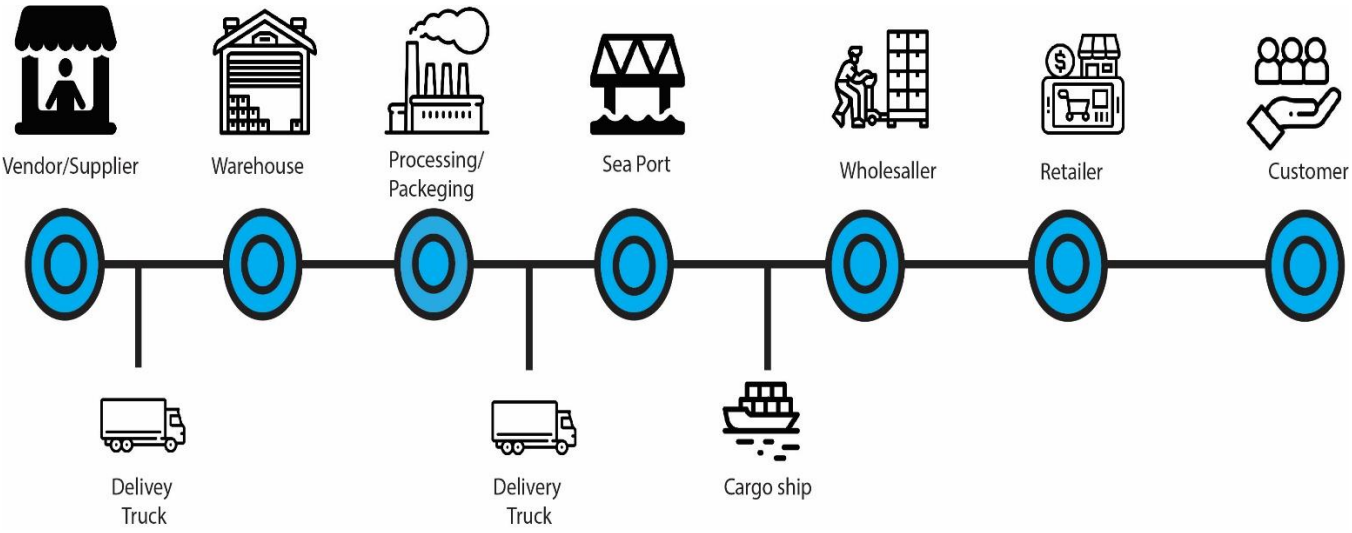

Figure 1: Supply Chain of SK Agro Food Processor

4.1 Operational Strategies

The food industry is a competitive market and has a lot of global competitors. SKAFP has their set of operational strategies in order to remain competitive in the market.

Pricing Strategy

SKAFP has a low-cost pricing strategy. They offer their products at a competitive price range that is sometimes lower than other competitors. They are able to do that as they only deal in high volume shipments (eg: 64 cubic meter containers). Moreover, they also receive cash incentive on export of food items from the government. This also plays a vital role in keeping the cost down to compete with global competitors.

Quality

SKAFP prides itself as firm that puts quality of their products over everything else. They ensure that their product quality meets a certain standard and it is consistent across their product line. This is done as the products are required by regulatory institutes like BSTI & Plant and Quarantine Wing of Department of Agriculture Extension (DAE) for periodic testing to deem it safe for export.

Flexibility

SKAFP is very flexible in terms of adapting to market requirements. They can easily alter product specification as per client demands from altering the taste of the food items to changing the packaging to fulfill consumer demands.

Product and Service Design

SKAFP maintains their brand of “SK FOOD” and “DESHI FOOD” so that they can serve a variety of products in the market. They are constantly trying to introduce new flavors and food items to their product line to attract more customers. Furthermore, the products are packaged as per client specifications.

4.2 Process Selection and Facility Layout

Facility Location

The factory of SKAFP is located in Narayanganj which is an industrial area. This location is very suitable as there is availability of skilled labor in the area as they are situated in the vicinity. Furthermore, inbound logistics are greater than the outbound logistics, it is much more convenient as the factory is located near to the suppliers/vendors and the shipments are easy to make as they go to the Chittagong Port via Inland Container Depot (ICD), Dhaka.

Process Types

SK Agro Food Processor follows a batch process of production. This is done as their products have many variants and the production volume is high. For instance, a consignment has salted cookies and coconut flavored cookies. The volume of salted cookies is high. Therefore, they will prepare a batch for salted cookies as per requirement and then setup the production floor again to prepare a batch of coconut flavored cookies.

Layout type

The factory of SKAFP follows a process type layout. The different categories of production follow a similar production process for their items. Thus, similar production processes are grouped together. Moreover, in order to maintain safety and hygiene, certain product types like spices are produced in a separate section. The layout is designed in such a way that high volume products are located near to the front so that the flow of materials are maintained easily.

Figure 2: Factory Layout

4.3 Manufacturing Process

SKAFP is a manufacturer of a wide variety of food products. Their manufacturing process for different categories of products differ from each other, but remains almost same within the category. The core process starts with the receiving of materials and storing them. The manufacturing processes are:

Biscuit Section

Mixing: All the raw materials which includes Flour, Egg, Palm Oil, Baking Powder, Butter, Flavor, Yeast, etc are mixed to prepare the dough.

Moulding: Different shapes of moulds are used for different types of biscuit/cookies to give it shape.

Baking: The biscuits are loaded into large trays and placed into oven for baking. There are two types of oven used. Rotary oven are used to make normal cookies and chain oven are used to make salted cookies.

Cooling: After coming off the oven, the trays are taken out to cool the biscuits. Many types of biscuit item like dry cake, toast biscuit requires to be reinserted to the oven for drying.

The biscuits are ready to be packaged and shipped.

Spice Section

The raw material are ground spices may include whole turmeric, chili, coriander, pea, etc. The whole spices are made into ground spices using industrial spice grinder.

Snacks

The snack items like chanachur, fried lentils are prepared using frying batter and nuts. Other snack items may require minimal processing.

Puffed Rice

Firstly, raw rice is cooked for some time with water and salt. Then they are put in the puffed rice machine that utilizes heat and pressure to make puffed rice.

All the above-mentioned manufacturing process are used to produce goods that are then packaged in different variety of packages like foil packet, box packet, plastic jar, glass jar, etc which is the primary packaging. Then the packets are loaded in cartons which is the secondary packaging in different sizes. Below is the given packing size of few products.

SL No.	Product Description	Packing Size/ Carton
1	Coconut Cookies	950gm x 6 Jars
2	Chanachur	70gm x 96 foil pack
3	Cumin Powder	200gm x 36 packet

Table 2: Packing Size

4.4 Inventory Management

Inventory Management is a systemic approach to the management of inventory which includes sourcing, storing and selling of raw materials and finished goods. SKAFP deals with a regular supply of raw materials and shipment of finished goods. To monitor their inventory on a regular basis, they use a perpetual inventory system. This refers to recording and updating their inventory as they are stored, moved across the factory or scrapped as wastage. This is used as they are moving goods constantly and need to keep track of the goods.

4.4.1 Types of Inventory

- Raw Material Inventory: This refers to the raw materials that are required for the production of the foodstuff. Eg: Whole Spices, Flour, Sugar, Salt, Egg, Food grade flavors, etc.
- Finished Goods Inventory: This refers to the finished goods that are packed and ready for shipment.
- Safety Stock and Decoupling Inventory: Safety stock refers to the stock of goods that are kept when there is a change in external demand whenever clients may need to make changes to their order. Decoupling inventory refers to the stock of goods that are kept when there is a change in internal demand. Sometimes, the machines in the factory breakdown or the raw materials get pass the expired date. This stock is kept to maintain steady flow of the manufacturing process.
- Pipeline Inventory: This refers to the raw materials that are already in transit to the factory.

4.4.2 Demand Forecasting

SK Agro Food Processor incorporates data analysis into their planning. They make use of their past data and make a prediction for future demand. They use 3 year Weighted Moving Average method with weights of 0.5, 0.3 and 0.2 to forecast their demand. This helps them to put more emphasis on the most recent years when forecasting to plan and allocate resources accordingly for the following year.

For instance, the demand of Biscuits are as follows: -

Year	Actual Demand (in kg)	Forecasted demand (in kg)	| Error |
2015	80,748.00	-	-
2016	62,804.00	-	-
2017	71,776.00	-	-
2018	65,047.00	70,878.80	5,831.80
2019	78,505.00	66,617.10	11,887.90
2020	89,720.00	73,121.80	16,598.20
2021	-	81,420.90	MAD = 11,439.30

Table 3: Demand Forecast using Weighted Moving Average method.

The, forecasted demand of biscuit for the year 2021 is around 81,420.90 $\pm$ 11,439.30 kg. This gives SKAFP an estimate of their production level for the year and allocate resources accordingly.

Moreover, SKAFP has certain months where their production is at peak. The demand for the product is high from the starting of Ramadan till the end of Eid Ul Adha. This is where majority of the production takes place. Upon receiving the order, it takes SKAFP 2 weeks to prepare the consignment and ship it. Since, the shipment is by sea, it takes further 4 – 5 weeks to reach the client. So, the Order fulfillment cycle time is between 6 -7 weeks.

If we assume on a scale of 1 – 10, where 10 represents peak demand, the seasonality forecast for 2021 is as follows: -

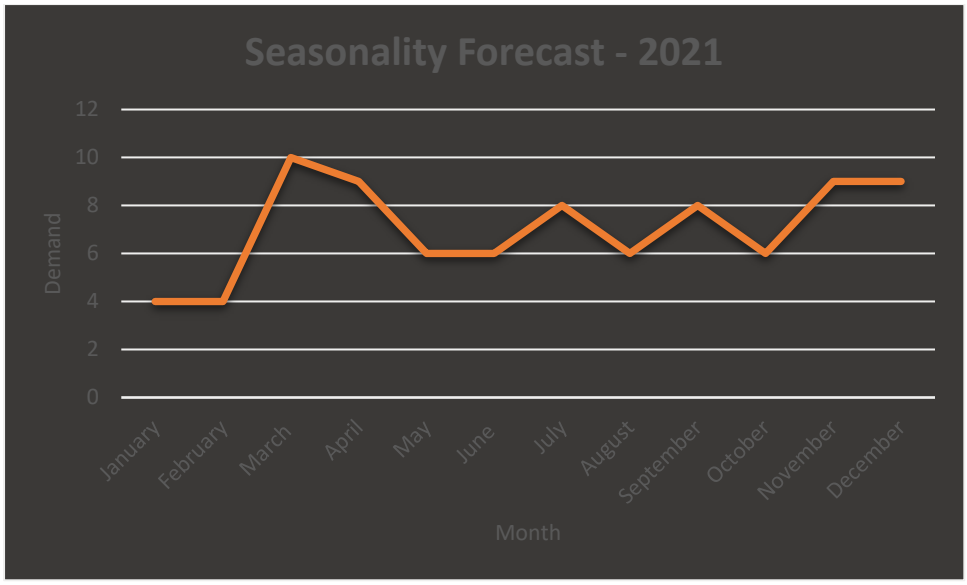

Figure 3: Seasonality Forecast of 2021

4.5 Procurement Process

SKAFP relies on large volume of inbound raw materials for its production from its suppliers/vendors. The procurement process is centralized and the purchasing department primarily deals with it. Since majority of the vendors are located in Dhaka, the lead time is very short. The procurement process of SKAFP are as follows:

Purchase Requisition: The inventory is monitored at the factory and whenever any raw material is required, a purchase requisition is made to the purchasing department. The purchase requisition is required for approval from the manager and a purchase order will be made.

Vendor Selection and Order Placement: SKAFP already has fixed vendors for their raw materials. However, if a new vendor is required due to dismissal of existing vendors, a request for quotation (RFQ) is sent to potential vendors for their prices. Subsequently, a vendor is selected if their prices and terms meet the criteria of SKAFP and a contract is negotiated between them. Finally, an order is placed to the vendor.

Order Receive and Post Purchase Activity: The goods that has been delivered to the factory is checked so that it matches the purchase order. If any goods are damaged or missing, the invoice is adjusted accordingly and the pay is issued. If the vendor is suitable for further business, then subsequent orders will be given to them, otherwise new vendors will be selected.

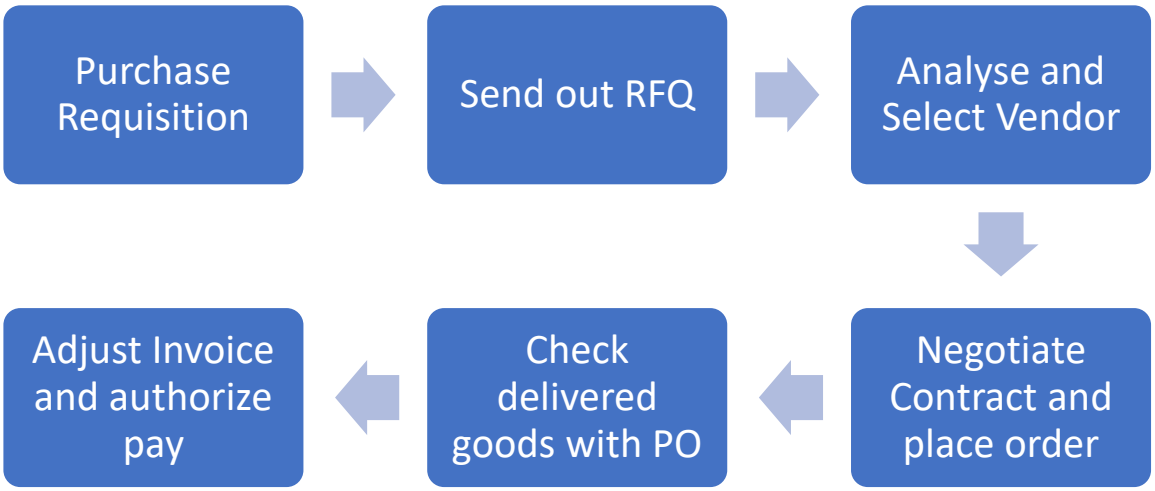

Figure 4: Procurement process of SK Agro Food Processor

4.6 Transportation and Logistics:

Logistics refers to the movement of materials along the supply chain. SKAFP is a manufacturer and processor of food products which involves heavy movement of materials along the supply chain. SKAFP does not have their own transportation vehicles; thus, they rely on third party logistics companies to provide transportation for them.

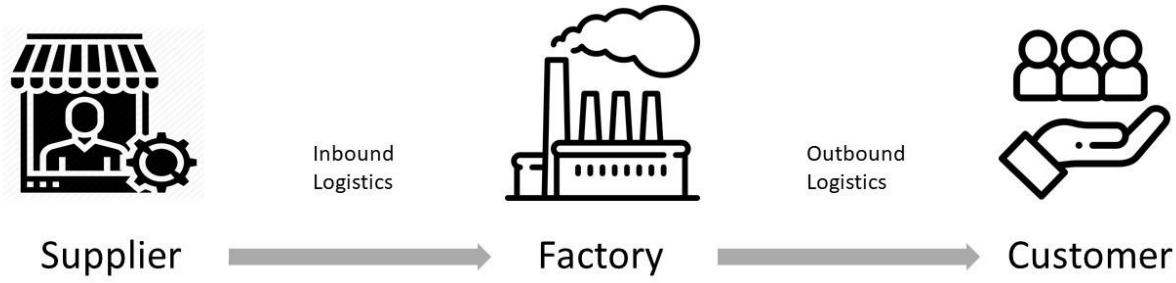

Figure 5: Inbound/Outbound Logistics

Inbound logistics: Inbound logistics refers to the goods/raw materials that are received from the supplier and its storage that are later used for production of food stuff. SKAFP has many suppliers that are near the factory located in Narayanganj. Majority of the suppliers provide transportation and deliver the raw materials to the factory directly. However, many suppliers cannot provide transportation themselves so the transportation has to be arranged by SKAFP themselves. This is a major cost to the company and there is planning done in order to reduce transport cost.

Outbound logistics: Outbound logistics refers to the movement of finished goods in the supply chain to the customers from the factory. When a consignment is ready for shipment, SKAFP arranges many 20ft cover vans for transport via a 3rd party transport company. The consignment is then delivered to ICD, Dhaka or Chittagong Customs House. When the consignment reaches the port, a customs agent handles the documentation for export and makes sure the goods are loaded in the container. Moreover, freight forward agents are 3rd party logistics provider who are very important in the supply chain of SKAFP. They contact shipping lines like MAERSK Line, OOCL, etc and arrange container and vessel for shipment. The container is loaded into cargo vessel and shipped to the destination country. SKAFP does only shipment by sea as it is inexpensive compared to other modes of transport for international export.

4.7 Quality Management

As SKAFP deals with export of food products, it is essential that they are safe for consumption and meet international standards. In order to export its goods, they are required by several regulatory bodies and testing institutes to submit their goods for testing and obtain the necessary certificates that enable them to engage in export. As such, it is required by the Bangladesh Standard Testing Institute (BSTI) and Plant and Quarantine wing of Department of Agriculture to obtain Phytosanitary Certificates to prove that the goods are safe for export. There are several tests that are performed. For instance, spices and snacks undergo laboratory tests, rice items undergo fumigation to be free of pests, etc. Furthermore, these products undergo separate testing after they reach the destination country and their Food & Drug Authority (FDA) conducts several tests for the food items to be deemed safe for consumption.

Apart from governmental regulations, SKAFP maintains industry standards to maintain hygiene and quality of their products. They have quality control officers stationed at the factory to ensure that the products are of acceptable quality before they are shipped for export.

However, sometimes the final products do not meet the standard and are deemed defective and have to be scrapped as wastage. A fishbone diagram is prepared in order to figure the cause of low standard product.

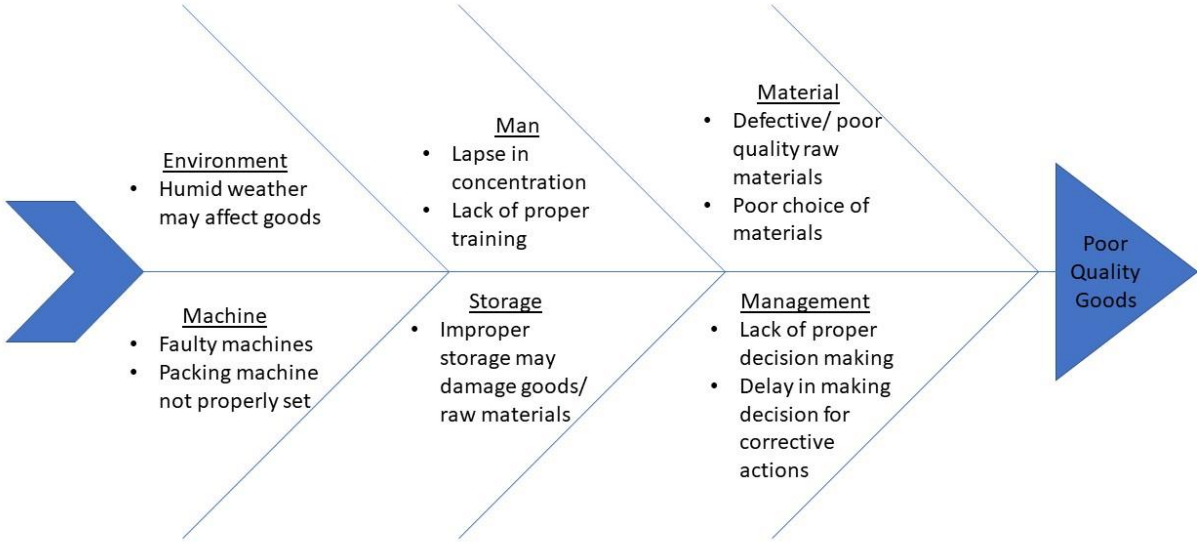

Figure 6: Fishbone diagram to figure out reasons for poor quality

4.8 Capacity

It is vital for the management of SKAFP to measure their capacity utilization rate in order to allocate resources and make use of it efficiently. Capacity utilization is the proportion of the design capacity that is actually is use. The capacity utilization went from 84.16% in 2017 to 90.83 % in 2018. Then it dropped down to 86.81% in 2019. This happened because there were new machines installed in the factory to increase long term capacity to accommodate the increase in demand.

Year	Product Line	Design Capacity (in kg)	Actual Production (in kg)	Utilization = (Actual Production / Design Capacity) x 100
2017	Food Stuff	6,00,000	5,05,000	84.16%
2018	Food Stuff	6,00,000	5,45,000	90.83%
2019	Food Stuff	7,20,000	6,25,000	86.81%

Table 4: Capacity Utilization

4.9 Productivity

Productivity calculations are done in order to assess the amount of output compared to the input.

Total Productivity = Total Output / Total Input.

Year	Total Output (in kg)
2017	5,05,000
2018	5,45,000
2019	6,25,000

Table 5: Total Output of Finished Goods

Year	Raw Material (in kg)	Raw Material Cost (in BDT)	Labor Cost (in BDT)	Machine Cost (in BDT)	Overhead Cost (in BDT)
2017	5,87,000	11,09,43,000	56,40,000	1,62,90,000	22,45,000
2018	6,48,000	12,44,16,000	57,60,000	1,52,00,000	20,86,000
2019	6,86,000	13,37,70,000	64,80,000	1,56,25,000	25,00,000

Table 6: Total Input in production

Year	Raw Material Productivity	Raw Material Productivity (kg/BDT)	Labor Productivity (kg/BDT)	Machine Productivity (kg/BDT)	Overhead Productivity (kg/BDT)
2017	0.86	0.0045	0.089	0.031	0.225
2018	0.84	0.0044	0.094	0.036	0.261
2019	0.91	0.0047	0.096	0.04	0.250

Table 7: Productivity

4.10 Bottleneck Analysis

According to Zenjiro Imaoka, a bottleneck or constraint is a resource that takes the longest time in a supply chain. The speed of the bottleneck determines the speed of the supply chain. In a manufacturing organization, bottleneck usually appears at manufacturing operations. However, it can also appear due to other external factors as well.

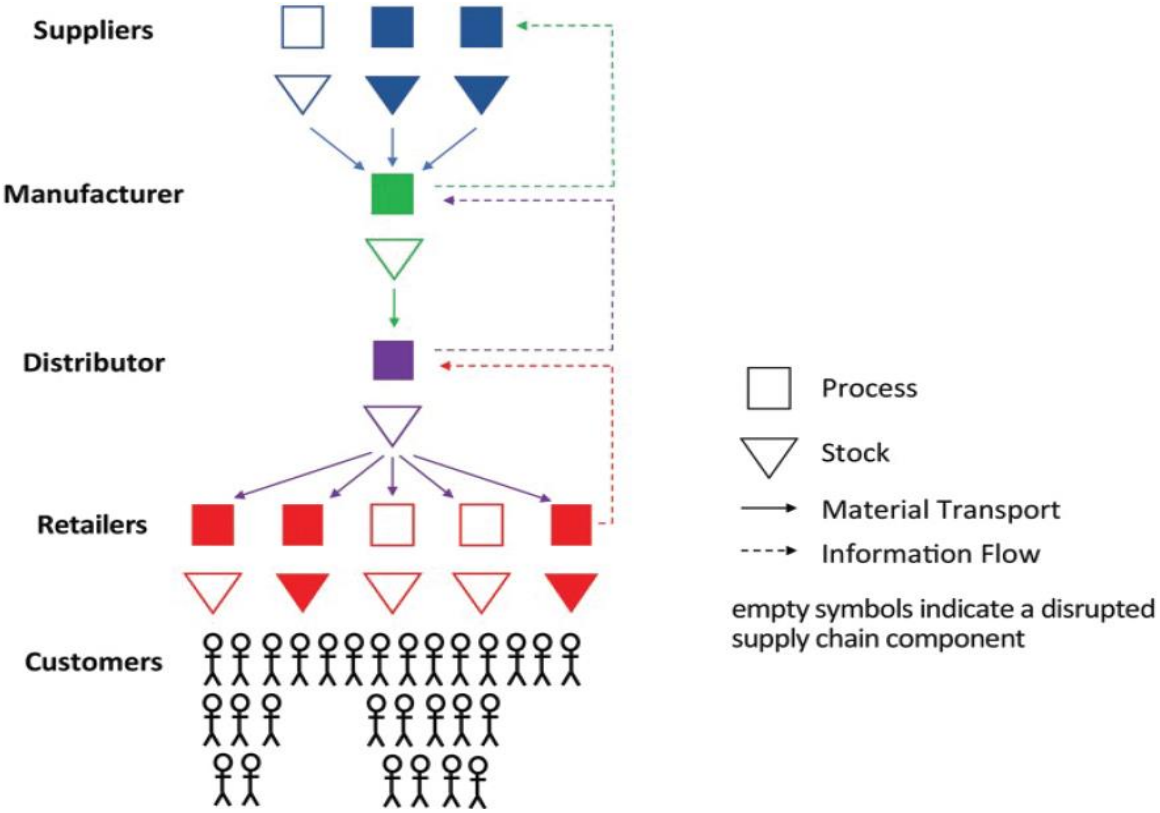

Figure 7: Disrupted supply chain due to bottleneck

At SK Agro Food Processor, the bottleneck is mainly at procurement and packaging. The production of foodstuff occurs at large quantities and are possible by using industrial machineries. Firstly, the raw materials for the products are required to be procured from the suppliers. The steps of procurement stated above is a very lengthy process and contributes to a significant delay. Secondly, the packaging is also a bottleneck in the supply chain as many of the products are packaged manually. For instance, whole spices are ground up and processed into powder form, but they are packaged individually by hand. This takes a lot of time and slows down the whole process and is the cause of many delays in shipments. Thus, these two activities require the longest time and serve as a bottleneck in the supply chain of SK Agro Food Processor.

5. Identification of Problems and Recommendations.

The purpose of this report was to analyze the supply chain of SK Agro Food Processor. After an extensive analysis, several problems were identified in their supply chain. They are: -

- Many of the record keeping at the factory is done manually since many of the employees are not adept at technology. This is a major drawback to SKAFP as it leads to slower flow of information across the supply chain. As the information is not passed efficiently, management cannot make appropriate decisions when required. One of the feasible solutions to this is to employ qualified personnel and implement proper IT integration across the company. This will lead to better access to information and will make decision making easier.
- The inventory is not tracked properly at SKAFP. There were instances when production had to be halted due to unavailability of raw materials as no order were made when raw material inventory dipped below the reorder point. These errors can also lead to many other inaccuracies across the supply chain. Appropriate inventory management software is required to properly track inventory and combat the existing inaccurate tracking.
- Wastage is very high as there are frequent power shortages and machineries malfunctions. The faulty machineries cause many defects in the finished goods. They don’t have in house technicians on call and there can be a delay for the machineries to be repaired. Moreover, poor quality raw materials also lead to high wastage. These wastages can be reduced by having a technician on call and by sourcing from vendors that provide good quality raw materials in a consistent manner
- As stated above, the packaging process of many product is very slow and causes a significant lag in time. This bottleneck can be reduced by implementing system wide automation to significantly reduce the time required for packaging.

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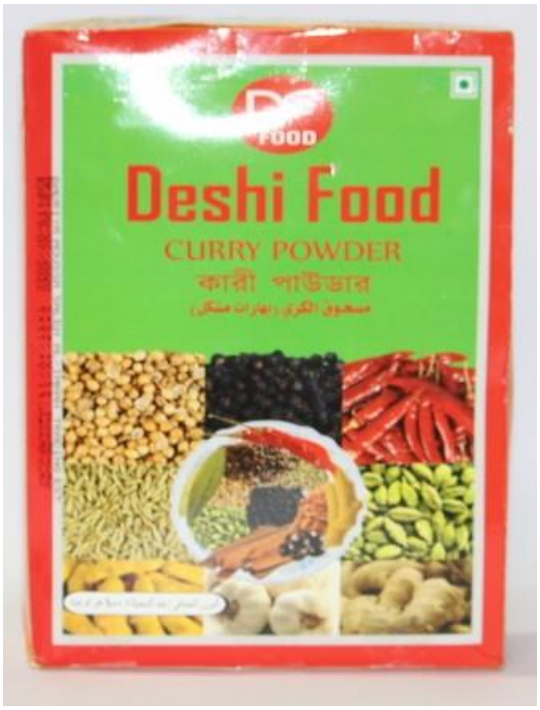
Appendix



Picture 1: Product – Curry Powder
(Primary Packaging)

Picture 2: Product – Dry Cake
(Primary Packaging)

Picture 3: Product – Jhal Muri
(Primary Packaging)

Picture 4: Product – Salted Biscuit
(Primary Packaging)

Picture 5: Machine – Rotary Oven

Picture 6: Machine – Chain Oven

Picture 7: Dry Cake out of oven

Picture 8: Dry Cake automated packaging

Picture 9: Automated Packing Machine

Picture 10: Packed in Master Carton (Secondary Packaging)

Picture 11: Storage of Master Cartons