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SECTOR REPORT 2022

AGRICULTURE & FOOD PROCESSING SECTOR





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Preface

Corporate India Risk Index is primarily an academic exercise to understand the level of risk that companies are facing and also assist in developing a successful risk aversion plan, CIRI is a first-of-its-kind risk measurement tool to gauge the level of a company's risk exposure and preparedness.

This Corporate risk comprises of various aspects of the business—spanning customer, competition, regulatory environment, business operations, technology finances, environmental factors etc. The impact of unprecedented events is significantly higher now.

This Index is a comprehensive framework that draws upon global risk management best practices and comprises of 32 risk elements across 6 broad dimensions. The Risk Index is based on the principles of Lean and Six Sigma that qualify business processes by measuring effectiveness and efficiency.

ICICI Lombard's Corporate India Risk Index provides a crucial tool for assessing and addressing risks, fostering resilience and adaptability in the ever-evolving global landscape. In the current climate of increasing macroeconomic uncertainties, it is essential for corporates to prioritize robust risk management. We believe that a proactive approach to risk management not only fortifies individual businesses but also contributes significantly to India's overall economic growth and stability.

Executive Summary

India has a diverse agriculture sector, with a wide range of crops grown across different regions of the country. Due to a diverse range of agro-climatic conditions and soil types, it is suitable for a wide variety of crops. The major crops grown in India include rice, wheat, maize, pulses, oilseeds, sugarcane, cotton, jute, tea, and coffee. The agriculture sector in India is expected to generate better momentum in the next few years due to increased investment in agricultural infrastructure such as irrigation facilities, warehousing and cold storage.

The agriculture sector in India faced various risks in 2022 due to several factors such as climate change, water scarcity, pest infestations, and uncertainties in global markets. Climate change and its impact on weather patterns also affected crop yields and quality. Water scarcity and uneven distribution of water resources also impacted crop production. Pests and diseases led to crop losses and impact the livelihoods of farmers. Moreover, the pandemic has affected the supply chain and disrupted the market, leading to uncertainties and price volatility. This report encompasses the elements of risk exposure, risk management, and risk index for the agriculture sector in India.

The overall risk exposure has increased significantly while the risk management has gone down which reflects the turmoil in the agriculture sector. Due to risk factors like inflation, exchange rates, supply chain disruption in post-covid era severely impacted the sector. However, the regulatory risk and challenges at the global level also proved to be one of the biggest impediments in the growth of the sector. The Indian government's initiatives and policies are aimed at addressing these challenges and promoting sustainable growth in the sector.

Introduction

ICICI Lombard Corporate India Risk Index is a one of its kind, unified, credible, standardized corporate Risk Index that spans over the country level, the industry level, and the company level. The index has a comprehensive sector coverage.

Aerospace and Defense, Agriculture and Food Processing, Automotive and Ancillary, BFSI, Biotech & Life sciences, Chemicals and Petrochemicals, Education Skill Development, Energy, FMCG, Healthcare Delivery, Infra and Realty, IT/ITES, Manufacturing, Media and Gaming, Metals and Mining, New Age & Startup, Pharmaceuticals, Telecom and Communication Technology, Tourism and Hospitality, Transportation and Logistics.



The impact is identified across key business risk (internal and external) under the following ‘Strategic Risk Areas’, The ICICI Lombard Corporate India Risk Index Framework comprises of 32 risk elements across 6 broad dimensions.



Market and Economic Risk

Corporate Risks arising due to market and economy related factors, such as internal or external political uncertainty, global slowdown, taxation-regulatory changes etc. Market and economy related risks are also identified as ‘Systematic Risks’, we have further classified the risks into below mentioned categories.

- **Inflation:** Inflation is the general increase in prices within the economy. The rising prices for businesses could result in bigger production spending and a fall in profitability. The companies should be attentive, acute, and responsive to changes in inflation to efficiently manage the prices of final products.
- **Taxation:** In a large democracy like India, complexity of multiple taxes (multiple taxes like GST, custom duties, central excise duty, etc.) is a major concern. The changing legislations, increased scrutiny by tax authorities and increasing public attention are together resulting in tax risks for organizations. There is, thus an increasing urgency for firms to manage their tax affairs efficiently to minimize tax risks.
- **Regulatory Risks:** Regulatory risk is the risk of changes in regulations and laws that might affect an industry or businesses. The regulatory changes can pertain to tariffs and trade policies, business laws pertaining to employment, minimum wage laws, financial regulation, Foreign Direct Investment etc.

- **Foreign Exchange Risk:** The exchange rate plays an important role for firms who export goods and import raw materials. The fluctuations in foreign exchange will have great impacts on the prices of traded goods. For example, if the currency depreciates (devaluation), the exporting firms will benefit. However, the firms importing raw materials will face higher costs on imports. The firms need to hedge their exposure to foreign exchange risks to insulate themselves from the impact from forex changes.
- **Geo-political Tension:** Geopolitical risk means the political and economic risks that are a potential threat to the financial and operational stability of companies.
- **Competitive risk:** Competitive risk is the risk associated with the fact that there are multiple companies competing in the market, each seeking to obtain the highest position and consumer ratings, to gain maximum benefits for themselves. The companies devise different strategies to garner a higher market share and acquire customers from competitors. Any failure in managing the competitive stand could lead to losses in business, thereby making marketing and competition a major risk in market.



Technology Risk

Technology risks are also identified as information technology related risks which may arise due to failure of any installed hardware or software system, spam, viruses or any malicious attack. Also delay/over/under adoption of trending disruptive technologies can lead to technology related risks. We have classified the risks in below mentioned categories.

- **Innovation Risk / Obsolete Technology:** Innovation is the key to success in all the industries. Risk of redundancy and losing out to competition on account of poor R&D is a major concern.
- **Intellectual Property risk:** Dependence on trade secrets and unpatented proprietary know-how.
- **Disruptive Technologies:** These will fundamentally alter the financial prospects of the industry.

Data Compromise: Hardware failure refers to malfunctions within the electronic circuits or electromechanical components (disks, tapes) of a computer system; Software failure refers to an operating system crash. Such failures lead to stoppage of entire computer or operating systems creating substantial losses to business.



Operational and Physical Risk

Risk of losses caused due to faulty or failed processes, systems or human resource related inefficiencies are classified as operational and physical risks. We have classified Operational & Physical risks in below mentioned categories.

- **Critical Infrastructure Failure / Machine Breakdown:** Industries with a heavy dependence on machinery consider any rise in machinery breakdowns a hindrance to their businesses operations. An untimely equipment breakdown can bring businesses to a standstill or be the root cause for fires and explosions. Mostly, human errors and deferred maintenances are the major reasons for such breakdowns. The companies should actively invest in timely maintenance of all machineries.
- **Business Continuity / Sustainability:** Non adoption of Business Continuity/ Sustainability Plans and Lack of Internal Control tools would result in: Failure of businesses, Brand Equity / Loss of reputation, Financial Loss, Business model Failure, Ineffective engagement/communication with stakeholders, Losses in productivity, Lack of opportunity monitoring.
- **Supply chain risk:** Raw Material unavailability and Heavy Dependence on Global Supply Chains / Supplier concentration risk. Unavailability of raw materials owing to disruption in the supply chain or heavy dependency on one source (company/country) which is unable to supply owing to some geopolitical tensions, fires, or any other incidents. Transportation is one of the key activities for companies making it an important risk to mitigate. The loss of goods in transit and spillage is one of the major concerns as it accounts for a sizeable loss of revenue to companies.
- **Commodity Price Risk - Volatility in prices of raw materials:** The fluctuations in raw material prices creating a margin pressure / top-line pressure in the scenario of rising input costs.
- **Portfolio Risk:** Loss of key customers, Customer concentration - Key customers accounting for a larger share of revenue, Over-dependence on suppliers, Business Model Risk: Transformative changes in business model, Tail Risks: Ability to overcome or manage extreme worst-case scenarios.
- **Environmental Hazard Risk:** Any environmental hazard having the potential to affect the surrounding environment.
- **Workplace Accident:** Fire and Explosion Hazards, Containment Incidents, Workplace Injuries
- **Human Resource:** Key person risk: This risk occurs when a business or business unit becomes heavily reliant on a key individual. Talent acquisition and retention - The companies require a highly skilled labor force for R&D as well as continuous production. Accessing skilled resources and expertise on an on-going basis is one of the major challenges; moreover, retention of trained staff is imperative. Labor shortages, Union Strikes & Industrial Actions, Employee health, safety, and security (SHE/Sustainability risk).
- **Financial Risk:** Financial Reporting Risk: Material misstatement of Financial Statements, whether due to fraud or error. Interest rates and equity prices: Interest rate risk arising out of working capital borrowings at variable rates. Equity price fluctuations affect the Company's income or the value of its holdings of financial instruments. Liquidity Risk (Credit Risk / Receivables).
- **Breaches of law (local/ international):** Voluntary/ involuntary breaches of law can lead to costly lawsuits.



Crime & Security Risk

Cybersecurity risks relate to the loss of confidentiality, integrity, or availability of information, data, or information (or control) systems and reflect the potential adverse impacts to organizational operations. These attacks can cause major financial losses, reputational harm, and a loss of client trust. Regarding cybersecurity, the BFSI industry in India has several difficulties, including difficult-to-secure legacy systems, a shortage of qualified cybersecurity personnel, and the requirement for ongoing system and network monitoring. There is a significant investment in cybersecurity tools like network monitoring, endpoint security, access control, and threat intelligence. Many organizations are also implementing cutting-edge technology like artificial intelligence and machine learning to strengthen their security posture. Around 7.4% of the attacks in the Asian region were targeted at India in 2022.

We have classified Crime & Security risks in below mentioned categories.

- **Cyber Crimes:** Data Theft, Spam, scams and phishing, Hacking, Malwares and Viruses, Piracy, Fraud, Corruption, Malicious attacks
- **Counterfeiting:** Counterfeiting of goods/services leads to loss of revenues, profits and ultimately affects the brand equity
- Threat to Women Security
- **Terrorism:** Un-lawful use of violence and intimidation, especially against civilians, in the pursuit of political aims.



Natural Hazard Risk

A natural hazard is the threat of an event that will likely have a negative impact. A natural disaster is the negative impact following an actual occurrence of natural hazard if it significantly harms a community. Due to India's geographical structure, it is one of the most disaster-prone countries in the world. Natural hazards like floods, earthquakes, landslides, and cyclones are common risks faced by India. The situation has worsened due to rise in GHG emissions, loss of biodiversity, deforestation, and degradation of environment. From Surat Gas leak to landslides in the north and cyclones in Bay of Bengal, the year 2022 was no exception. Such natural disasters hamper the day-to-day operations of corporates, and it is important for them to understand that such risks cannot go unheeded. Over the years, Indian corporates have learnt to mitigate such risks by diversifying their supply chains, having multiple logistics partners, diversified geographical presence and multiple vendors.

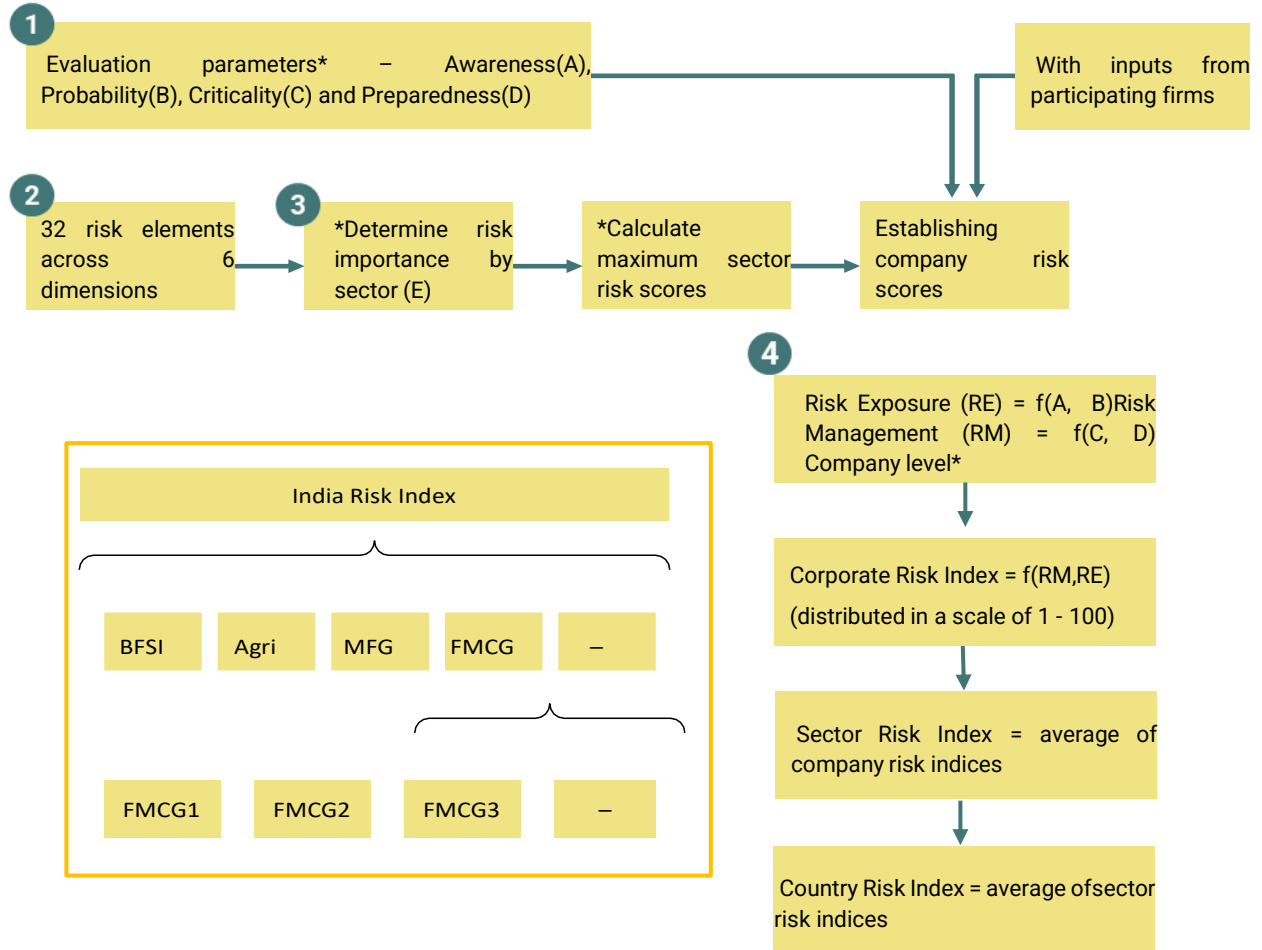
- **Pandemic and other global epidemic diseases:** Risk to business owing to disruptions caused by COVID-19 pandemic and similar another global epidemic.



Strategic risk

- Strategic risk is the risk that failed business decisions may pose to a company. Strategic risk is often a major factor in determining a company's worth, particularly observable if the company experiences a sharp decline in a short period of time. Several factors, such as unethical or unlawful activities, poor customer service, product recalls, data breaches, or unfavorable media coverage, can lead to strategic risk. An organization's reputation can be severely harmed by a single negative incident, such as a high-profile data breach or fraud scandal, resulting in a loss of clients, income, and market share.
- **Resource scarcity / Misutilization / Overall Utilization:** Difficulties in acquisition of land, water, fuel, or other resources for operations of business.
- **Public Sentiment:** Current events playing out in the public scene can change the public sentiment.
- **Delay in execution of projects:** Delays in execution of projects can surge in the capex.
- **Increased number of recalls and quality audits:** Impacts both the brand equity and increased operational expenses.
- **Failed / Hostile Mergers & Acquisitions:** High dependence on inorganic growth.

Bottom-Up Risk Assessment Approach



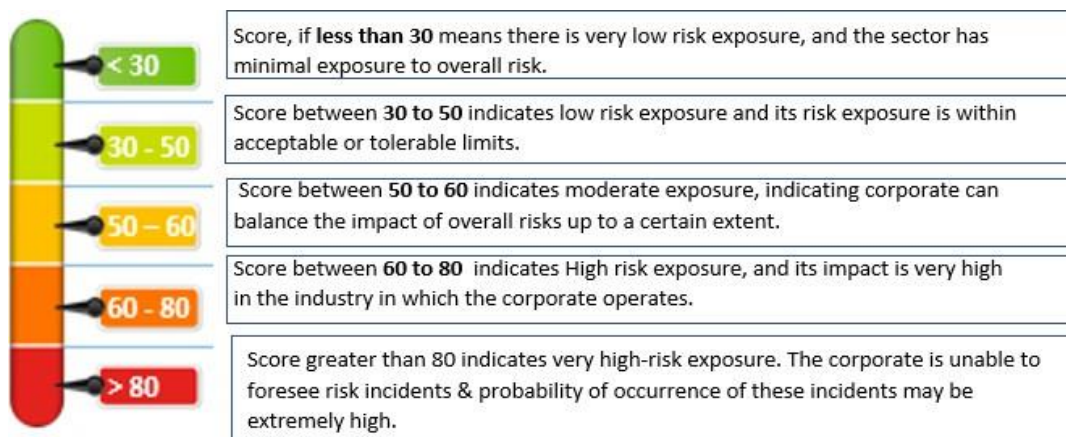
- 1. Evaluation Parameters*:** The index maps the risks faced by any enterprise basis of Awareness, Probability, Criticality and Preparedness against the defined Risk elements. The evaluation Parameters are defined as: Awareness - Level of awareness of potential risk affecting the firm. - Likelihood of risk to affect the business goals of the firm adversely. Criticality - Level of impact of the identified risk on the success of business goals. Preparedness - Risk handling practices/ mechanisms already in place to handle the risk.
- 2. Determining Risk Importance*:** Importance/Impact of individual risk element is established against individual sector based on the published corporate risk reports, in depth sector understanding by F&S team and SMEs.
- 3. Calculating Maximum Sector Risk Score:** Weighted Sum of all risk elements based on their importance to the respective sector.
- 4. Company Level*:** All the Risk Index scores for companies in a sector are averaged to represent the sector; and sectors average to India. Risk Exposure is defined as the function of corporate's Risk Awareness and Probability of risk occurrence. Risk Management is defined as the function of an enterprise risk preparedness and criticality risk impact assessment.

Defining the Risk Scale

We have selected 20 sectors to understand the current stand of our country today in terms of risk. Risk for various sectors is measured on the risk exposure scale and risk management scale.

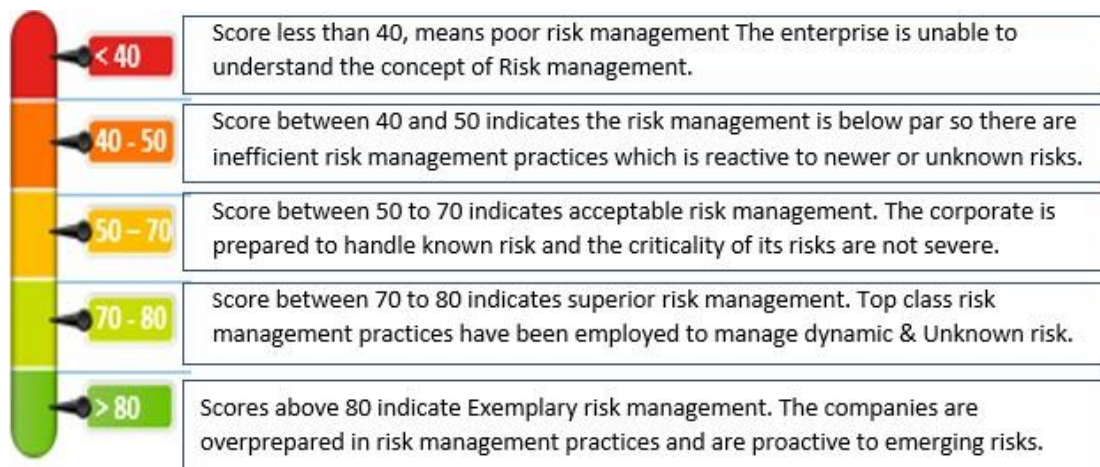
A. ICICI Lombard Corporate Risk Exposure – Scale

Risk Exposure: The impact of any internal, external or strategic occurrence on the financial performance of an organization is defined as the corporate risk exposure. Risk has traditionally been seen as something to be avoided – with the belief that if behavior is risky, it’s not something a business should pursue. But the very nature of business is to take risks to attain growth. Risk can be a creator of value and can play a unique role in driving business performance. Let’s look at the risk exposure scale.



B. ICICI Lombard Corporate Risk Management – Scale

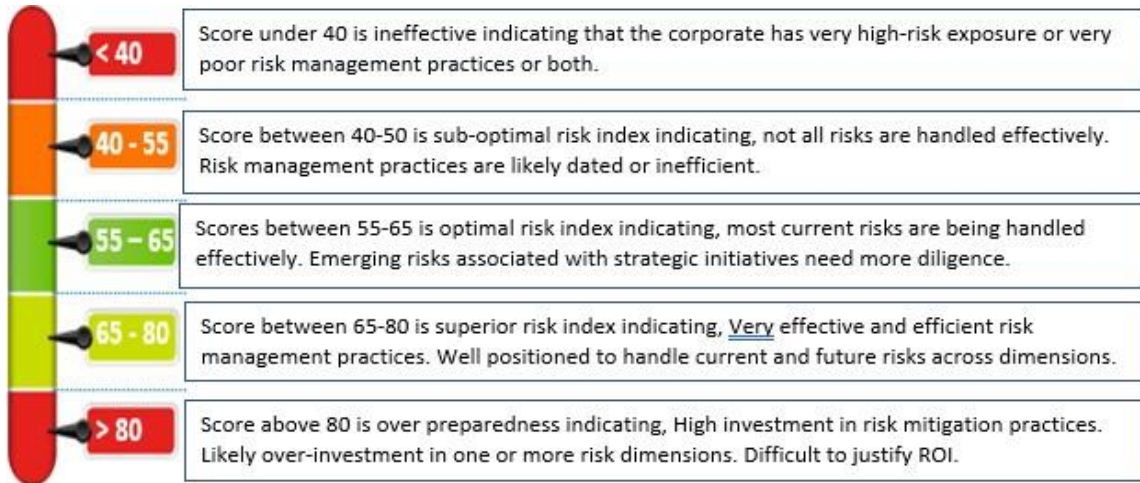
Risk Management: Identification, Evaluation and Prioritization of corporate risks followed by well-coordinated steps to minimize the occurrence of uncertainties in the foreseeable future is defined as the Corporate Risk Management. The risk management scale works in the opposite to that of the risk exposure scale. Let’s look at the risk management scale.



C. ICICI Lombard Corporate Risk Index – Scale

Risk Index: Risk Index is a measurement tool to gauge the level of Risk Exposure against Risk Preparedness. The score intends to give companies/Sector/Country access to an extensive and quantifiable metrics of risk management.

Let’s look at the risk Index scale.



India - Emerging Superpower with Optimized Corporate Risk Handling

Manufacturing sector contribution to India’s GDP in 2022 stands at 17% and is expected to grow to 25% by 2025, the expected growth is attributed to various favorable schemes initiated by Government of India like ‘Make in India’, ‘Digital India’, Improved Road Infrastructure, implementation of modern technologies of manufacturing resulting in optimized and effective production, Also the pandemic has made business realize that they cannot just rely on a single manufacturing hub; hence notion of “China+1” is making the world realize the significance of India. China is in a trade war with the USA, which is positively shaping the role India will play in the global arena.

The below chart showcases the gradual increase in India’s manufacturing exports.

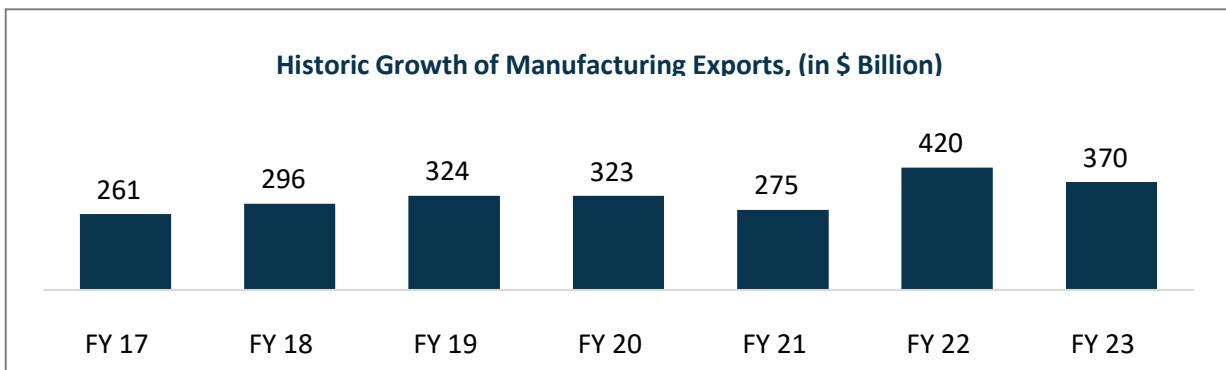


Figure 1: India’s Growth of manufacturing exports. (Source: Redseer)

Indian manufacturing sector is also focusing on electronics manufacturing like mobile phones, industrial electronics consumer electronics, etc. due to government initiatives the production has doubled since 2015.

Aerospace and defense sector in India have evolved significantly, Govt. of India have identified A&D as area of focus due to the belligerent neighborhood, steps like Make in India (Atmanirbhar Bharat) is helping the overall defense sector, however India still remains the largest importer of arms and ammunition, favorable policies and ease in regulations is helping the drone industry in India and many new start-ups and big players are entering in this space.

Urbanization is another phenomenon evolving in India and it is estimated that by 2030 more than 400 million people will be living in cities, due to this megatrend huge push towards realty and infra sector is observed which is also the growth of ancillary industries like metals, cement, water availability, sanitation, mobility etc., the government along with the private sector is working on multiple initiatives to manage the huge inflow.

India has observed a steady adoption towards EVs in recent years, though India adoption still remains very low in comparison to Europe, Canada, China, however all big auto players are coming with new lines of EVs, and significant strategic investment have been made. The adoption is primarily due to lower running

costs, lower maintenance, zero tailpipe emissions, tax and financial benefits by the government, convenience of charging.

BFSI sector in India is showcasing a significant robustness in the time of global crisis, there is a growing demand for financial services as there is a gradual rise in income across income brackets, with a rapid increase in mobile penetration and internet availability more than 2100 fintech companies have emerged in India, the traditional banks are also adopting the digital technologies at a required pace, investment on making the systems secured from cyber threats is utmost priority. Policy support by the government in the union budget 2021-22 is taking up shape and is helping the BFSI sector in 2022 and coming years, like government approval of 100% FDI for insurance intermediaries have increased the FDI limit to 74% from 49%.

Healthcare sector is also continuously growing healthcare has become the one of the India's largest employers, employing around 4.7 million people, though in 2021-22 India only spends 2.1% of its GDP in healthcare, in the union budget 2022-23, US\$ 11.28 billion was allocated to the Ministry of Health and Family Welfare (MoHFW). there is still huge room for improvement in the overall healthcare system in India. Efforts towards having well trained medical professionals in India is top priority. There were exemplary development in the vaccine manufacturing by India, Bharat Biotech Covaxin and Oxford AstraZeneca's Covishield manufactured by SII, helped India get a protection shield against Covid. There is a plan by the government of India to infuse US \$ 6 billion to boost the healthcare infrastructure in India.

The IT/ITes sector is a key engine for fueling India's economic growth and contributing to 7.5% of India's GDP in 2021-22, the Big four IT firms in India have recruited over 1 million employees, As the world is moving towards era of digital economy Indian IT-sector will be contributing significantly towards this journey, the rollout of 5G communication technologies and adoption of new age technologies across industries; like AI, Robotics, Internet of Things will further increase the size of Indian IT sector.

Indian enterprises are also concerned about the risks emerging out of the growing economy and the globalization India is heading towards, its observed that Indian enterprises are taking significant steps towards risk management and keeping budget allocated to implement best in class risk mitigation practices.

India Showcasing an Optimized Risk Handling



Figure 2: Corporate India Risk Index 2022

Corporate Risk Index Score of 63 implies that Indian enterprises are handling the risk in an optimal way but still there is scope of improvement to get into superior risk handling territory, Indian enterprises have a well-defined risk management practice in place for inherent risks, however risk management can be improved further as a potential buffer against potential risk events arising from market & economy, operational and technology related Risk events, openness towards adoption of technology and having a well-defined risk management team was observed across enterprises in India.

Sectorial categorization across above stated five categories, it was found that risk management is getting a paramount importance in the growth strategy of every organization and all the organization fell either into 'Superior Risk Management' or 'Optimal Risk Management' category.

From a risk exposure front the intensity of impact due to market and economy related risks increased due to the heightened inflation, global recession, and geopolitical tensions though from a regulation point the sector specific policies by the government helped the industries. Some of the inherent risks exposure due to the operational aspect did not see a significant change as compared to previous year, however companies are adopting diversification, technologically enabling the supply chain, and creating better hedging against financial related risks, whose results will be seen in coming years.

Below is a broader categorization of sectors in terms of risk index:

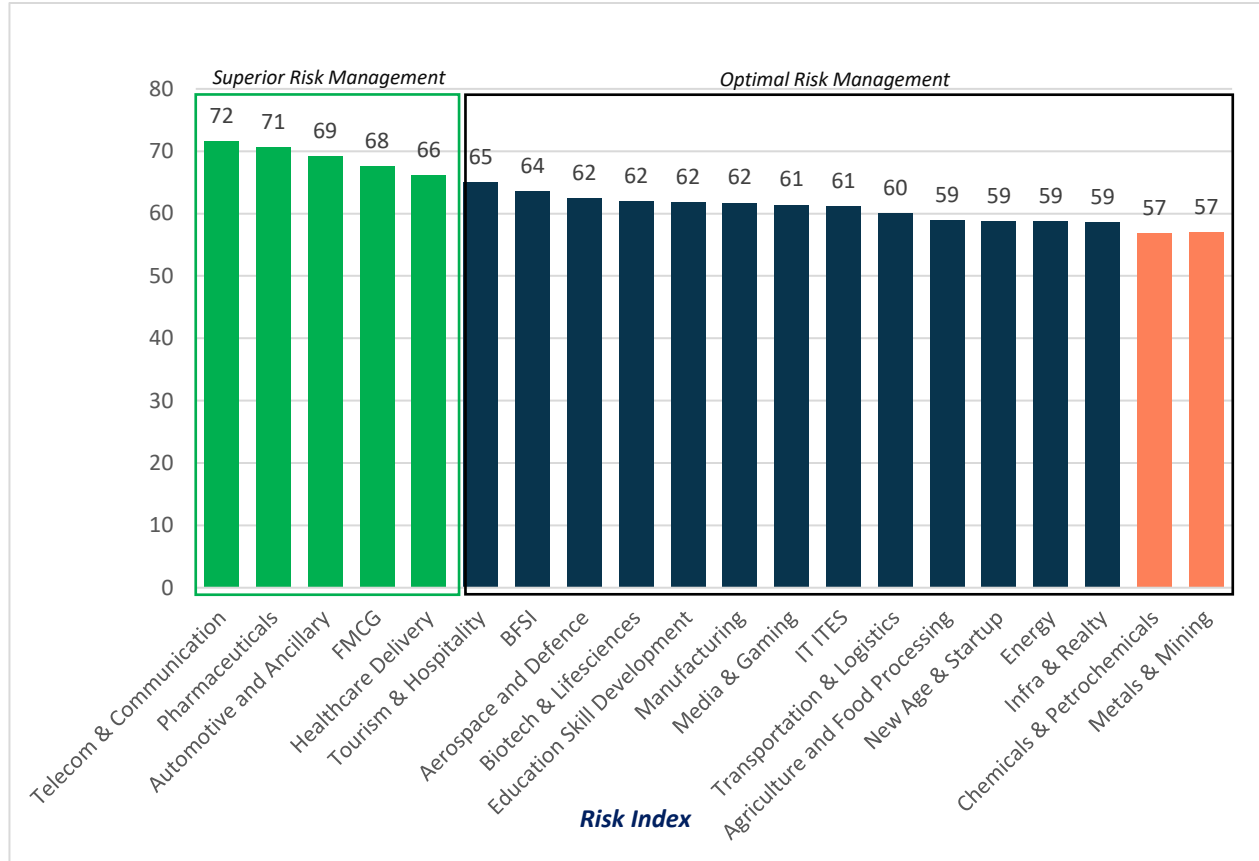


Figure 3: Corporate India Risk Index 2022 Sector Score

Superior Risk Index

Superior risk handling was found in five industrial sectors: Telecom & Communication, Pharmaceuticals, Automotive & Ancillary, FMCG, Healthcare Delivery.

Optimal Risk Index

Optimal risk handling was found in 15 industrial sectors: Tourism & Hospitality, BFSI, Aerospace & Defence, Biotech & Lifesciences, Education Skill Development, Manufacturing, Media and Gaming, IT & ITES, Transportation & Logistics, Agriculture and Food Processing, New Age & Startup, Energy, Infrastructure & Realty, Chemicals & Petrochemicals, Metals & Mining.

Agriculture & Food Processing Sector

Insights 2022

The Indian agriculture sector that employs around 58% of the population and contributing almost 17% in the GDP, warrants its performance to be critically important for the employment and growth opportunities in the country. On the one hand, where the world is struggling to meet the rising demand for food, the challenges posed by Covid -19, climate change and geo-political conflicts have further aggravated the livelihood of the farmers across the different parts of the globe.

The factors that drive the agriculture production in India entails – rainfall due to south-western and north-eastern monsoon; availability of seeds, fertilizers and pesticides; supporting infrastructure i.e., credit, marketing, irrigation, power etc.; and the regulatory mechanisms of the government that facilitates the optimal procurement facilities through the minimum support price and the other subsidy schemes. The scale of produce is also prone to certain risks that stem from these factors of production.

Geographically, the climate, the rainfall, the soil, and the sunlight play a defining role in the agriculture production. Although the rainfall due to south-west monsoon in 2022 was above normal but its uneven distribution had an adverse effect on the kharif crops. However, the delayed withdrawal of monsoon led to the higher reservoirs level and better soil condition. The early heat wave during the harvest season of wheat had also adversely affected the production.

Due to the lockdown post the outbreak of covid, there was a disruption in supply chain due to delayed shipments in the overseas region, increased cost of transportation channels etc. This refrained the farmer's access to market and credit facilities but the favorable monsoon and reverse migration of labor bolstered the agriculture production in India.

The occurrence of heat waves during the harvest season of kharif crop and the geo-political conflict has led to the soaring prices of wheat in the market. The head waves lead to the reduced yield of several crops and also the conditions of drought like condition.

The fluctuation in the value of India currency in the foreign market immensely impacts the Import-Export competitiveness of Indian Products globally. The exchange rates can also discourage the investment in this sector which caters to the increase in the prices of imports like fertilizers, pesticides, machines etc. This can result into the increased input cost of the products which will further lead to lower income of the farmers which is not favorable to the economy.

The technological advancement in every sphere of agriculture is critical to impact the sector negatively if not anchored fairly well. To meet the demand at the global scale there has been the abundant prevalence of genetically modified crops, use of farm mechanization, hi-tech drones are very likely to affect the farmers' life negatively.

The volatility in the political landscape of India in terms of agriculture policies like subsidies, minimum support prices, infrastructure development, land reforms, taxation, etc. can cause severe repercussion for the entire sector. Thus, the account of government policy with timely readiness needs to be taken care of to tackle any unforeseen certainty that can cripple the lives of farmers.

Government of India has rolled up several initiatives for the welfare of the farmers in the recent past. These initiatives are taken with the motive of providing certainty against several risks, increasing their profitability and ensuring the optimal price for the produce of their crops. These initiatives include Soil Health Card Scheme, Neem Coated Urea, Paramparagat Krishi Vikas Yojana (PKVY), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), National Agriculture Market (e-NAM), Pradhan Mantri Fasal Bima Yojana (PMFBY) and Interest Subvention Scheme.

Although, the Covid has immensely affected the agriculture sector but its impact could largely be seen in the kharif crops as the Rabi crops were least affected as they were on the verge of completion but the allied sectors like poultry, fisheries etc. saw a drastic fall in the demand due to rumors which led to the huge decline in production. The risks in the different factors of production are always going to be a major challenge thus advance readiness is extremely required to tackle any unforeseen threats.

Agriculture & Food Processing Sector Risk Index 2022 Vs 2021

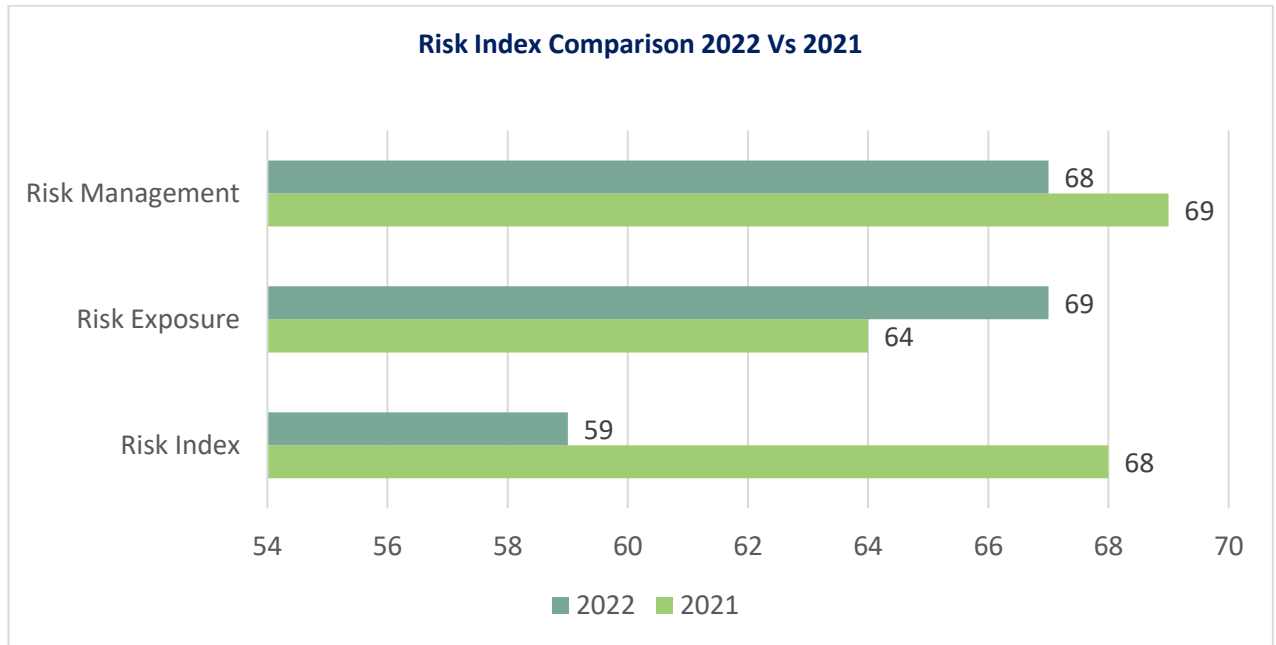


Figure 4: Detailed Comparative Analysis 2021 Vs. 2022

Agriculture and Food Processing Sector Risk Index 2022 Vs 2021

The overall risk index for agriculture sector has improved significantly from 68 in 2021 to 59 in 2022. The major reason for this must be attributed to the outbreak of COVID-19. There has been extremely unfavorable condition for agriculture sector in 2021 due to Market, Economic and operational risks. On contrary to that, the market & economic risk and operational risks improved to 59 & 62 in 2022 against 73 & 73 in 2021 respectively.

The operational risks such as supply chain disruption has crippled the agriculture sector post-covid in 2021 but as the situation got normalized and the markets reopened, there was comparatively better growth was seen. The natural hazards affected the agriculture sector in india severely in 2022 than 2021 as there wasn't the optimal rainfall in some parts of the country and the heat waves during the season of kharif crops also led to decline in the production of crops.

Agriculture and Food Processing sector Risk Management 2022 Vs 2021

There hasn't been any improvement in the agriculture sector Risk Management, however it slightly even fell down to 67 in 2022 than 69 in 2021. In 2021, India experienced several challenges in the agriculture sector, including locust attacks, floods, and supply chain disruptions due to the COVID-19 pandemic. These challenges highlight the importance of effective risk management strategies in agriculture.

In 2022, the agriculture sector in India faced a variety of risks and uncertainties, depending on factors such as weather patterns, government policies, global market conditions, and the ongoing COVID-19 pandemic. Also due to uneven distribution of rainfall, heat waves during kharif season, supply chain disruptions led to the decline in production.

Agriculture and Food Processing Sector Risk Exposure 2022 Vs 2021

Agriculture sector Risk Exposure went up due to erratic monsoon, climate change, supply chain disruption, and constant fluctuation in the exchange rate of Indian rupee. The Risk Exposure went up to 67 than 64 in 2021. The sustained effects of Covid-19 accounted for the major increase in the risk exposure due to financial risks, uncertain natural growth processes of crops and livestock, geo-political tensions due to Russia – Ukraine conflict, government policies and heat waves during the kharif crops season.

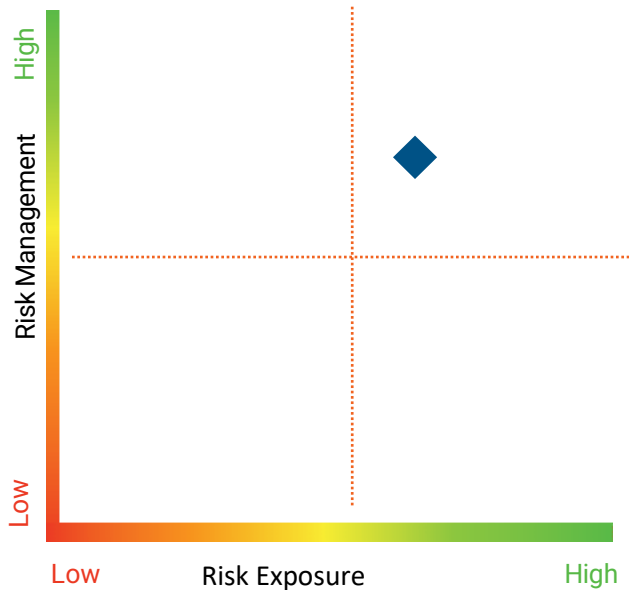
Key Highlights



Risk Dimension Analysis: Market and Economy

Risk Exposure Score: 72

Risk Management Score: 68



Inflation

- The Food Inflation in India increased to 5.89% & 5.76% in December, 2022 compared to 2.99% & 3.17% respectively during the corresponding month of the previous year.
- This increase was majorly due to the rise in prices of medicine, barber charges, bus fare, etc.
- The crops that witnessed the sharp increase in the prices were wheat-atta, jowar, bajra, maize, fish fresh, chilies dry, firewood, etc.

Taxation

- The cross-border transportation was a major challenge in the agriculture sector in India but the uniformity in tax structure has resolved the issue. But the warehouse leasing by the storage agency and cold-storage infrastructure cost increases the cost of the produce immensely which ultimately farmers have to bear.
- The taxation poses several risks to the agriculture companies as it is interlinked with other sectors such as machinery, supplies, manufacturing etc. This brings great volatility in the cost of production every year.

Regulatory Risks

- The government's action immensely impacts the agriculture sector. Two major verticals are Subsidy & Research and development. The subsidy for fertilizers increased to 5% in 2022 than 4% in the previous year. Although, Urea accounts for the major share in the subsidy, non-Urea fertilizers also have seen the increase in subsidy.

- The National Food Security Mission- Oilseeds & Oil Palm (NFSM-OS&OP) is being implemented in 28 states and union territories during 2022-23 to increase the production and productivity of nine oilseed crops including sunflower and to reduce the import burden in the country.

Foreign Exchange Rates

- Due to cross-border trade, the exchange rate is a major risk factor. India is an importer of fertilizers, pesticides and several crops from different countries.
- The exchange rate of currency is an important determinant for the investors. Thus, the invariable fluctuations lead to decrease in investment affecting the agriculture sector badly.

Geopolitical Risks

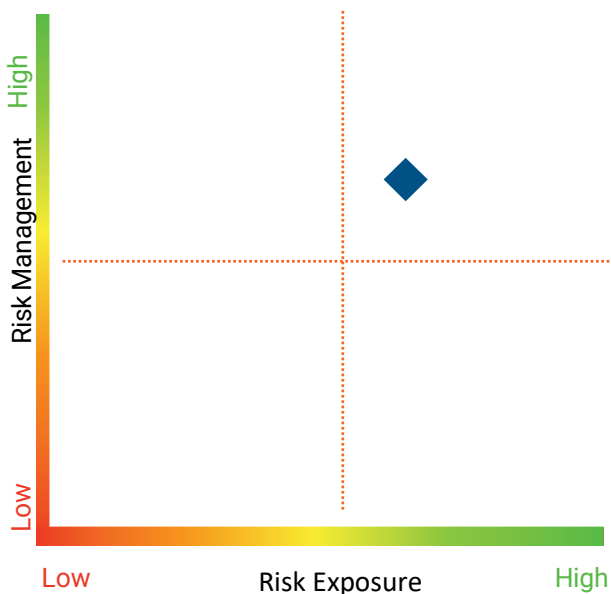
- During Russia – Ukraine conflict, the prices of food grains and fertilizers were rising everywhere. There were sanctions which led to loosing market opportunities for the exporters.
- As agriculture has 16% contribution in the GDP of India, with India being an exporter of several crops, the geo-political tension is a major risk element which always requires a due consideration.



Risk Dimension Analysis: Technology

Risk Exposure Score: 69

Risk Management Score: 68



Innovation Risk

- Though, the feasibility is a big challenge since 86% farmers are very small and marginal, thus implementation needs to be done at a cluster level for enhanced monitoring.
- The global advancement in technology mandates the innovation in agricultural sector in India. The use of farm mechanization, uses of drones, hi-tech hubs etc. have increased significantly thus it has essentially become the need of the hour for India to focus on innovation to match the similar scale.

Disruptive Technology

- The adoption of digital technologies such as precision agriculture, IoT devices, and drones has helped Indian farmers improve productivity and efficiency. For instance, precision agriculture techniques such as soil testing and nutrient management have led to a 20-30% increase in crop yields in some areas.
- However, the digital divide remains challenging in rural areas with limited technology and Internet access. Around 74% of rural households in India do not have access to the Internet, according to a report by the Telecom Regulatory Authority of India.

Intellectual property:

- Intellectual property protection is crucial for fostering innovation in the Indian agriculture sector. However, there have been concerns about the lack of effective protection for plant breeders' rights, which can hinder the development of new plant varieties.
- In 2021, there were reports of farmers in India being sued for using seeds from their own crops due to alleged patent violations by multinational seed companies. This has raised concerns about the impact of intellectual property laws on smallholder farmers.

Data compromise:

- The use of digital technologies in Indian agriculture has also raised concerns about data privacy and security. Farmers' personal and financial data can be vulnerable to breaches and cyber-attacks.
- In 2021, there were reports of a data breach at a major agri-tech company in India, exposing millions of farmers' personal information. This has raised concerns about the need for stronger data protection regulations in the sector.

Counterfeiting:

- Counterfeit agricultural inputs such as seeds and pesticides can have serious economic and environmental consequences for Indian farmers. According to a report by the Indian Council of Food and Agriculture, the use of counterfeit pesticides can result in crop losses of up to 30%.
- In 2021, there were reports of a major seizure of counterfeit pesticides in India, which were being sold under the brand names of major agrochemical companies. This highlights the need for stronger enforcement measures to tackle the issue.

R&D/innovation failure:

- The lack of investment in R&D and innovation in the Indian agriculture sector can hinder its long-term growth and competitiveness. According to a report by the National Bank for Agriculture and Rural Development, India's public investment in agricultural R&D is only around 0.35% of the agricultural GDP, compared to 2-3% in developed countries.
- In 2021, there were reports of low adoption rates for new agricultural technologies in some areas of India due to factors such as lack of awareness, access, and affordability. This highlights the need for greater investment in R&D and innovation tailored to smallholder farmers' needs.

Infringement/violation:

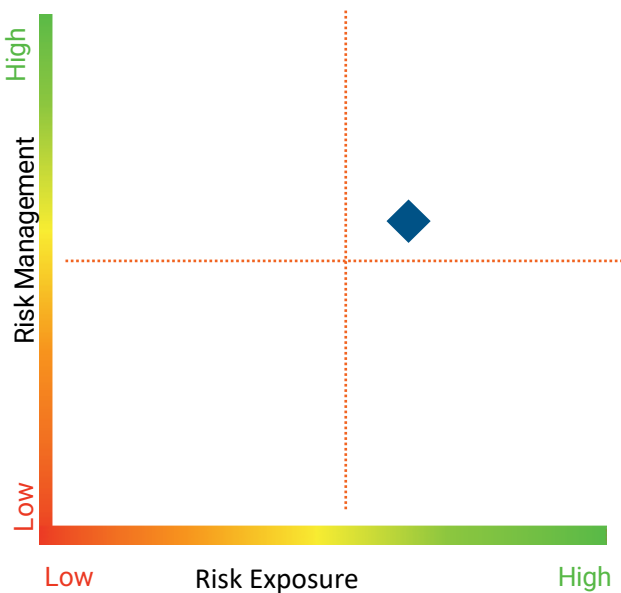
- Infringement and violation of regulations can have serious economic and environmental consequences for Indian agriculture. For instance, illegal mining and quarrying can cause soil erosion and depletion of natural resources, which can affect crop yields and livelihoods.
- In 2021, there were reports of the illegal sale and use of unapproved genetically modified (GM) seeds in India, which can pose risks to human health and the environment. The sale and cultivation of GM crops without approval is illegal in India, but enforcement has been weak. This highlights the need for stronger regulations and enforcement measures to prevent infringement and ensure compliance with regulations.



Risk Dimension Analysis: Operational and Physical

Risk Exposure Score: 67

Risk Management Score: 65



Supply Chain Risk

- In the era of globalization with overseas trade, inter-state transportation, the supply chain plays a vital role. Thus, any obstruction in supply chain results in overall loss in terms of production and operations.
- During covid, supply chain got disrupted as there was a huge delay in the shipment of goods overseas, resulting in the increased cost of production.

Environmental Risk

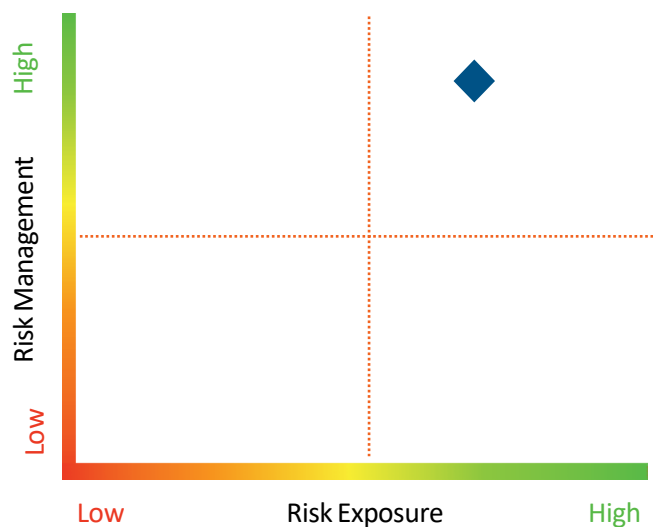
- The climate change severely affects the crops yield, nutritional value due to erratic monsoons, heat waves, flooding etc.
- As the rainfall is the main source of irrigation in India, the irregularity in monsoon and quality of soil becomes a major concern.



Risk Dimension Analysis: Crime and Security

Risk Exposure Score: 70

Risk Management Score: 68



Cyber-crimes

- **Phishing attacks:** In recent years, there has been an increase in phishing attacks targeting farmers in India. Several farmers reported receiving fake messages and emails that appeared to be from government agencies or financial institutions, asking for their personal information. These attacks can lead to financial losses and data breaches, affecting the farmers' ability to carry out their agricultural activities.

- **Ransomware attacks:** Ransomware attacks are a growing concern for businesses, including those in the agriculture sector. An Indian agrochemical company was hit by a ransomware attack that disrupted its operations for several weeks. The attack led to a loss of revenue and delayed the company's ability to supply products to its customers.

Harassment/Bribing

- **Harassment of women farmers:** Women farmers in India face several challenges, including harassment and discrimination. A survey conducted by a non-governmental organization revealed that over 70% of women farmers in India face harassment and abuse from male members of their families and communities. This harassment can prevent women from accessing resources and participating in decision-making processes related to agriculture.
- **Bribing of government officials:** Corruption is a significant problem in India, and the agriculture sector is not immune to it. The police arrested several government officials for accepting bribes from pesticide manufacturers in exchange for approving their products. This bribery can lead to the approval of unsafe or ineffective products, affecting the health of farmers and the quality of their crops.

Counterfeiting:

- **Seed counterfeiting:** Counterfeit seeds are a major problem in India, with several cases reported yearly. The police in Maharashtra seized over 6,000 packets of fake cotton seeds, which were being

sold to farmers. These fake seeds can lead to crop failure and financial losses for the farmers.

- Fertilizer counterfeiting: Counterfeit fertilizers are also a concern in India, with several cases of fake fertilizers being sold to farmers every year. The police in Andhra Pradesh busted a racket selling fake fertilizers, which were being sold to farmers at exorbitant prices. These fake fertilizers can harm the crops and reduce their yield, affecting the farmers' income.

Executive threat/Impersonation:

- There have been cases of fraudsters impersonating government officials or representatives of agricultural organizations to scam farmers. In a recent incident, a group of fraudsters impersonated officials from the Ministry of Agriculture and Farmers Welfare. It lured farmers to deposit money for getting loans under the Kisan Credit Card scheme.
- Threats to executives or officials involved in the agricultural sector have also been reported, particularly in cases where they take action against illegal activities. A group of people threatened an agricultural officer in Haryana for trying to stop illegal mining in the area.

Physical violence/abuse:

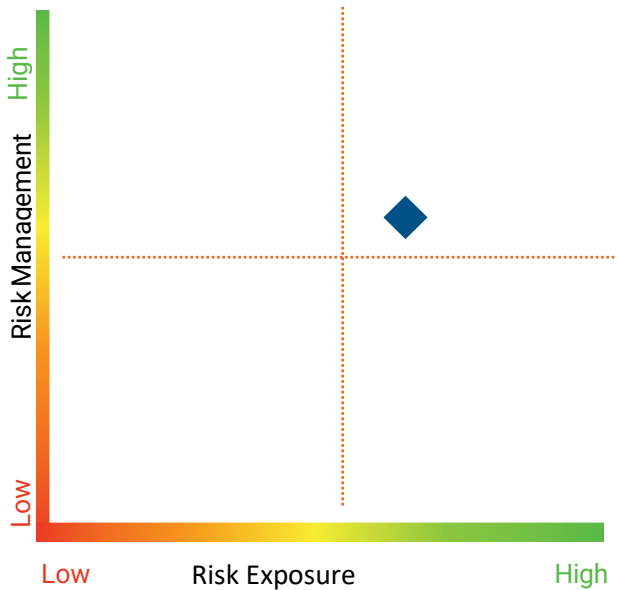
- Instances of physical violence and abuse against farmers have been reported in India, particularly during protests or clashes with authorities. During the farmers' protest against the new agricultural laws, there were reports of police brutality and violence against protesters, including the use of tear gas and water cannons.
- Violence and abuse against women farmers have also been reported, particularly in cases where they assert their land rights. A woman farmer in Madhya Pradesh was allegedly beaten up by her male relatives for asserting her right to the land that was in her name.



Risk Dimension Analysis: Natural Hazard and Event

Risk Exposure Score: 68

Risk Management Score: 68



Pandemic and other global epidemic diseases

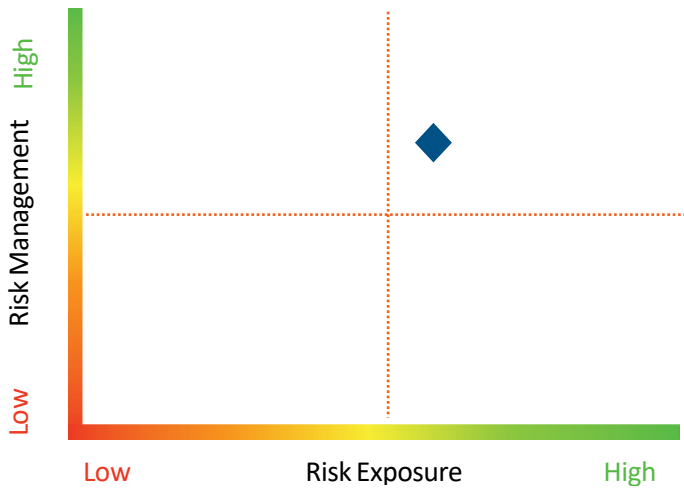
- The epidemic diseases across the globe are a major risk element for the agriculture sector. As its repercussion has been clearly evident post the Covid-19.
- The farmers lost access to markets, credit facilities and ran short of resources like fertilizers, pesticides, chemicals etc. which indicates the serious addressal and advance preparedness in the country like India.
- Disturbances in supply chain due to cross-border transportation, leading to increased cost resulted in the reduction of profits.



Risk Dimension Analysis: Strategic Risk

Risk Exposure Score: 68

Risk Management Score: 68



Resource scarcity and/or misutilization:

- Water scarcity: India is facing severe water scarcity, and agriculture is the biggest consumer of water. In recent years, several states in India have been grappling with drought-like situations due to insufficient rainfall. According to the Central Water Commission, the country received 10% less rainfall than normal in 2021. The inadequate supply of water has affected the cultivation of several crops, including rice, wheat, sugarcane, and pulses.

Soil degradation:

- Soil degradation is a growing concern in India, and it is estimated that over 30% of India's land is affected by soil erosion, nutrient depletion, and chemical pollution. Overuse of chemical fertilizers, mono-cropping, and unsustainable land-use practices are some of the major causes of soil degradation. This significantly impacts the agricultural sector, affecting the productivity and quality of crops.

Public sentiment:

- Farmer protests: In 2020-21, India witnessed massive farmer protests against three farm laws passed by the government. The farmers argued that the laws would benefit large corporations and harm small and marginal farmers. The protests gained widespread public support, with people across the country joining in solidarity with the farmers. The protests affected the agriculture sector, with farmers demanding fair prices for their produce and greater government support.
- Consumer boycotts: In recent years, there have been several instances of consumer boycotts of agricultural products due to concerns over safety and quality. In 2021, there was a call to boycott certain food brands that were allegedly selling products that contained harmful chemicals. The boycott affected the sales of the brands, leading to a decline in demand for their products.

Failed/Hostile M&A:

- The hostile takeover of Indian companies: Hostile takeovers of Indian companies, including those in the agriculture sector, can significantly impact the sector's growth and development. There were reports of a hostile takeover bid by a foreign company of a leading Indian seed company. The bid faced stiff opposition from the Indian government and farmer groups, who argued it would harm the country's food security and sovereignty.
- Failed mergers: Failed mergers in the agricultural sector can result in financial losses and disruption to the supply chain. A proposed merger of two leading seed companies in India fell through due to regulatory issues. The merger would have created one of the largest seed companies in the country, but the regulatory hurdles prevented it from going through. The failed merger affected the companies' financial performance and raised questions about the consolidation of the seed industry in India.

ICICI LOMBARD: Key Solution Offerings



Property

- a. Businesses are always prone to risks and fire eruption and fire insurance provides a comprehensive protection against damages caused due to fire explosion and other risks. Besides fire related perils, it also protect damages caused due to any natural calamity, bursting of water tanks, theft etc. The built in covers include alterations or extensions, stocks on floater basis, temporary removal of stock, cover for specific contents, start-up expenses, professional fees, costs for removal of debris etc
- b. **Solutions**
 - i. **Property Loss Prevention exercise** - We have developed the methodology of Property Value Added Services for corporate customers which focuses on technical engagement with detail risk visit, followed by benchmarking of the risk (Industry Risk Profiling).
 - ii. **Fire Hydrant IoT** - Fire hydrant online monitoring devices use IoT to monitor fire hydrants and assure their availability in emergencies. We've helped multiple corporate customers maintain and monitor this important fire safety component in real time.



Marine

- a. We offer specially curated plans for covering the risk of theft, malicious damage, shortage, and non-delivery of goods, damages during loading and unloading, and mishandling of goods/cargo
- b. Marine Cargo insurance primarily covers loss during transit caused due to fire, explosion, hijacks, accidents, collisions, and overturning
- c. **Solutions**
 - i. **GPS Device Tracking:** With the help of our advance GPS devices we can have bird eye view on the consignment and vehicle from anywhere in the world. OurSAAS allows us to track and get the visibility of the vehicle on the basis of our requirements which is fully customizable



Liability

a. Comprehensive general liability:

- i. This policy is important for every small and medium sized businesses to protect the insured entity against claims arising out of legal liability where they are held responsible for third party bodily injury or property damage due to insured's business, premises or products. It should be taken by every new business as it covers all risk a business may face.

b. Cyber - With cyber risk steadily increasing, security/ data breaches affect millions of records a year. Cyber Risk insurance coverage is designed to help an organization mitigate its risk exposure by offsetting costs involved with recovery after a cyber-related security breach or similar event.

c. Solutions

- i. **Simulated phishing tests** - Simulated real looking phishing tests and record employee behavior to phishing attacks along with training collateral in form of co-brandable posters, infographics and videos
- ii. **Cyber maturity assessments** - Assess the security posture of your organization and identify the potential risks with our assessment based on ISO 27001 Control measures for Information security
- iii. **D&O** - The need of Directors & Officers Insurance is more than ever before. Any breach or non-performance in the duties can result in claims against directors, officers and employees by reason of wrongful act and need to incur various expenses like defense costs, damages or compensation and other incidental costs. This can affect company's growth and performance.



Group Health

- a. Employees are the backbone of an organization and the most valued asset. Our Group health insurance product is designed to offer health coverage to suit employees of all business types ranging from small & medium enterprises to large organizations.
- b. **Solutions:**
 - i. **IL Take Care** - AI enabled mobile app for employees
 - ii. **Health assistance services** - Health Assistance is a dedicated medical care service that assists you in all your health related queries for identifying specialist/hospital/fixing an appointment with doctors/nutritionist /facilitating 2nd opinion
 - iii. **Tele Consultation** – Hello Doctor
 - iv. The insured is eligible to avail unlimited General Physician consultations for routine health issues over the phone by a qualified doctor
 - v. **Diagnostics & pharmacy services** – Book a lab test or home delivery of medicines



Bibliography

<https://www.nabard.org/auth/writereaddata/tender/1211203145Impact%20Assessment%20of%20COVID.pdf>

<https://www.ibef.org/industry/agriculture-india>

<https://www.indiabudget.gov.in/economicsurvey/>

<https://indianexpress.com/article/business/economy/agriculture-sector-has-done-well-needs-re-orientation-economic-survey-8415738/>

<https://www.ifad.org/en/parm#:~:text=Risk%20and%20uncertainty%20are%20inherent,and%20market%20and%20environmental%20shocks.>

[https://pib.gov.in/Pressreleaseshare.aspx?PRID=1496069#:~:text=The%20Government%20has%20rolled%20out,PMFBY\)%20and%20Interest%20Subvention%20Scheme.](https://pib.gov.in/Pressreleaseshare.aspx?PRID=1496069#:~:text=The%20Government%20has%20rolled%20out,PMFBY)%20and%20Interest%20Subvention%20Scheme.)

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1892525#:~:text=Similarly%2C%20food%20inflation%20stood%20at,month%20of%20the%20previous%20year.>

<https://timesofindia.indiatimes.com/business/budget/union-budget-2023-agriculture-sector-needs-fresh-fodder-to-improve-farmer-incomes/articleshow/97458359.cms>

https://www.indiaonline.com/article/general-blog/how-geopolitical-spill-overs-will-impact-indian-economy-122062700016_1.html

https://www.business-standard.com/article/current-affairs/impact-of-geopolitical-tension-not-limited-to-europe-pm-modi-at-g7-122062800002_1.html

<https://www.nabard.org/auth/writereaddata/tender/1211203145Impact%20Assessment%20of%20COVID.pdf>

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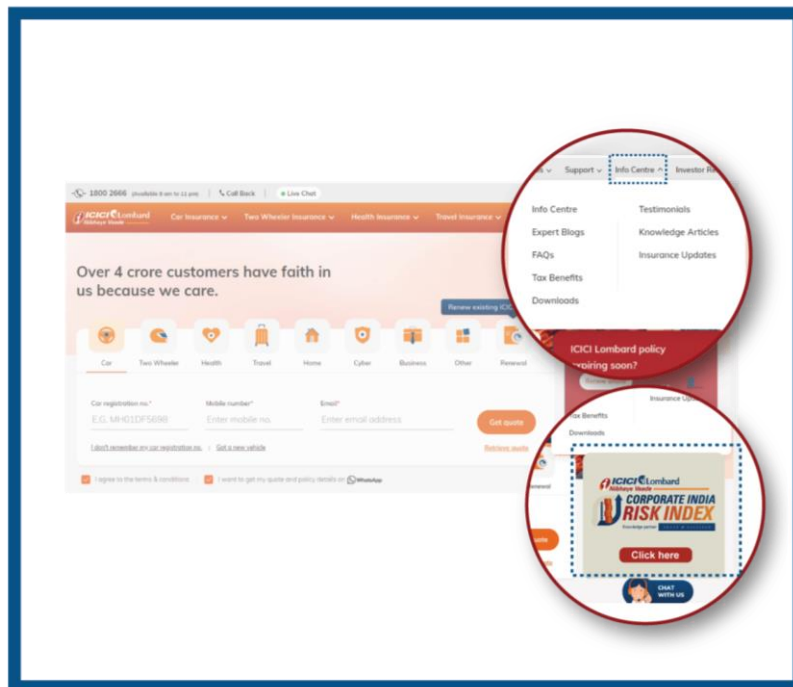


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