# Internship Report on

Inventory and supply chain management of Ispahani Agro Limited

**Submitted to,**

The Department of Business Administration
Daffodil International University

**Submitted by,**

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ISPAHANI AGRO LIMITED

## Internship Report on

# Inventory and supply chain management of Ispahani Agro Limited

## Supervised by,

**Dr. Nurul Mohammad Zayed**
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**Date of Submission: 3rd July, 2024**

# Letter of Transmittal

Date: 3rd July, 2024

To
Dr. Nurul Mohammad Zayed
Associate Professor
Department of Business Administration
Faculty of Business & Entrepreneurship
Daffodil International University

**Subject: Submission of Internship Report on "Inventory & Supply Chain Management of Ispahani Agro Limited".**

Dear Sir,

With due respect, I would like to inform you that this internship report on "Inventory & Supply Chain Management of Ispahani Agro Limited" has been compiled by me. It is an honor for me to present the report before you. I have tried my best in order to finish this paper. It is a wonderful opportunity for me to tackle these issues. I tried hard to make a fantastic and all-encompassing report within a given time frame and limited resources. It's my pleasure working under your guidance on the internship report.

In this report, I have tried to provide more insights. If you need further clarifications, please don't hesitate to ask me for them. I hope this will meet your expectations.

Thank you so much for your understanding and guidance.

Sincerely yours,

Jannatunnesa Meem
ID:203-11-6590
Major in Finance
Program: BBA, Batch: 57th
Department of Business Administration
Faculty of Business & Entrepreneurship
Daffodil International University

# Letter of Acceptance

I herein bear witness that the internship report was done by **Jannatunnesa Meem, ID: 203-11-6590**, a student of the BBA program at Daffodil International University under my supervision. In fulfilment of the requirement for her bachelor's degree, she completed her internship with Ispahani Agro Limited and prepared a report called **"Inventory & Supply Chain Management of Ispahani Agro Limited."** She is able to submit this report.

**Jannatunnesa Meem**, who cannot be trusted easily but has many talents in different fields, has been an incredibly responsible person to work with. She has been the best worker ever since I started working here. May God bless her in every aspect of her life.

Dr. Nurul Mohammad Zayed
Associate Professor
Department of Business Administration
Faculty of Business & Entrepreneurship
Daffodil International University

## Declaration of the Student

I declare this internship report **"Inventory & Supply Chain Management of Ispahani Agro Limited"** as my work. No other school has seen it before. This report fulfils part of my BBA degree requirements at Daffodil International University.

I wrote this after interning at Ispahani Agro Limited, **Ispahani Building 14-15, Motijheel Commercial Area, Dhaka-1000**. Under the Guidance of **Dr. Nurul Mohammad Zayed**. He's an Associate Professor in the Business Administration Department at Daffodil International University.

And, **Manager, Mustafizul Rahman,** Ispahani Agro Limited. My work breaks no rules on current copyrights. I also promise to pay for any damage from not keeping these promises.

Jannatunnesa Meem
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Ispahani Agro Limited started its operation in 2007 and has emerged to be among the most prominent exporting companies within the subcontractor's agricultural business. Having been in the market for more than two decades, the company has been very energetic in the markets it operates it is always one organization that adopts change and at the same time, spearheads sustainable principles as the key drivers. As a subsidiary company of M. M. Ispahani Ltd, Ispahani Agro Limited (IAL) presently runs its agricultural business under the following four umbrellas: Some of these winged divisions are the Ispahani Seeds, the Ispahani Biotech, the Ispahani Crop Health, and the Ispahani Agro Processing.
They strive for the invention of safe food production or Agriculture agriculture-friendly Environment regarding what Ispahani Agro Limited forms part of the 'One-Stop Agriculture' solution framework. As well, we are also vested in supporting the infrastructure for the support of agro-processing and supplying an efficient and sustainable network. The long-term goal is to ensure that the well-informed consumer always gets adequate food; that is healthy and safe food every day. At Ispahani Agro Limited, it is their conviction that they will be able to aid in the boost and the bettering of food security in the world because their production of organic agriculture products is efficient with little or no degrading effects on the environment and economy.
Selling zones, which include the areas in which they operate, or the social units where they function.

As such a company agriculture in the future as was predicted by Ispahani Agro Limited, there will be an improved form of such agriculture, which will have a positive impact on society. Our vision is to be among the pioneers in choosing the direction that would be implemented in agriculture in the global market through enhancement by technical products and helpful alliances to ensure premium quality.

# Acknowledgement

At the very beginning, I thank the Almighty Creator for giving me the strength, confidence, and skill to complete the internship program and the internship report on time despite many challenges. I am very happy to show my thanks to many people for their kind help and motivation, which helped me prepare my internship report. At this time, I must show my deep thanks to those whose support and guidance were very important to get this report done. Let me send my warmest greetings to:

**Nurul Mohammad Zayed** is an Associate Professor in the Department of Business Administration at Daffodil International University's Faculty of Business & Entrepreneurship. His gracious advice, supervision, and recommendations have been a tremendous pleasure to work with and have greatly aided me in finishing my report.

Also, I want to demonstrate my gratitude to **Mustafizul Rahman** (Manager, Accounts Finance, Ispahani Agro Limited), **Sabbir Hossain** (Deputy Manager, Accounts Finance, Ispahani Agro Limited), **Mohammad Imran** (Deputy Manager, Accounts Finance, Ispahani Agro Limited), and **MD Saimun Arefeen,** (Associate Manager, Accounts Finance, Ispahani Agro Limited) for maintaining their belief in me. **Sharmin Alam Joty,** (Executive, Ispahani Agro Limited), and **Biplob Khan** (Inventory Officer, Ispahani Agro Limited) to guide me and to provide a regular understanding of teamwork.

Last but not least, I give my warm thanks to all the members of Ispahani Agro Limited who helped me and made my work experience memorable. I want to show the highest respect to my family and friends. Their love inspiration, and help have been outstanding. It is important to note that this report needed many days of hard work to finish. I thank everyone who contributed to finishing the report. Without their help, this report would not have been completed on time.

# CHAPTER 01
# Introduction

## 1.1 Introduction of Ispahani Agro Limited:

Ispahani Agro Limited is a sister concern of M. M. Ispahani Limited. Ispahani Agro Limited started its operation in 2007 and has emerged to be among the most prominent exporting companies within the subcontractor's agricultural business. Having been in the market for more than two decades, the company has been very energetic in the markets it operates. As a subsidiary company of M. M. Ispahani Ltd. Ispahani Agro Limited (IAL) presently runs its agricultural business under the following four umbrellas: Some of these winged divisions are the Ispahani Seeds, the Ispahani Biotech, the Ispahani Crop Health, and the Ispahani Agro Processing. They strive for invention of safe food production or Agriculture friendly Environment in regard to what Ispahani Agro Limited forms part of the 'One-Stop Agriculture' solution framework. As well, their long-term goal is to ensure that the well-informed consumer always gets satisfactory food; that is healthy and safe food every day. At Ispahani Agro Limited, it is their belief that they will be able to aid in the boost and the bettering of food security in the world because their production of organic agriculture products is efficient with little or no degrading effects on the environment and economy. Selling zones, which include the areas which they operate in, or the social units where they function. As such a company agriculture in the future as was predicted by Ispahani Agro Limited, there will be an improved form of such agriculture, which will have a positive impact on society. Our vision is to be among the pioneers of choosing the direction that would be implemented to agriculture in the global market through enhancement by technical products and helpful alliances to ensure premium quality.

## 1.2 Origin of the study:

Business Administration students must complete an internship to graduate. Ispahani Agro Limited welcomed me as an intern. This report stems from my hands-on experience with daily company tasks, book learning, and guidance from my internal mentor and official boss. It's a mix of real-world know-how and classroom smarts, all wrapped up in one package. The whole shebang gives a peek into what it's like to work at Ispahani Agro Limited - the good, the bad, and the unexpected.

## 1.3 Objectives of the study:

- **General objective:** The general objective of this report is to analyze the inventory and supply chain management of Ispahani Agro Limited.

- **Specific Objectives:**

- To evaluate the performance of the inventory management of Ispahani Agro Limited
- To identify risks related to the supply chain management of Ispahani Agro Limited
- To offer recommendations on the company's inventory and supply chain management.

## 1.4 Scope:

The scope of this internship report encompasses an in-depth exploration of the inventory management system and supply chain management practices at Ispahani Agro Limited (IAL). The study will begin with an introduction to IAL, outlining its historical background, core business activities, and its prominent position within the agribusiness sector. The focus will then shift towards a detailed analysis of IAL's current inventory management practices, including an examination of inventory control methods, stock monitoring systems, and strategies for replenishment. Additionally, the report will delve into the structure of IAL's supply chain, mapping out key components such as suppliers, distribution channels, and logistics management. Throughout the study, emphasis will be placed on evaluating the integration of supply chain management with other functional areas within IAL to optimize efficiency and minimize operational costs. The findings will culminate in practical recommendations aimed at enhancing the effectiveness, transparency, and sustainability of IAL's inventory management and supply chain operation.

## 1.5 Methodology of the study:

The models and the findings in this report are based on many secondary data sources.

**Secondary Data Collection:**

➢ Googling IAL's websites to gather information (2020-2022);

➢ Watching news, print media, and related books for data; and

➢ Analyzing Ispahani Agro Limited's annual report.

## 1.6. Limitations of the Study:

I had to deal with a few obstacles when writing the report. These are;

➢ Due to various confidentiality issues, the following facts and information were gathered with assumptions by examining Ispahani Agro Limited's historical records.

➢ During the internship, there is insufficient time to gather all the necessary information. Due to IAL's company policy, gathering all the information from primary resources is extremely difficult.

➢ Gathering information from secondary resources, which are less dependable than primary resources, is also challenging.

# CHAPTER 02
# Organizational Overview

## 2.1 Historical Background:

Bangladesh is where the roots of Ispahani Agro Limited (IAL) can be traced back to. Actually, it was established out of MM Ispahani Limited, which is a company in Bangladesh. At the beginning of the 20th century, MM Ispahani was founded by Mirza Mehdy Ispahani and initially started as trading and shipping activities. That was however not the end since over the years; it has spread its wings into other sectors such as tea, textiles jute and food processing giving it an esteemed position among other industries in the country's industrial environment. MM Ispahani Limited later diversified into agribusiness thus establishing Ispahani Agro Limited as a subsidiary company. This shift allowed them to use their vast knowledge regarding agriculture making sure that agriculture played a vital part in their development program for Bangladesh. Following this move, today; modern agricultural practices have been integrated with sustainable approaches by which they strive to maintain a balance between growth and environmental conservation so that they continue playing a major role within the agricultural industry in Bangladesh.

## 2.2. Ispahani Agro Limited:

Ispahani Agro is the largest and most representative agricultural firm in Bangladesh that deals in and

through many sectors of this country and offers a broad list of agricultural products and services. It is affiliated with the Ispahani Group which is a group of companies that was established in the 1950s and that is among the most successful businesses both locally and internationally in fields such as tea processing, textiles and agri-business.

**2.2.1 IAL Business Wings:** There are four wings in Ispahani Agro Limited: The Seed Wing, Biotech Wing, Rice Wing, and Agro-Processing Wing. Here is a brief explanation of what each of these four wings does. The activities of these four wings are briefly explained below: -

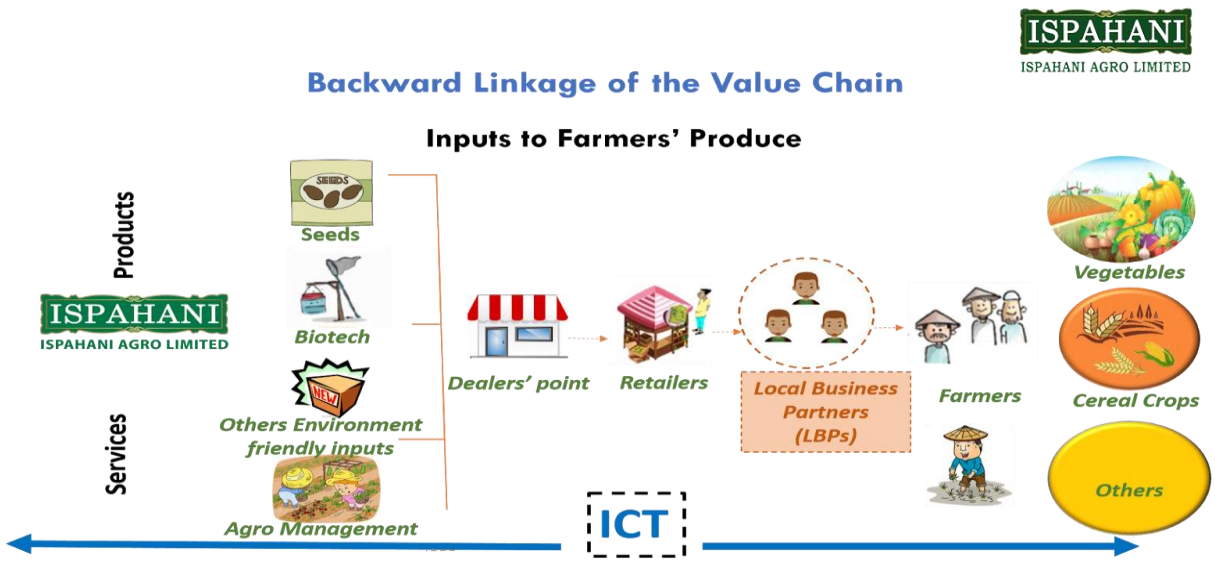
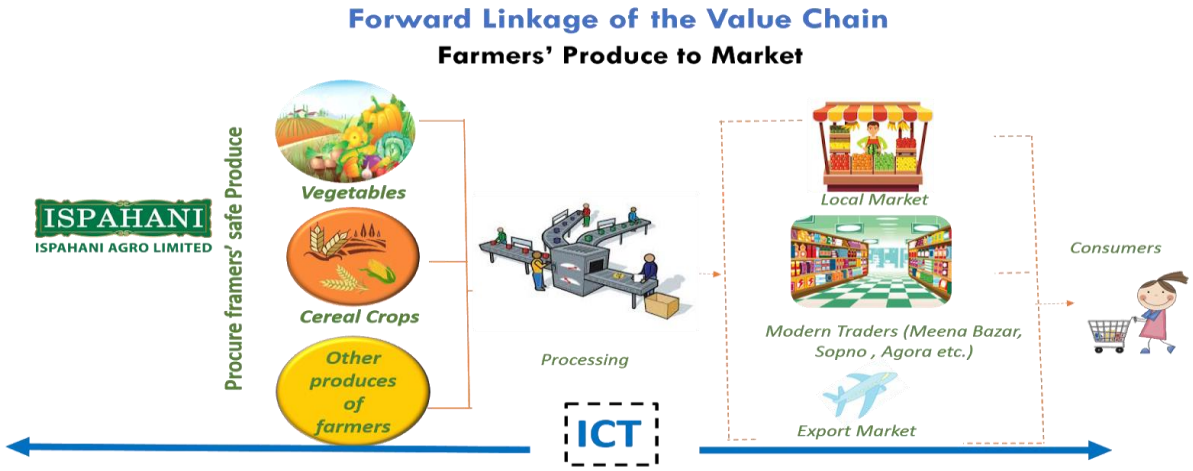



**Figure 2.1 Backward and forward linkage of the value chain**.




**A) ISPAHANI SEEDS (Advancing Farmer's Progress for National Prosperity):**

Ispahani Seeds' is actively involved in the exploration, cultivation, refinement and promotion of a diverse array of crop strains. This encompasses cereal crops, oil seeds, tuber crops, and vegetable seeds. The division has successfully established a cutting-edge research and development centre, a fully-equipped processing facility and a meticulously controlled warehouse dedicated to maintaining the standards of top-notch quality seeds. **The 'Ispahani Seeds' basket includes:**

1. Vegetable seeds
2. Rice seeds
3. Wheat seeds
4. Maize seeds
5. Seed Potato

6. Jute seeds
7. Oil seeds

**B) ISPAHANI BIOTECH (Dedicated to Preserving Nature's Harmony):**

'Ispahani Biotech', guided by its unwavering dedication to preserving the equilibrium of nature, directs its efforts towards advanced research and development in the rem of bio-pesticides and associated technologies. This focus extends to a range of crops, including vegetables, rice, tea, and sugarcane. **The biotech product portfolio of IBT consists of:**

1. Pheromones
2. Microbial
3. Biocontrol agents
4. Bio Miticide
5. Bio Fungicide
6. Bio Viricide
7. Bio Bactericide

**C) CROP HEALTH**

'Ispahani Crop Health' marks the latest addition to the portfolio of Ispahani Agro Limited, aiming to make its mark by introducing, refining and presenting globally acclaimed micronutrients and other essential inputs to the domestic market. Guided by the principle of "Nurturing Healthy Crops for Optimal Yields", this initiative delivers indispensable supplements vital for the robust growth and nourishment of plants. **The components of Crop Health currently encompass the following:**

1. Zinc
2. Boron
3. PGR
4. Magnesium Sulphate
5. Vermi-Compost
6. Other Micro-Nutrients

**D) AGRO-PROCESSING (ISPAHANI Ingrained in Heritage, Health, and Uncompromised Purity):**

- **Rice:**

In 2010, Ispahani Agro Limited (IAL) made its entry into the rice market with the launch of Chinigura rice. As of now, IAL offers a diverse range of rice varieties, **including**

1. Aromatic rice (Chinigura, Kalijira, Tulshimala)
2. Per boiled rice (Minicate, Najirshail, Kataribhog, Banglamoti etc.)

- **Garden fresh "Mango" (Chemical free mango from the garden)**

Since its establishment, Ispahani Agro Limited (IAL) has remained dedicated to providing consumers with nourishing and pristine food products. In line with this ongoing commitment, IAL has been consistently delivering garden-fresh mangoes (free from Formalin and Carbide), sourced from carefully selected orchards to the market since 2011. In addition to its offerings of rice and garden-fresh mangoes, Ispahani Agro Processing is currently planning to embark on a strategic expansion into the following sectors:

1. Processing chemical-free vegetable products
2. Edible oil

**Approach:**

Ispahani Agro Limited supports sustainable development objectives as well. This means that sustainability, profitability, longevity and wellness are merged within Ispahani Agro Ltd to show different facets of sustainable agriculture. Ispahani Agro Limited takes care of three aspects in order for agriculture to remain sustainable:

| | |
|---|---|
| **Environmental Health** | Bringing an environmentally-friendly agro solution to the farmers' doorstep.<br>IAL produces environmentally friendly bio-pesticides-based pest management |
| **Economic Profitability** | Biopesticides-based pest management on average reduces farmers' production cost to one-third.<br>Quality Seeds of IAL ensures high yield. |
| **Social & Economic Equity** | IAL works on farmers' capacities build-up through learning and agro-counseling events. |

## 2.2.2 Products & Services

**A) Products:** Targeting safe food security Ispahani Agro Limited has designed "One Stop Agriculture" composed of the following business wings: - Seed, Biotech, Rice and Agro-Processing.

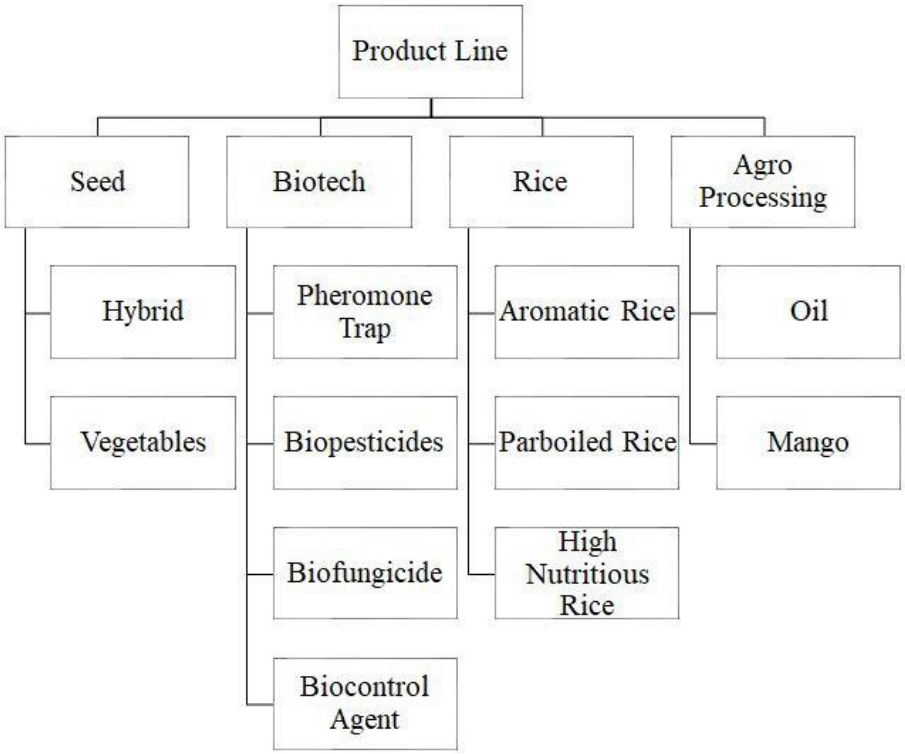



**Figure 1.2 Product Line**

1. **Seed Wing:** "Ispahani Seed" is engaged in the research, production, processing, and marketing of many crop varieties, including cereal crops, oilseeds, tuber crops, and vegetable seeds. It has already established a state-of-the-art R&D facility, a fully-equipped processing unit, and a conditioned warehouse for quality seeds. The Ispahani seeds basket includes: -

➢ **Rice Seeds:** They produce various sorts of rice seeds some of which include Agomoni, Durbar, Ispahani 1, Ispahanai 2, Nobin, Winall 2, Amon OP, Boro Op, Pabonno, etc.

➢ **Vegetable Seeds:** They produce different variety vegetable seeds of Ash Gourd, Bitter Gourd, Bottle Gourd, Ridge Gourd, Snake Gourd, Sponge Gourd, Sweet Gourd, Cauliflower, Chili, Coriander, Cucumber, Brinjal, Carrot, Knol Khol, Okra, Tomato, Potato, Country Bean, Green Spinach, English Spinach, Indian Spinach, Kang Kong, Khira, Red Amaranth, Stem Amarnath, Radish, Yardlong Bean, etc.

**Others:** They also produce seeds of Maizes, Jute, Watermelon, Wheat, Forage Grass, etc.

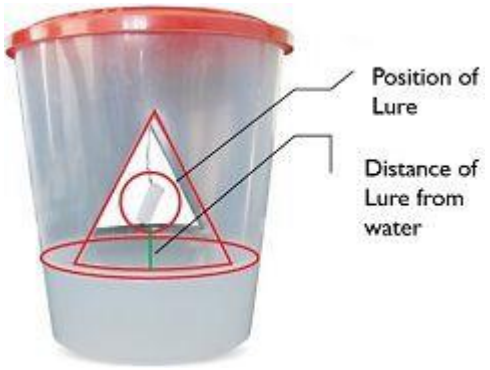
**Biotech Wing:** Ispahani Biotech, with the "commitment to maintaining the balance of nature", focuses on research & development of bio-pesticides and relevant technologies for vegetables, rice, tea, and sugarcane. To save the plants from harmful insects, Ispahani Agro has come up with environment-friendly biotech products, which are, Pheromone Trap, Biopesticides, Biofungicide, Biofertilizers, Microbial, Biocontrol Agents, Bioherbicide.

**Pheromone:** Ispahani produces various sorts of pheromones some of which are Q-Pherro, BSFB, Bactro-D, and Spodo Lure.


**Figure2.3: Pheromone**

**Pheromone Trap**: A pheromone trap is a type of insect trap that uses pheromones to lure insects.

**Figure 2.2:Pheromone Trap**




**Biopesticides:** Certain types of pesticides extracted from such natural resources as animals, plants, bacteria, and certain minerals are biopesticides. Ispahani has come up with biopesticides that will be

hostile to the insects but not to the environment. They produce, Ecomec, Bioneem Plus, Fawligen, and Fall Army-Lure

**Biofungicide**: is a formulation of living organisms used to regulate the activity of fungi and bacteria that are pathogenic to plants. Ispahani Agro produces Bio-derma to control the activities of plant pathogenic fungi and bacteria.


**Figure 2.3:Bio Darma Powder**

**Biocontrol Agent:** Ispahani also uses biocontrol agents such as Trichogrammatid, and Bracon Hebetor to eliminate pest larvae.

**Rice Wing:** Ispahani Agro Limited (IAL) debuted in the rice market through the introduction of Chinigura rice in 2010. Currently, IAL has the following varieties of rice products available:

Aromatic rice (Chinigura, Kalijira, Tulsi Mala, Badshah Bhog,)

Parboiled rice (Minicate, Najirshail Kataribhog, Banglamoti, etc.)

High Nutritious rice (Beruin, Black, Low GI)

**Agro-Processing Wing**:

Garden fresh "Mango" (Chemical-free mango from the garden): Ispahani Agro Limited (IAL) has been striving to deliver healthy and fresh food products to the consumer since its inception. As part of this continuous effort, IAL has been supplying garden-fresh mangoes (Formalin and Carbide free) from selected gardens to the market since 2011.


**Figure 2.4: Garden Fresh Mango**

**Future:** Ispahani Agro Limited is currently working on bringing more products into the Agro Processing radar and also expanding to the following sectors: -

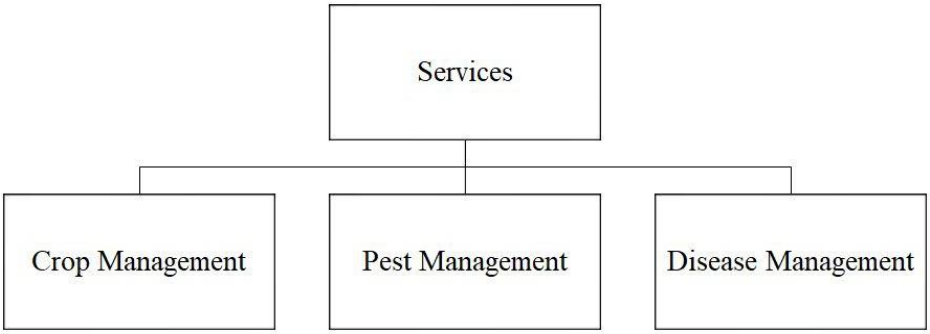
Processing chemical-free vegetable products by farmers.

Edible oil (rice bran oil, sunflower oil, etc.)

Processing and packaging pulses.

**B) Services**

The services of Ispahani Agro Limited include the management of Crops, Pests, and Diseases.




**Crop Management:** This process consists of preparation for seed sowing, mainland preparation, fertilizer management, pest & disease management, and harvesting.

**Pest Management**: is the usage of pheromone to suppress the pests which are harmful to the crops.

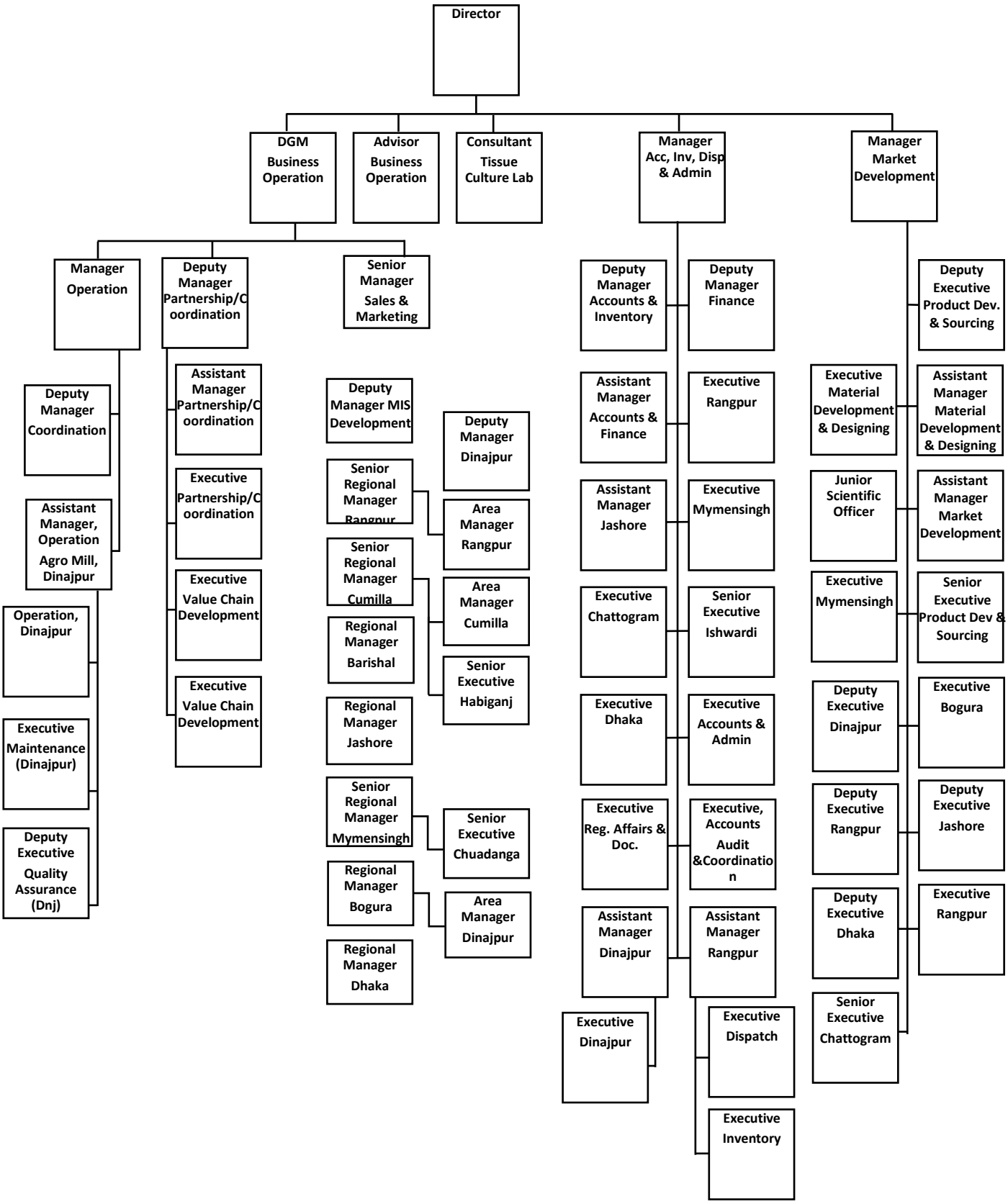
**Disease Management:** Ispahani Agro uses its Biofungicide product, "Bioderma" to prevent diseases of crops.

### 2.2.3. Branches of IAL:

Ispahani Agro Limited has its operation in Dhaka, Bangladesh which provides easy accessibility and operational access to the customer market of the country.

- Motijheel (Corporate Head Office)
- Agrabad (Head Office)
- Bogura
- Dinajpur
- Jessore
- Rangpur
- Cumilla
- Barishal
- Mymensingh

## 2.4. Organogram:



# *Chapter 03*
# Inventory Management

## 3.1. Inventory Management:

Any profit-making business should consider an inventory management system as an important aspect of the firm. This is a method of controlling and supervising the flow of stocks which a company uses to produce goods for either selling or distributing. An inventory, on the other hand, consists of both goods in process and finished products and is crucial for maintaining appropriate stock levels and optimizing a corporation's profitability. It also helps companies avoid any potential losses associated with inventory. Effective management of stock has become critical for any business not only because it is one of its greatest assets but also because inventory level directly affects company profits.

Having something in stock is essential for businesses since customers can just shift to another seller if they cannot find the required product from you.

Insurance, storage and maintenance are examples of expenses incurred in keeping inventories. This is why most strategies fall apart when they must have enough units whenever necessary but not overstock them. As a result, firms can have a reason to track their stocks. Inventories may be managed using systems for different purposes comprising of tracking inventory costs during production and sales, informing businesses when to restock and enabling them to follow profits. It aids in forecasting the amounts of products that will be on hand as well as the prices that these goods will sell while predicting demand for expected products. For this matter, an inventory management system considers every bit of it concerning the inventory movement within the manufacturing process until it gets distributed to customers. The procedure involves following client orders, shipping details, expenses on selling stocks and other stuffs related to sales activities like returns due to expired materials or damaged items. Lastly, such system should even include tracking all cardinal steps involved in the whole course whether it uses paper or notebook or cutting only because if it is used right it gives out quick results

.

## 3.2 Types of Inventory:

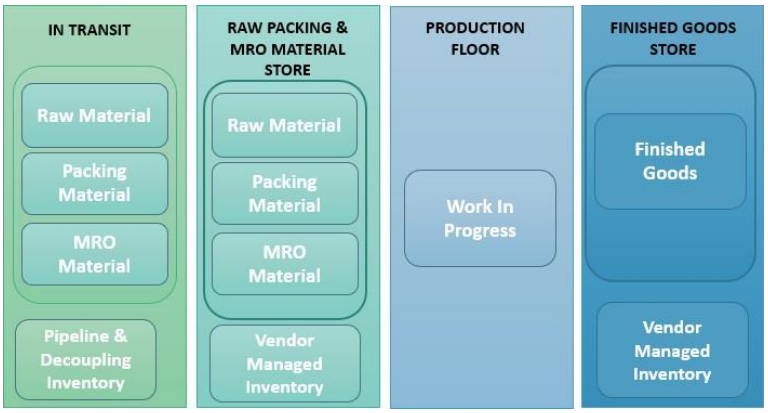



**Figure 3.1**

## 3.3 Demonstration of inventory management details of Ispahani Agro Limited:

### 3.3.1 Inventory management system of IAL:

There is an annual budget. Depending on the annual budget the Production department sets a production target. Based on the production target team decides to require an amount of raw material and packet material.

In Ispahani Agro Limited, for any kind of shortage in stock of raw material, there is a requisition (Not in stock). Based on approved requisition supply chain departments communicate with listed vendors or new vendors. After that, collect quotations from the vendor. Based on these quotations, the supply chain department prepares a comparative statement and then only one vendor is selected for purchasing raw material. Then the purchase order (PO) is created. Along with the product the supplier submits a delivery challan to the delivery location. Delivered products bill copy is submitted to the accounts by the vendor based on the delivery challan. The concerned person receiving the delivery challan, checks the product, MRR and sends authorized delivery challenges to the accounts and the product is recorded by MRR to the accounting software. Upon receiving the material in that or requisition place by the production department is fulfilled by delivering the material.


Here is a flowchart illustrating the procurement process at Ispahani Agro Limited:

1. **Set Annual Budget**
    - The Production Department sets the production target based on the annual budget.
2. **Determine Required Raw & Packet Material**
    - The team decides the amount of raw and packet material needed based on the production target.
3. **Create a Requisition (Not in Stock)**
    - If there is a shortage of raw material, a requisition is created.
4. **Communicate with Vendors (Listed/New)**
    - The Supply Chain Department communicates with listed or new vendors based on the approved requisition.
5. **Collect Quotations from Vendors**
    - Quotations are collected from the vendors.
6. **Prepare Comparative Statement**
    - A comparative statement is prepared based on the quotations.
7. **Select Vendor for Purchasing**
    - One vendor is selected for purchasing the raw material.
8. **Create Purchase Order (PO)**
    - A purchase order is created for the selected vendor.
9. **Supplier Delivers Product with Delivery Challan**

- The supplier delivers the product along with a delivery challan.

10. **Delivery Challan Received and Product Checked**
    - The delivery challan is received, and the product is checked.
11. **Create a Material Receipt Report (MRR)**
    - A Material Receipt Report (MRR) is created.
12. **Authorized Delivery Challan Sent to Accounts**
    - The authorized delivery challan is sent to the accounts department.
13. **Product Recorded in Accounting Software**
    - The product is recorded in the accounting software.
14. **Material Delivered to the Production Department**
    - The material is delivered to the production department, fulfilling the requisition.

This flowchart visually represents the sequence of steps and interactions between different departments to fulfil a raw material requisition.

### 3.3.2 Inventory Stock data of each wing for the year 2022:

| Particulars | Opening Balance | Purchased Balance | Closed Balance | Total Amount |
|---|---|---|---|---|
| **Seed Wing** | 199002494 | 917858475 | 311790271.2 | **805070697.8** |
| **Biotech** | 134250427 | 261743937.7 | 106187799 | **289806565.7** |
| **AP Wing** | 98856475 | 664446545.5 | 388953633 | **374349387.5** |
| **Crop Health** | 27924267 | 459863257 | 84541512.26 | **403246011.7** |
| **Total** | **460033663** | **2303912215** | **891473215.5** | **1872472663** |

## 3.4 Inventory Management Calculations for Ispahani Agro Limited:

Effective inventory management is crucial for Ispahani Agro Limited to ensure optimal stock levels, minimize costs, and efficiently meet customer demand. Here are key calculations used in our inventory management processes:

**3.4.1 Economic Order Quantity (EOQ):** EOQ helps us determine the ideal order quantity to minimize inventory costs, including ordering and holding costs.

**Economic Order Quantity (EOQ):**

**Let's assume:**

- Annual demand (D) = 10,000 units
- Ordering cost (S) = $50 per order
- Holding cost (H) = $2 per unit per year

EOQ =√ (2DS/H)

=√ (2*10000*50/2)

=707 Units

**3.4.2 Reorder Point (ROP):** Reorder Point (ROP): ROP indicates the inventory level at which a new order should be placed to avoid stockouts, ensuring continuous availability of our agro products.

**Formula: ROP=d*L**

d: Average demand per period

L: Lead time (time between ordering and receiving)

**Assuming:**

Average demand per period (d) = 200 units per week

Lead time (L) = 2 weeks

ROP=d×L

=200×2=400 Units

**3.4.3 Average Inventory:** This is the average quantity of inventory held over a period, helping us monitor stock levels effectively.

- **Formula:** Average Inventory= (Beginning Inventory+ Ending Inventory) /2

**Assuming:**

- Beginning Inventory = 500 units

- Ending Inventory = 300 units

Average Inventory= (500+ 300)/2

= 400units

**3.4.4 Inventory Turnover Ratio:** This ratio measures how often inventory is sold and replaced, indicating the efficiency of our stock management.

- **Formula:** Inventory Turnover = Cost of Goods Sold (COGS) /Average Inventory

**Assuming:**

- Cost of Goods Sold (COGS) = $60,000

- Average Inventory = 400 units

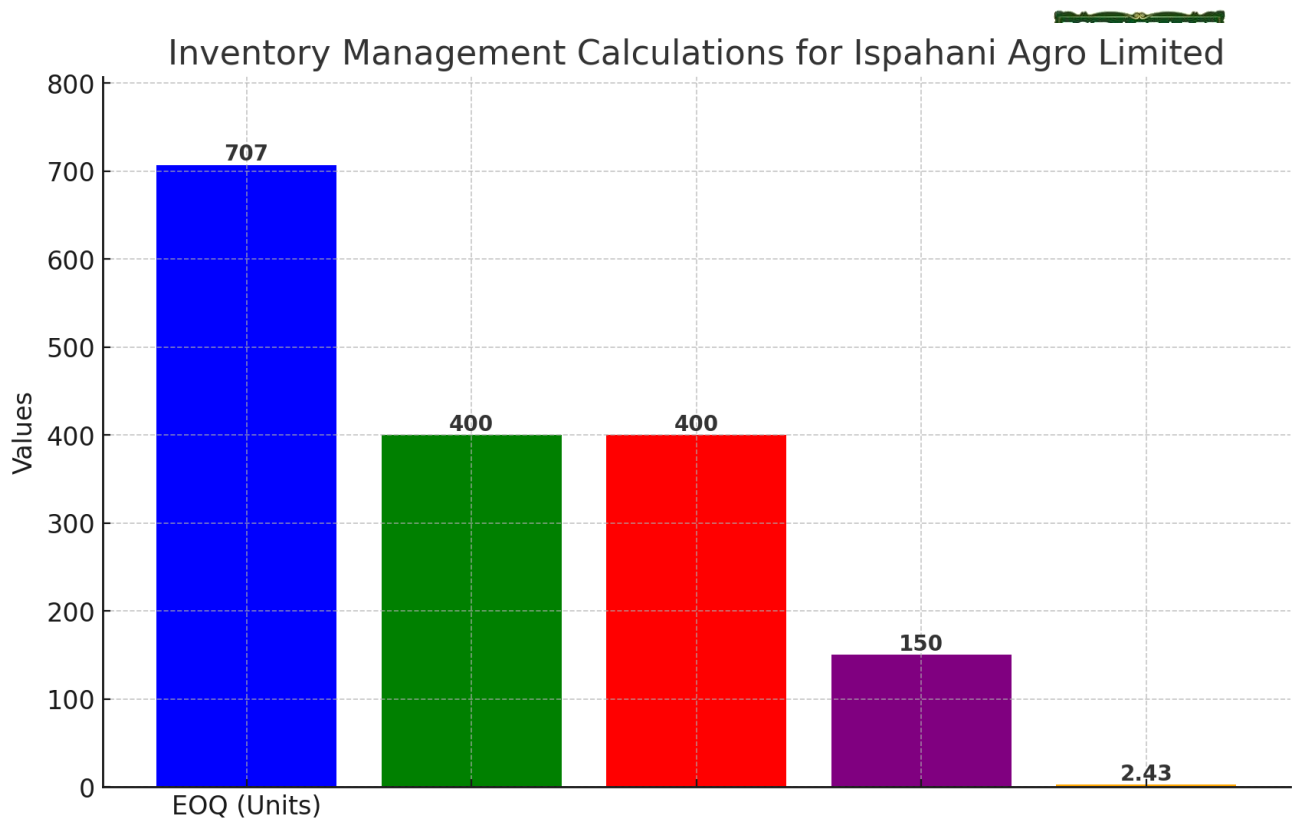
Inventory Turnover = 60,000/400 = 150times

**3.4.5 Days Sales of Inventory (DSI):** DSI indicates the average number of days it takes to sell the entire inventory, important for our perishable agro products.

**Formula:** DSI=365/Inventory Turnover

DSI=365/150 times

= 2.43 days or 2 days




Here's a bar chart representation of the inventory management calculations for Ispahani Agro Limited:

- **Economic Order Quantity (EOQ):** 707 units
- **Reorder Point (ROP):** 400 units
- **Average Inventory:** 400 units
- **Inventory Turnover Ratio:** 150 times
- **Days Sales of Inventory (DSI):** 2.43 days

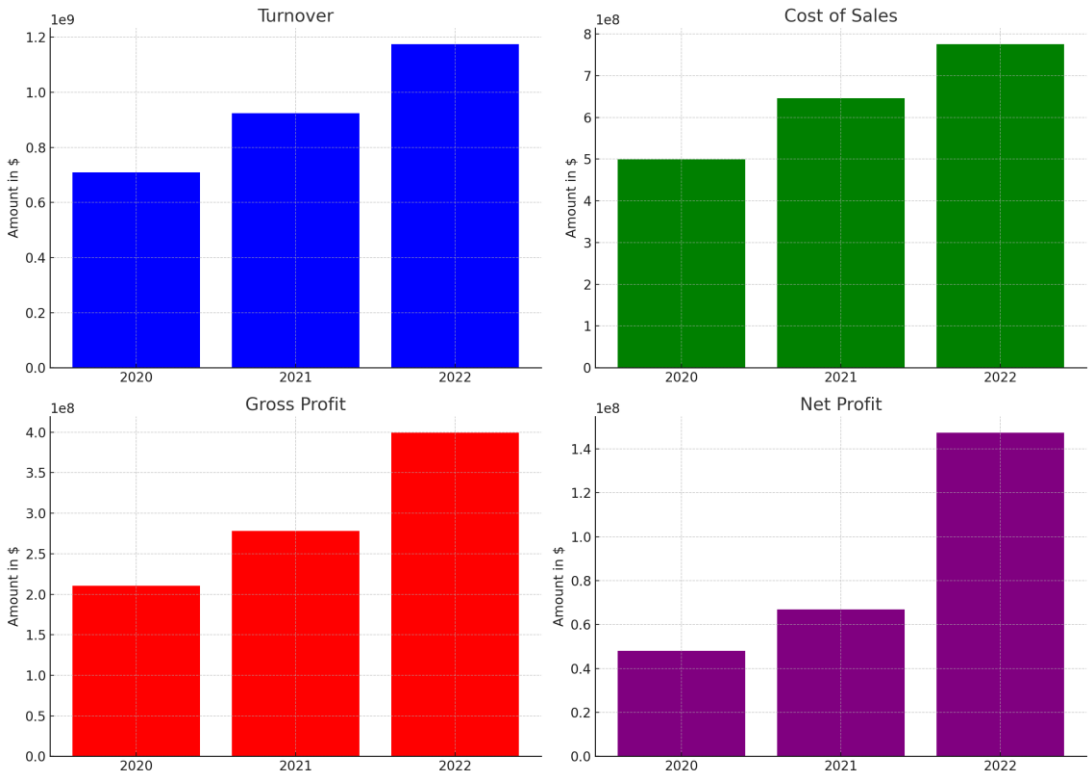
This visual representation helps in quickly comparing the different metrics and understanding the inventory management performance.

## 3.5 Profit/loss analysis on the basis of Inventory stock:

**Profit/loss Analysis**

**From the years of 2020 to 2023**

| Particulars | 2020 | | | 2021 | | | 2022 | | |
|---|---|---|---|---|---|---|---|---|---|
| **Turnover** | | **709,328,327** | | | **924,053,142** | | | **1,175,219,088** | |
| **Cost of Sales:** | | **498,976,244** | **70.34%** | | **645,738,787** | **69.88%** | | **775,686,074** | **66.00%** |
| Opening Stock | 356.946,779 | | | | | | 467,319,473 | | |
| Add Purchase | 506,625,697 | | | 425,943,124 | | | 551,745,731 | | |
| Less Closing Stock | 425,943,124 | | | 612,238,028 | | | 321,587,919 | | |
| | 437,629,351 | | | 467,319,473 | | | 697,477,285 | | |
| **Direct Overhead** | 61,346,892 | | | 570,861,678 | | | 78,208,789 | | |
| | | | | 74,877,109 | **278,314,355** | **30.12%** | | **399,533,014** | **34.00%** |
| **Gross Profit** | | **210,352,084** | **29.66%** | | | | | | |
| **Income Statement:** | | **2,505,271** | | | **12,472,358** | | | **21,977,636** | |
| **Other Income** | | 212,857,355 | | | 290,786,712 | | | 421,510,650 | |
| **Indirect Overhead** | | **159,328,524** | | | **216,775,882** | | | **274,068,882** | |
| **Income Tax** | | **5,430,260** | | | **7,122,594** | | | **147,441,768** | |
| **Net Profit:** | | **48,098,571** | **6.78%** | | **66,888,237** | **7.24%** | | **147,441,768** | **12.55%** |




Below is the bar chart depicting the financial data of Ispahani Agro Limited from 2020 to 2022. Each section of the visualization showcases a different primary metric: Turnover, Cost of Sales, Gross Profit, and Net Profit, facilitating straightforward comparison.

# *Chapter 04*
# Supply Chain Management and Risk Resilience

## 4.1 Present Scenario of Supply Chain Management of IAL:

**Supply chain:** Supplies are said to encompass all quantities of certain commodities and services that purchasers can obtain. It is actually often defined that the supply chain at Ispahani Agro Limited is a "network of manufacturers and service providers working together to convert goods from raw materials to the end user". Supply Chain Management (SCM) oversees flows of information, products, and finance between suppliers, manufacturers, distributors, retailers, and final customers.

In Ispahani Argo's case, SCM ensures smooth running by integrating and coordinating various entities involved in the process. This involves developing plans, and strategies for making actions into realities, handling procedures as well and monitoring supply chain activities. The objectives are linking supply with demand; improving global logistics; building competitive infrastructure; creating net value; and measuring worldwide performance.

It manages transportation systems involving raw materials for manufacturing processes, packaging components for food items or other finished goods which make up these products as well as finished goods themselves. They ensure that these items are transported from producer to consumer. Linked networks, channels and business nodes support this process.

### 4.2. Main Functions of Supply Chain Management at Ispahani Agro Limited:

**a. Production Planning:**

- Matching production plans with demand projections in order to maximize the use of resources and minimize waste.
- Liaising with other departments to ensure that raw materials and inputs are available on time.

**b. Inventory Control:**

- Striking a balance between costs and customer needs by maintaining optimal inventory levels.
- Monitoring inventory turnover ratio and employing corrective measures to reduce excess stockholding, and avoid out-of-stock situations.

**c. Vendor Management:**

- Developing relationships with suppliers so as to have consistent supplies of materials.
- Carrying out contract negotiations and supplier performance management for quality assurance and cost-effectiveness.

**d. Distribution Management:**

- Supervising the finished product movement from manufacturing plants through warehouses until it reaches the customers.
- Implementing optimal distribution strategies for reducing transit time and costs.

**e. Channel Management:**

- Taking charge of different sales channels that guarantee efficient delivery to end consumers
- Coordinating with retail stores, wholesalers, intermediaries, etc., in order to optimize the distribution system

**f. Payment Management:**

- Making payments for the supply chain transactions, which include paying suppliers as well as collecting from buyers
- Making sure that payment processing is done accurately and on time

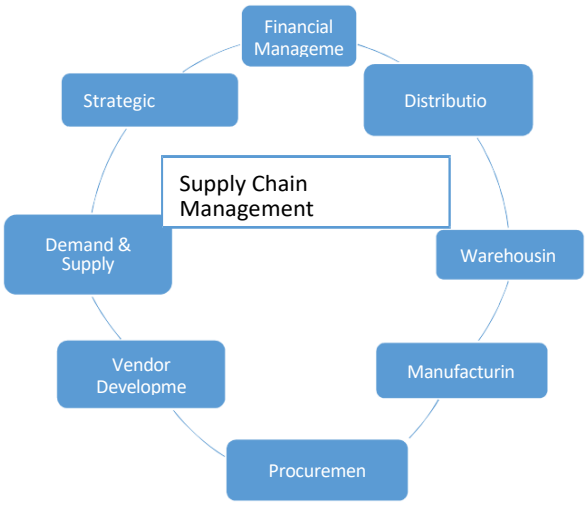



**Fig: 4.1: Supply Chain Management Process of IAL**

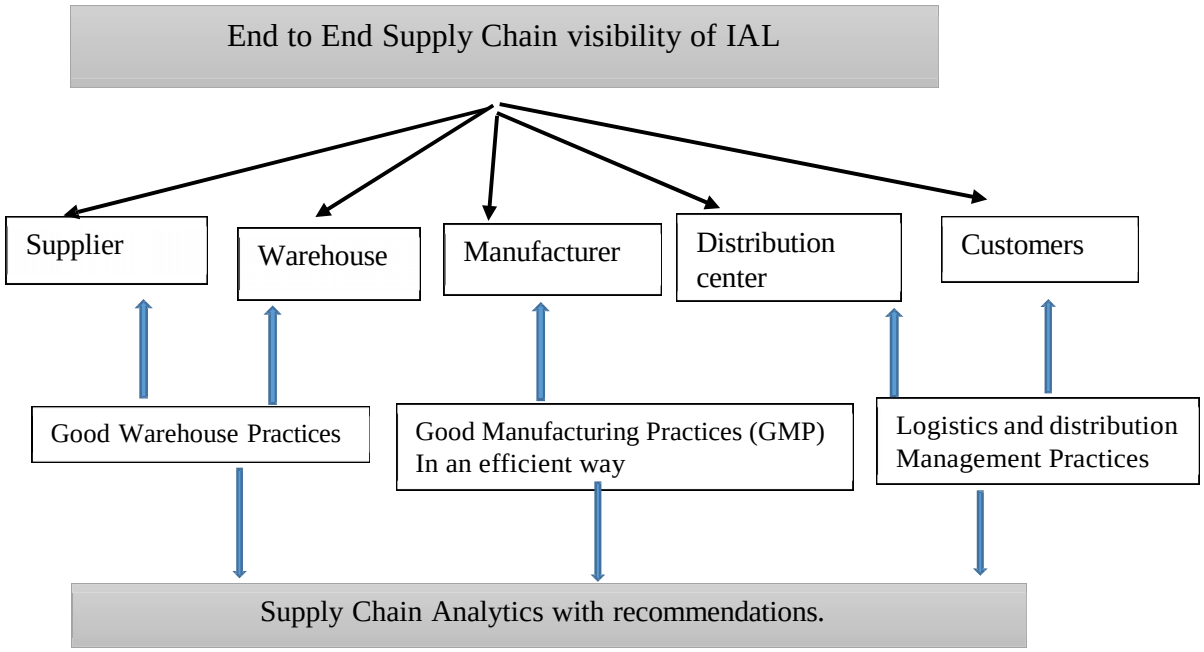



**Fig: 4.2: End to End Supply Chain visibility of IAL**

## 4.3 Current Situations on Procurement and Vendor Management of Ispahani Agro Limited:

Obtaining goods or services for an organization's business purposes from suppliers is what procurement entails. Every organization has its own distinct procurement process. It can be defined as the procurement

operation by which a demand is being processed up to the point at which it is fulfilled. There are several activities that make up the procurement operation of Ispahani Agro Limited such as:

- Procurement planning.
- Development of specifications and standards.
- Selection of suppliers.
- Evaluation of suppliers.
- Price bargaining
- Procurement requisitioning
- Reviewing requisitions
- Creation of purchase orders
- Buying
- Receiving goods/services
- Storage and inventory control
- Vendor payment

Ispahani Agro Limited believes in sourcing raw materials (RM) and packaging materials (PM) from approved sources, which is a key corporate strategy. This ensures that goods, services, and works are produced with the right quality, quantity, and location to meet buyer expectations and at the best possible price (Wheeled, 2010). By procuring best quality products at reasonable prices and reducing costs in processing and distribution throughout the country will greatly improve profitability

### 4.3.1 Supplier Focus

This section looks into how Ispahani Agro Limited chooses and manages its suppliers so that they are able to meet the quality specifications demanded by the company. It consists of a number of suppliers, selection criteria for suppliers, services and information exchange, supplier involvement, and length of relationship with a supplier company.

### 4.3.2 Suppliers

Ispahani Agro Limited has 13 local suppliers and 11 foreign suppliers.
Selections are based on requisitioned items, the quantity of supplies being sold by a supplier per month, and scores from quality audits for each item supplied by the seller.

### 4.3.3 Supplier Risk Classification

Categorization of risks associated with all new materials is primarily based on inherent food safety risk levels associated with the material considering intended use as well as the nature of operation. Material risk classification should be reviewed at least once in two years or when it is necessary by the Quality Assurance (QA) team.

### 4.3.4 Supplier Confidence Level

A confidence level is given to a supplier depending on their record on quality, performance (release parameters/monitoring parameters) and audit responsiveness. The QA reviews the confidence level of the supplier at least once every year.

### 4.4.5 4.5.3 Planning of Supplier Audits – Principles

The frequency of the audits depends on the risk and confidence recorded by the supplier. Prioritizing audits are done for high-risk items from low-confidence suppliers.

### 4.3.6 Pre-audit Checks

Information on product-specific issues is obtained and investigated during the audit exercise. There is a pre-assessment questionnaire which is sent to the supplier.

### 4.3.7 Conducting Audit

It involves a wrap-up meeting with a vendor to discuss identified gaps and deadlines for them to be closed.

### 4.3.8 Reporting an Audit

Audit reporting is conducted in electronic form while Supplier Assessment Reports go out to Suppliers, Procurement Groups and Factory Supply Chain Managers, amongst others. Approved, Conditionally Approved or Not Approved are categories into which suppliers can fall based on audit report results.

### 4.3.9 Agreement

The was one general requirement that applied to all the products. It was a single document that contained the list of all products that were included in the agreement. Other requirements could be product-specific and might relate to technical dimensions among others, pertaining to a particular type of merchandise. It is a quality agreement reached between the supplying site and the organization. The organization confirms that what is stated in the agreement matches with local registered details. The complete quality agreement contains quality and technical conditions for the manufacture and supply of the products involved.

### 4.3.10 Checking of Supplier Sites at Material Reception

Audit inputs are used in changing RM/PM risk classification. When sampling, it is important to check whether or not there are differences between manufacturing site(s) and materials received especially where traders/suppliers have more than one site involved in material supplies. The results of these checks form part of the release criteria. The approved supplier list is updated based on supplier performance and communicated to relevant stakeholders.

## 4.4 Ispahani Agro Limited's Supply Chain Risk Management:

**Overview:** To ensure the smooth flow of materials from suppliers to the manufacturing units and ultimately to the customers, supply chain management is a crucial job for Ispahani Agro Limited. Yet, a number of dangers might impair operations, lower the quality of the output, and reduce profitability in this intricate network. The main techniques for efficiently managing and reducing supply chain risks are described in this paper for Ispahani Agro Limited to use.

### 4.4.1 The Identification and Evaluation of Supply Chain Risks

- **Risk Assessment Framework**

A comprehensive framework for risk assessment should be established by Ispahani Agro Limited in order to identify risks throughout the supply chain. This will involve categorizing risks according to operational, financial, strategic, compliance and reputational categories. The company can therefore prioritize its mitigating attempts by evaluating the probability and impact of each risk category.

- **Evaluation of Supplier Risk**

Suppliers are essential links in the supply chain and have a direct impact on the operations of the company. Ispahani Agro Limited should also be involved in periodic evaluation of supplier risks for instance regarding financial position, capacity, quality assurance process as well as compliance with regulatory requirements. This can be done through audits, performance reviews or continuous monitoring.

### 4.4.2 Strategies for Managing Supply Chain Risks

- **Diversification of Suppliers**

Relying on just a few suppliers makes it more susceptible to disruptions. Therefore, Ispahani Agro Limited should seek to diversify its sources of supply both across different locations and through numerous suppliers. By doing this there will be reduced dependency on one supplier thus spreading the risk over many sources. This is also important because having backup suppliers is like having a safety net when there is an emergency during a downtime period (performance review).

Building good relations with suppliers results in collaboration and trust. Ispahani Agro Limited should closely engage suppliers to develop common contingency plans, exchange practical strategies on risk management, and have early-warning systems. Long-term agreements and strategic alliances could also consolidate such ties.

- **Technological Integration**

Investing in sophisticated technology can improve the supply chain visibility and control. So, for example, Ispahani Agro Limited needs to implement integrated supply chain management systems that provide real-time information about stocks, supplier performance as well as logistics. Such technologies include blockchain, IoT (Internet of Things) and AI (Artificial Intelligence), which enhance traceability; predict potential disruptions; and aid proactive decision-making.

- **Inventory Management**

Optimal inventory levels must be maintained to mitigate risks in the supply chain. In order for there to be no overstocking while still ensuring that there is enough stock to meet demand, Ispahani Agro

Limited should use just-in-time inventory practices. Safety stock levels need to be determined through risk assessments while buffer inventories are kept for important parts.

- **Flexibility in Logistics**

A company's ability to adjust to unanticipated disturbances might be aided by flexible logistics. To guarantee prompt delivery, Ispahani Agro Limited has to have a variety of logistical routes and transportation options. Working together with third-party logistics providers (3PLs) might provide you with more flexibility and knowledge when it comes to handling transportation-related hazards.

- **Strengthening Supplier Relationships**

Building strong relationships with suppliers fosters collaboration and trust. Ispahani Agro Limited should work closely with suppliers to develop mutual contingency plans, share risk management practices, and ensure timely communication during disruptions. Long-term contracts and strategic partnerships can further solidify these relationships.

### 4.4.3 Risk Mitigation and Contingency Planning for Ispahani Agro Limited

**Business Continuity Planning:**

• Develop and update a robust BCP to manage supply chain risks.

• Outline clear roles, responsibilities, communication protocols, and recovery strategies.

**Insurance Coverage:**

• Evaluate insurance policies for comprehensive coverage of various risks.

## 4.5 Conclusion graph of supply chain management process:


**Figure 4.1 Effectiveness of Supply Chain Management Functions and Risk Management Strategies at Ispahani Agro Limited**

The graph visually represents the effectiveness of key functions and risk management strategies in Ispahani Agro Limited's supply chain management. Each bar reflects the efficiency percentage in managing various aspects of the supply chain and mitigating risks.

| **Key Functions**: | **Risk Management Strategies**: |
|---|---|
| • Production Planning (85%)<br>• Inventory Control (80%)<br>• Vendor Management (90%)<br>• Distribution Management (75%)<br>• Channel Management (70%)<br>• Payment Management (65%) | • Risk Identification and Assessment (80%)<br>• Diversification of Suppliers (85%)<br>• Technological Integration (75%)<br>• Inventory Management (80%)<br>• Logistical Flexibility (70%)<br>• Strengthening Supplier Relationships (75%)<br>• Business Continuity Planning (85%)<br>• Insurance Coverage (70%) |

This graphical representation highlights the areas where Ispahani Agro Limited excels and identifies potential areas for improvement, ensuring a comprehensive understanding of the overall supply chain management effectiveness.

# Chapter 05
# Findings, Recommendations and Conclusion

5.1. **Findings:**

**1. Inadequate Inventory Management Practices:** It was observed that Ispahani Agro Limited's current inventory management system relies heavily on manual processes, which are prone to errors and inefficiencies. This lack of automation and real-time data analytics contributes to challenges in accurately monitoring inventory levels, leading to increased risks of stock-outs or overstocking. These inefficiencies ultimately impact the company's profitability by either causing delays in meeting customer demands or tying up capital in excess inventory.

**2. Weak Supplier Relationships and Limited Collaborative Efforts:** The company's relationships with suppliers appear to be largely transactional, with limited emphasis on collaboration and mutual risk management. This lack of deeper engagement can lead to inconsistency in the quality of supplies and delays in deliveries, particularly in high-risk categories. Strengthening these relationships through long-term contracts and strategic alliances could help ensure more reliable and consistent supply chains, thereby enhancing overall operational efficiency.

**3. High Dependency on a Limited Supplier Base:** Ispahani Agro Limited's procurement process is highly dependent on a few key suppliers for critical materials. This narrow supplier base poses significant risks, as any disruption in the supply chain could lead to delays and potential production halts. The absence of a diversified supplier pool reduces the company's flexibility and increases vulnerability to supply chain disruptions, which could affect the continuity of operations.

**4. Limited Technological Integration in Supply Chain Management:** The company's supply chain management currently lacks the integration of advanced technologies such as IoT, AI, and blockchain. This gap limits the visibility and traceability of the supply chain, making it difficult to proactively identify and address potential disruptions. The absence of these technologies could result in inefficiencies, delays, and a reactive rather than proactive approach to managing the supply chain.

**5. Inefficiencies in Logistics and Distribution Networks:** The logistics and distribution networks of Ispahani Agro Limited were found to be suboptimal, with limited exploration of alternative transportation routes and insufficient partnerships with third-party logistics providers (3PLs). These inefficiencies can lead to delays in product delivery, particularly during unexpected disruptions. A lack

of flexibility in the logistics network may hinder the company's ability to meet customer demands in a timely manner, affecting overall service quality.

## 5.2. Recommendations:

### 1. Implement Advanced Inventory Management Systems:

Ispahani Agro Limited should consider investing in advanced inventory management systems that make use of real-time data analytics and automation. This will improve inventory monitoring accuracy, reduce stock-out risks, and optimize order quantities leading to better profitability.

### 2. Strengthen Supplier Relationships through Collaborative Practices:

In order to have dependable supply chains, relationships with suppliers need to be strengthened by encouraging collaboration and mutual risk management practices. Ispahani Agro Limited should think about long-term contracts and strategic alliances to guarantee consistency in quality and on-time deliveries, especially for high-risk categories.

### 3. Expand Supplier Base to Mitigate Risks:

The company needs to diversify its supplier base which is heavily reliant upon a few key suppliers. For the acquisition of critical materials, expanding the pool of suppliers both locally as well as internationally would reduce the chances of disruptions and improve flexibility in the procurement process

### 4. Technological integration can be used to improve Supply Chain visibility:

IoT, AI and blockchain are some of the advanced technologies that can boost supply chain visibility and traceability. These will enable Ispahani Agro Limited to identify and address potential disruptions proactively, thereby maintaining smooth operations while minimizing risks.

**5. Optimization in Logistics and Distribution Networks:**

The firm should consider optimizing its logistics and distribution networks through the exploration of various transportation routes alongside partnering with third-party logistics providers (3PLs). This flexibility will ensure the timely delivery of products even when there are unexpected disruptions.

## 5.3. Conclusion:

In conclusion, both supplier relationship management (SRM) and inventory management are critical to the success and profitability of Ispahani Agro Limited. SRM involves fostering positive and productive relationships with business partners by building trust, consolidating rules and expectations, and establishing limits. Effective SRM can significantly reduce costs, streamline operations, and boost customer loyalty, leading to repeated sales and improved business performance. Ispahani has excelled in this area, with high scores in supplier trust, commitment, collaboration, and business performance, indicating their strong and beneficial relationships with retailers.

On the other hand, an effective inventory management system is essential for controlling and supervising stock flow, maintaining appropriate stock levels, and optimizing profitability. Ispahani's inventory management system ensures they can meet customer demand without overstocking, reducing costs associated with holding inventories such as insurance, storage, and maintenance.

### 5.4. Reference:

**1. Ispahani Agro Limited**
https://ispahaniagro.com/

**2. Marketing Strategies Adopted by Companies in the Agro Industry to Reach the Consumers**
http://surl.li/pfeobt

**3. Does Ineffective Internal Control over Financial Reporting Affect a Firm's Operations? Evidence from Firms' InventoryManagement**
https://faculty.washington.edu/smcvay/FLMS_2015.pdf

**4. A Study on Green Supply Chain Management Practices among Large Global Corporations**
https://www.csupom.com/uploads/1/1/4/8/114895679/jscom_2012-1-13.pdf

**5. Supply Chain Management of Best Shirts Ltd.**
https://dspace.bracu.ac.bd/xmlui/bitstream/handle/10361/14952/16304116_BBA.pdf?sequence=1&isAllowed=y