ICICI Lombard

CORPORATE INDIA RISK INDEX

2024

Intelligence partner FROST & SULLIVAN

Navigating Risks, Powering India's Growth

SECTOR REPORT 2024

Agriculture & Food Processing

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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

In 2024, the agriculture and food processing sector in India demonstrated significant resilience and adaptability amidst a challenging global landscape. The sector made notable strides in embracing innovation and sustainable practices, helping mitigate the impacts of climate volatility, geopolitical tensions, and supply chain disruptions. Companies invested heavily in climate-resilient agricultural technologies, such as drought-resistant seeds, precision farming, and AI-powered weather prediction models, allowing them to better manage extreme weather events and optimize crop yields. Additionally, the growth of agritech, including vertical farming and regenerative agriculture, provided new avenues for sustainable food production, aligning with both environmental goals and consumer demand for ethically sourced products.

Despite these positive advancements, the sector still faced external challenges. Geopolitical tensions, particularly the ongoing Russia-Ukraine conflict, disrupted global grain exports, while inflationary pressures and rising input costs, such as fertilizers and energy, squeezed profit margins for agribusinesses. Regulatory changes around sustainability and ESG compliance, including stricter carbon emission targets and deforestation-free supply chain mandates, added further complexities. However, the sector's ability to innovate and adapt, coupled with government support through subsidies and technology-driven initiatives, positioned it well to navigate these risks. The future trajectory of India's agriculture and food processing sector will depend on continued technological advancements, strategic diversification, and a focus on sustainability in the face of global uncertainties.

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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 Defence, 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 geo- political 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.

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. 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 global pandemic scale events like the COVID-19 pandemic

Strategic Risk

Strategic risk is the risk of undesirable outcomes of business decisions which may impact 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

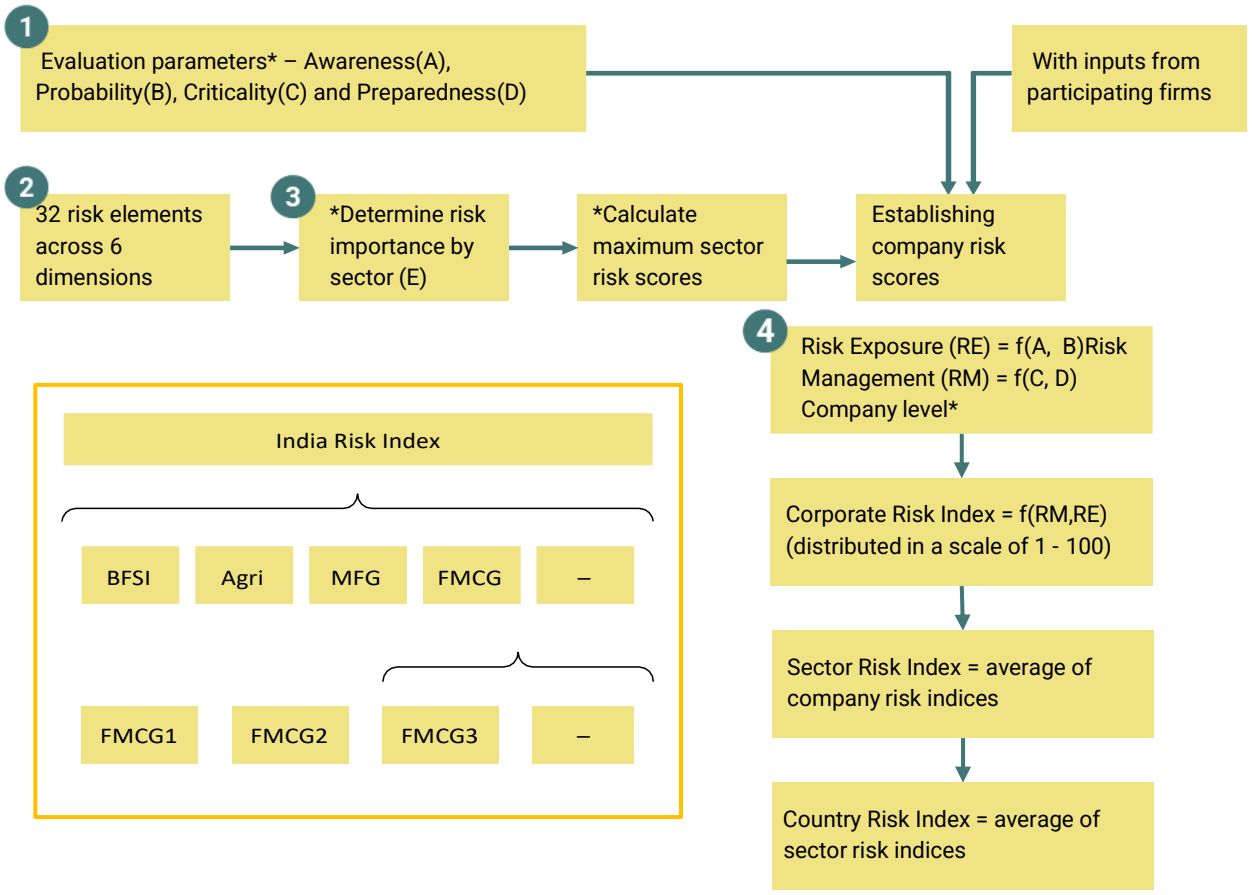


Figure 1: Risk Assessment Approach

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.
- Probability - 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

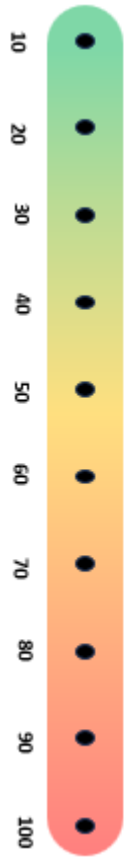
We have selected 20 sectors to understand the current stand of our country today in terms of risk. Risk for various sectors is measured on the risk exposure scale and risk management scale.

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.



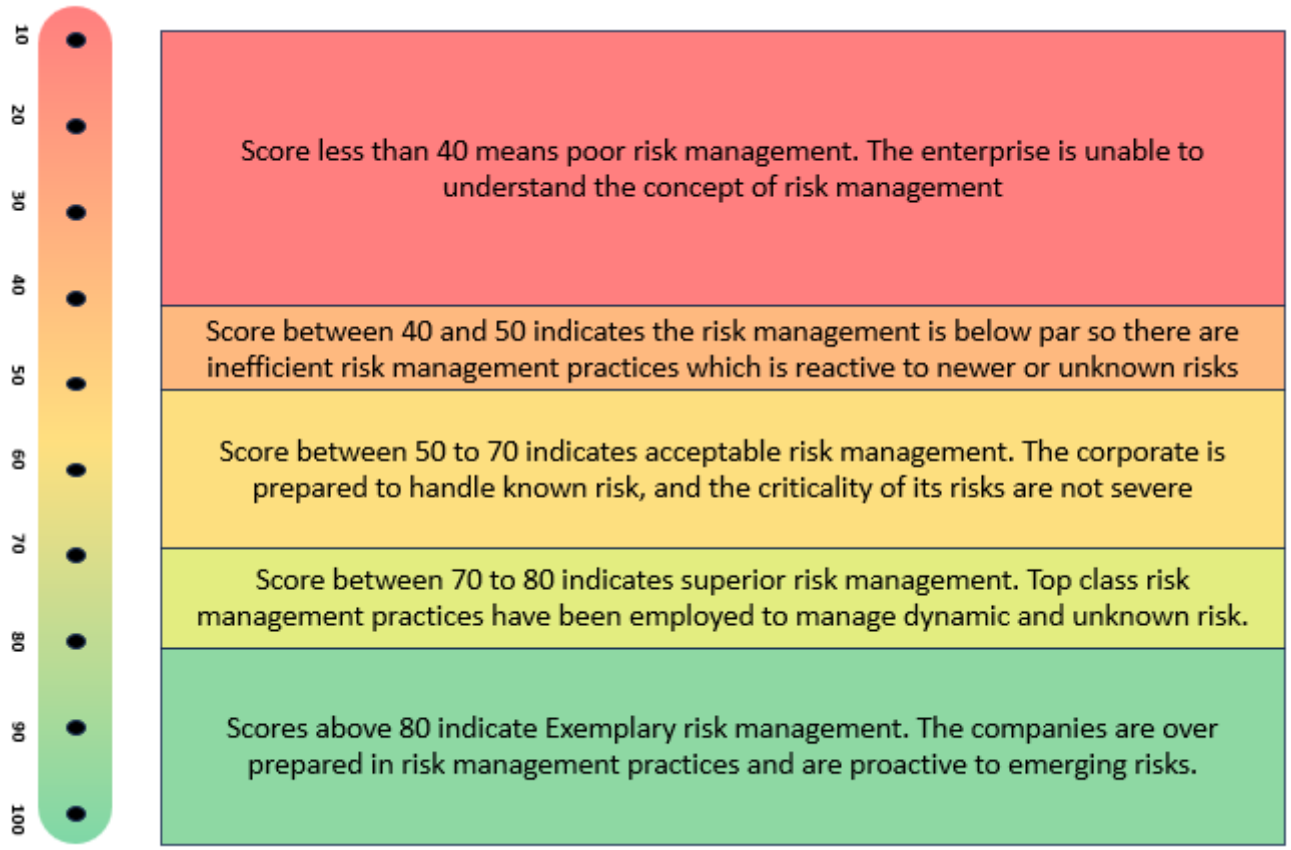
Score: If less than 30 means there is very low risk exposure, and the sector has minimal exposure to overall risk
Score between 30 to 50 indicates low risk exposure and its risk exposure is within acceptable or tolerable limits
Score between 50 to 60 indicates moderate exposure indicating corporate can balance the impact of overall risks up to a certain extent
Score between 60 to 80 indicates high risk exposure and its impact is very high in the industry in which the corporate operates
Score greater than 80 indicates very high-risk exposure. The corporate is unable to foresee risk incidents and probability of occurrence of these incidents may be extremely high

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.

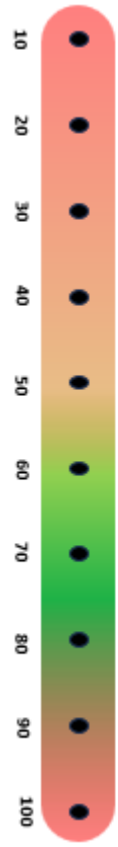
Let's look at the risk management scale.



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.



Score under 40 indicates Ineffective Risk Index which means the corporate has very high-risk exposure or very poor risk management practices or both.
Score between 40 - 55 is Sub-optimal risk index, indicating not all risks are handled effectively. Risk management practices are likely dated or inefficient.
Score between 55 - 65 is optimal risk index indicating most current risks are being handled effectively. Emerging risks associated with strategic initiatives need more diligence
Score between 65 - 80 is superior risk index indicating very effective and efficient risk management practices well positioned to handle current and future risks across dimensions
Score above 80 is over preparedness indicating high investment in risk mitigation practices likely over investment in one or more risk dimensions difficult to justify ROI

India - Resilient Growth and Superior Risk Management

In 2024, India's diverse sectors demonstrated significant growth and resilience, leveraging technological advancements, strategic reforms, and proactive risk management to navigate an evolving economic landscape. Despite global challenges, industries embraced innovation, digital transformation, and sustainable practices, positioning themselves for long-term success.

In this year, the integration of Artificial Intelligence (AI) across various sectors presented both significant opportunities and risks. While AI-driven innovations enhanced productivity, decision-making, and customer engagement, the adoption also raised concerns around data privacy, cybersecurity, and workforce displacement. India navigated these risks by implementing robust data protection regulations and promoting AI ethics in the development and deployment of technology. Additionally, the government and private sector invested in reskilling programs, ensuring the workforce was equipped to adapt to the evolving digital landscape. AI's strategic implementation across sectors like BFSI, healthcare, and manufacturing helped India enhance operational efficiency while balancing the challenges posed by rapid technological transformation.

The Aerospace & Defence sector saw substantial advancements as India attracted global aerospace companies seeking to strengthen supply chains. Local firms expanded their capabilities, particularly in the growing private space sector, driving both revenue growth and global competitiveness. The Agri & Food Processing sector turned to precision farming and AI-driven analytics to enhance productivity, while renewable energy solutions like solar-powered cold storage reduced post-harvest losses, improving sustainability and efficiency.

In the Automotive sector, the shift toward electric vehicles (EVs) gained momentum, supported by government schemes aimed at promoting EV adoption. Major manufacturers expanded their EV portfolios, addressing both sustainability goals and evolving consumer demands. The BFSI sector continued its digital transformation, with AI integration enhancing fraud detection and compliance, further improving security and efficiency.

The Biotech & Lifesciences sector experienced accelerated growth, particularly in genomics and vaccine development, with India solidifying its role as a global leader in pharmaceutical manufacturing. The sector's innovation, supported by public and private investments, enhanced healthcare technology and medical devices. In Chemicals & Petrochemicals, India attracted significant investments to meet rising demand, driven by growing consumption from its expanding middle class, while the Education sector embraced AI and digital learning platforms, expanding access to quality education and equipping the workforce for future demands in emerging technologies.

The Energy sector made substantial progress towards sustainability, with a focus on renewable

energy, including ultra-mega solar parks and offshore wind projects. These initiatives were supported by favorable government policies and decreasing costs of clean energy technologies. The FMCG sector adapted to inflationary pressures by shifting focus towards premium products and e-commerce platforms, which were increasingly driving sales, particularly in rural markets.

In Healthcare, there was significant growth fueled by digital innovations such as telemedicine and AI-driven diagnostics, which helped improve access and efficiency in healthcare delivery. India also continued to strengthen its position as a global hub for medical tourism, offering competitive treatment options. The Real Estate sector benefitted from increased demand in affordable housing and infrastructure development, with commercial real estate seeing steady growth and an emphasis on sustainable building practices.

The IT sector continued to thrive despite global challenges, driven by demand for cloud services, cybersecurity solutions, and AI technologies. Tier 2 and 3 cities emerged as new tech hubs, with government support enhancing regional tech expansion. The Pharmaceutical sector saw an uptick in exports and domestic manufacturing, with reduced dependence on imports and new product launches in global markets bolstering its growth. In Manufacturing, India focused on boosting production through initiatives like the Production-Linked Incentive schemes, especially in electronics and EV manufacturing, which also contributed to job creation and supply chain resilience. The "China + 1" strategy adopted by global firms has played a pivotal role in shaping India's manufacturing sector. While it has increased risk exposure, it has also driven companies to invest in more sophisticated, globally relevant risk management practices, strengthening the sector's resilience and positioning India as a key player in global supply chains.

Media & Entertainment saw continued growth, with OTT platforms gaining popularity, especially in regional content. The Gaming industry also flourished, becoming a key revenue generator as mobile gaming gained dominance. In Steel and Mining, investments in decarbonization and digitalization allowed the sectors to reduce environmental impact and enhance operational efficiency. Startups saw substantial funding despite global slowdowns, with SaaS, fintech, and D2C brands leading the charge in innovation and market expansion.

The Telecom sector expanded 5G coverage and rural internet penetration, narrowing the digital divide and improving connectivity across the country. The Tourism & Hospitality sector rebounded strongly, attracting both domestic and international visitors, with eco-conscious travelers opting for sustainable tourism options and luxury experiences. Finally, the Logistics sector benefited from advancements in automation and multimodal connectivity, reducing costs and improving efficiency, while the government's National Logistics Policy streamlined operations, cutting transit times and enhancing cross-sector integration.

In summary, 2024 saw India's sectors display resilience and adaptability, addressing emerging risks through innovation, digital adoption, and sustainability initiatives. The country's ongoing focus on risk management, technological advancement, and strategic reforms has positioned its economy for continued growth and transformation, paving the way for India to solidify its place as a global economic leader.

India Showcasing an Optimized Risk Handling

Figure 2: Corporate India Risk Index 2024

A score of 65 on the Corporate Risk Index indicates optimal handling of risk by the Indian companies. In 2024, India faced significant market, economy, and operational risks across various sectors, highlighting areas for improvement in the coming years. The year was further complicated by global events such as the ongoing Israel-Palestine conflict, which led to geopolitical instability and fluctuations in global oil prices. The rise of recession fears in major economies like the United States and Europe disrupted supply chains and created demand uncertainties, impacting Indian exports and manufacturing. Investor sentiment in India remains flat in 2024, reflecting the cautious behavior of Angel and VC investors globally. This persistent challenge, which has carried over from 2023, highlights ongoing risks in the market and underscores the uncertainty that continues to affect investment decisions in the country.

Additionally, India's national elections increased risk exposure, with political uncertainty and policy shifts potentially affecting business operations, investor confidence, and sectoral reforms. These global and domestic challenges underscored the need for stronger risk management

frameworks and adaptive strategies across India's industries to navigate future uncertainties effectively.

In response to the heightened risks in 2024, companies across India have increasingly focused on strengthening their risk management frameworks. With the backdrop of global uncertainties, such as geopolitical conflicts and economic slowdowns, alongside domestic challenges like the national elections, businesses have prioritized proactive risk identification, mitigation strategies, and resilience-building measures. This shift reflects a broader trend of embedding risk management into corporate strategy, with an emphasis on agility, digital transformation, and sustainability.

As a result, sectoral risk indices have remained within the superior and optimal risk index range, demonstrating that most industries in India have effectively managed the challenges they faced. Through a combination of technological innovations, regulatory compliance, and strategic planning, sectors have been able to maintain stability and navigate both internal and external risks. This disciplined approach to risk management has ensured that, despite various pressures, India's sectors remained well-positioned for sustainable growth and continued progress in 2024.

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

Figure 3: Corporate India Risk Index 2024 Sector Score

Superior Risk Index

Superior risk handling was found in nine industrial sectors:, Pharmaceuticals, Healthcare Delivery, Automotive & Ancillary, Manufacturing, Metals & Mining, Telecom & Communication, BFSI, Tourism & Hospitality, and Transportation & Logistics.

Optimal Risk Index

Optimal risk handling was found in 11 industrial sectors: Media & Gaming, FMCG, Infra & Realty, Agriculture & Food processing, Biotech & Lifesciences, IT ITES, Energy, New Age & Startup, Aerospace & Defence, Chemicals & Petrochemicals and Education & Skill Development.

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As a result, sectoral risk indices have remained within the superior and optimal risk index range, demonstrating that most industries in India have effectively managed the challenges they faced. Through a combination of technological innovations, regulatory compliance, and strategic planning, sectors have been able to maintain stability and navigate both internal and external risks. This disciplined approach to risk management has ensured that, despite various pressures, India's sectors remained well-positioned for sustainable growth and continued progress in 2024.

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Agriculture & Food Processing Sector Insights 2024

Agriculture has been the backbone of India's economy for centuries, providing employment to a significant portion of the population and contributing substantially to the country's GDP. The food processing industry, an extension of agriculture, plays a crucial role in adding value to agricultural produce, reducing wastage, and ensuring food security. In 2024, India's agricultural and food processing sectors are witnessing transformative changes driven by technological advancements, policy reforms, climate change challenges, and evolving consumer preferences.

India remains one of the largest producers of agricultural commodities such as rice, wheat, pulses, sugarcane, spices, and dairy products. However, in 2024, the agricultural sector is undergoing significant changes. The use of precision farming, artificial intelligence, and the Internet of Things in agriculture is increasing efficiency and productivity. Drones, sensors, and automated irrigation systems help farmers optimize resource usage. With climate change impacting rainfall patterns and temperature, farmers are adopting climate-smart agriculture techniques such as drought-resistant crops, agroforestry, and organic farming. The Indian government continues to support agriculture through schemes like PM-KISAN, PMFBY (crop insurance), and digital platforms for direct benefit transfers. The rise of agri-tech startups is revolutionizing the supply chain, offering services such as digital soil testing, farm mechanization, and online marketplaces for farmers.

Despite progress, the sector faces several challenges. Fragmented land holdings limit economies of scale and mechanization. Over-extraction of groundwater and erratic monsoons threaten irrigation. Lack of storage and logistics infrastructure leads to significant post-harvest losses. Fluctuations in global prices and domestic demand affect farmers' incomes. Migration to urban areas has created a shortage of agricultural laborers, further impacting production.

The food processing industry is one of the fastest-growing sectors in India, contributing nearly 10% to GDP from agriculture. Some of the latest trends shaping the industry in 2024 include increased investment and foreign direct investment, which is being encouraged through ease of doing business policies. Consumers are shifting toward organic, gluten-free, and plant-based diets, leading to innovations in the processed food sector. Improvements in cold storage and logistics reduce post-harvest losses and enhance food availability. The pandemic-driven digital shift continues, with companies like Amazon Fresh, BigBasket, and JioMart expanding their reach. The Food Safety and Standards Authority of India is strengthening quality norms, making food processing more transparent and safe.

The government has introduced several initiatives to promote agricultural growth and food processing. The Production-Linked Incentive (PLI) Scheme incentivizes food processors to boost

output and exports. Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) provides direct income support to farmers. The Mega Food Parks Scheme encourages cluster-based food processing industries with common infrastructure. The National Mission on Edible Oils aims for self-sufficiency in edible oil production. The E-NAM (Electronic National Agriculture Market) is a digital platform connecting farmers with markets to ensure better price realization.

The integration of technology is a game-changer for the food processing industry. Artificial Intelligence and Machine Learning are being used in quality control, demand forecasting, and automation. Blockchain technology is ensuring transparency and traceability in the food supply chain. Biotechnology is improving food preservation techniques and increasing shelf-life. 3D food printing is emerging as an innovative method in the production of customized food products.
Sustainability has become a key focus in 2024, with efforts being made to reduce food waste through innovations in packaging and preservation that help curb food spoilage. Renewable energy sources such as solar-powered cold storage and biofuel adoption are gaining momentum. Sustainable farming practices such as organic farming and zero-budget natural farming are being promoted. Water conservation methods, including drip irrigation and rainwater harvesting, are being encouraged at a large scale.
The agricultural and food processing industry in India is on a trajectory of rapid growth, fueled by innovation, government support, and changing consumer preferences. Challenges such as climate change and supply chain inefficiencies persist, but with increased adoption of technology and policy support, the sector is poised for resilience and expansion. Moving forward, enhancing farmer incomes, ensuring food security, and promoting sustainable practices will be key priorities for India's agricultural and food processing industries in 2024 and beyond.

Agriculture & Food Processing Sector Risk Index 2024 Vs 2023

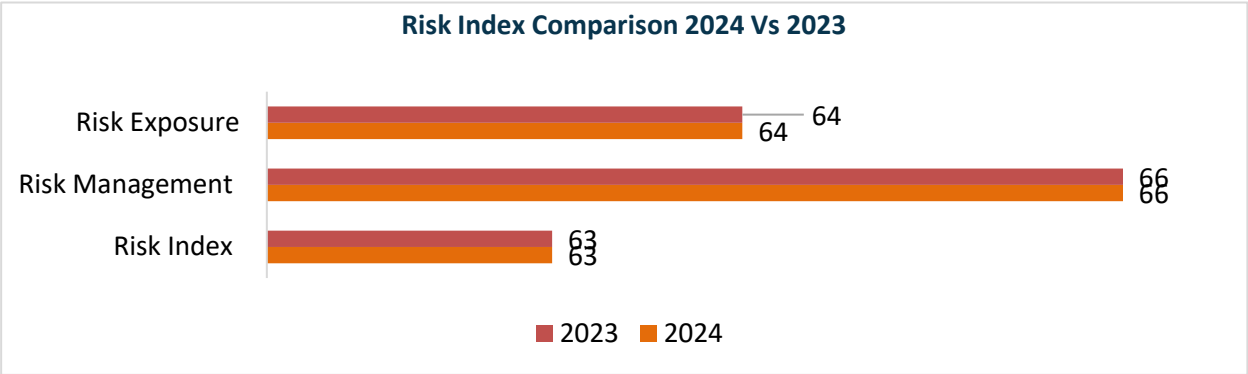


Figure 4: Detailed Comparative Analysis 2024 Vs. 2023

Agriculture & Food Processing Sector Risk Index 2024 Vs 2023

The overall Risk Index for the sector remained constant from 2023 to 2024 at 63, while the risk exposure and risk management also remained stable during the year.

Agriculture & Food Processing Sector Risk Exposure 2024 Vs 2023

The exposure to risks, such as climate volatility, geopolitical tensions, and supply chain constraints, remained high, reflecting ongoing global uncertainties. While extreme weather events, geopolitical conflicts, and inflationary pressures continued to impact the sector, the level of exposure did not increase significantly from the previous year. Companies have already factored these risks into their long-term strategies, focusing on climate-resilient agriculture, technological innovations, and supply chain diversification.

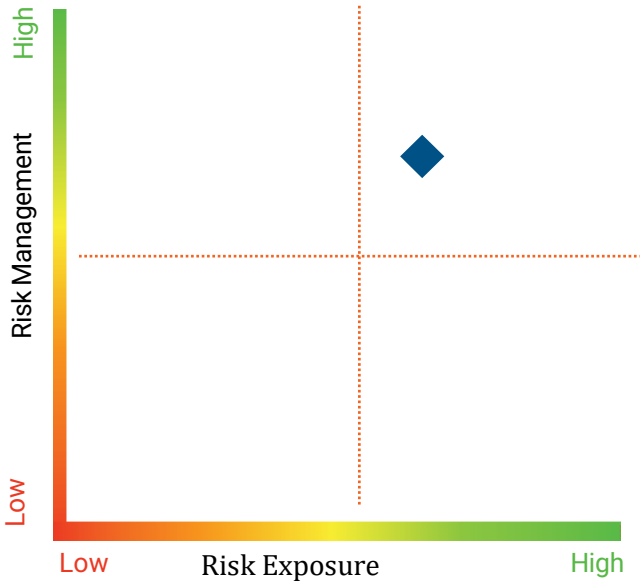
Agriculture & Food Processing Sector Risk Management 2024 Vs 2023

On the risk management side, the sector's response remained steady, with agribusinesses continuing to invest in sustainable practices, technological advancements, and regulatory compliance. While companies did enhance their focus on innovation, such as integrating AI-driven farming techniques and blockchain for supply chain transparency, the overall risk management strategies were built on a solid foundation established in previous years.

Key Highlights

Risk Dimension Analysis: Market and Economy

Risk Exposure Score: 69
Risk Management Score: 71



Inflation

- Inflation significantly impacts the agriculture and food processing industry in India, driving up costs across the supply chain. As of recent years, food inflation in India has fluctuated between 5% to 10%, with critical commodities like wheat, rice, and pulses seeing price hikes of up to 20% in some instances.
- Rising input costs, including fertilizers, pesticides, and fuel, have added financial stress to farmers, with diesel price hikes alone increasing operational costs by over 15%. The food processing sector also faces higher packaging costs due to inflation in raw materials like plastic, aluminum, and glass, leading to price increases for end consumers.
- Inflation affects consumer demand by reducing purchasing power, particularly for processed and premium food products. In 2022, the Reserve Bank of India raised interest rates to curb inflation, making agricultural loans more expensive, further impacting investments in farm mechanization and modernization.
- Inflation also disrupts long-term contracts in the food supply chain, as suppliers struggle to honor fixed-price agreements. Additionally, wage inflation affects labor-intensive sectors such as tea and sugarcane plantations, where wages have increased by 8-10% annually. If inflation remains unchecked, it could severely reduce profit margins and create volatility in the agriculture sector, affecting both farmers and food processing companies.

Taxation Risk

- Taxation policies in India heavily influence the profitability of agricultural businesses and food processing units. The introduction of the Goods and Services Tax (GST) brought some uniformity, with tax rates for food grains at 0%, processed foods at 5%, and packaged food products at 12%–18%.

- However, tax exemptions for raw agricultural produce, while benefiting farmers, create an uneven burden on food processors. A major challenge is the high taxation on agricultural inputs such as fertilizers (5% GST) and pesticides (18% GST), which adds to production costs. The Minimum Alternate Tax (MAT) on agribusiness companies and corporate tax rates of 25%–30% also impact profitability.
- Import duties on essential food processing machinery range between 5% and 20%, increasing capital expenditure. Tax evasion and non-compliance remain persistent issues, with many small-scale agribusinesses operating in the informal sector to avoid high tax burdens.
- Additionally, subsidies on fuel and electricity vary by state, creating disparities in production costs across regions. Frequent changes in tax policies, such as revisions in GST rates or export duties on agricultural products like wheat and sugar, further complicate business planning. A stable, farmer-friendly taxation regime is essential to ensure the long-term growth of India's agriculture and food processing industries.

Geopolitical Risks

- India's agricultural trade and food processing industry are vulnerable to geopolitical conflicts and international trade restrictions. Border tensions with China, trade sanctions on Russia, and disruptions in the Middle East directly impact agricultural supply chains. For instance, India imports nearly 25% of its fertilizers from Russia and Belarus, and sanctions on these countries have led to a 30%-40% increase in fertilizer costs.
- The war in Ukraine caused global wheat shortages, prompting India to ban wheat exports in 2022 to protect domestic supply. Trade disputes with the U.S. and European Union over pesticide residue limits and quality standards have led to rejections of Indian spice and basmati rice shipments.
- The ongoing India-Canada diplomatic strain has affected pulse imports, as Canada is a major supplier of lentils to India. Additionally, India's rice export restrictions, implemented due to domestic inflation concerns, have affected international buyers and strained trade relations.

Foreign Exchange Risk

- Foreign exchange volatility significantly affects agribusinesses involved in exports and imports. India is a major exporter of rice, spices, and processed foods, with agricultural exports crossing $50 billion in FY 2022-23. A fluctuating rupee impacts the competitiveness of Indian exports—when the rupee weakens against the dollar, exporters benefit, but importers of machinery, fertilizers, and edible oils suffer.
- A strong rupee, while beneficial for imports, can make Indian agricultural products expensive in global markets, reducing demand. The unpredictability of forex rates, driven by global economic conditions and geopolitical events, adds an additional layer of financial risk for the sector.

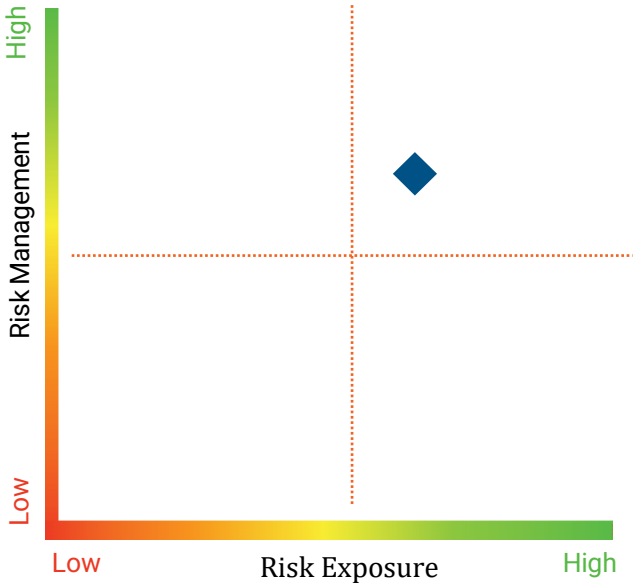
Regulatory Risk

- The Indian agriculture and food processing sector is highly regulated, with multiple government agencies enforcing rules that impact production, pricing, and exports. The Food Safety and Standards Authority of India (FSSAI) mandates stringent quality standards, and compliance failures can lead to heavy penalties or product recalls.
- In 2023, FSSAI imposed fines exceeding ₹50 crore on companies for non-compliance with labeling and safety regulations. The Essential Commodities Act (ECA) allows the government to impose stock limits on staple crops like wheat, rice, and pulses, causing unpredictability for traders and processors. Additionally, sudden bans on agricultural exports—such as the wheat export ban in 2022—can lead to financial losses for farmers and exporters.
- The approval process for genetically modified (GM) crops remains complex, with Bt cotton being the only approved GM crop, while trials for GM mustard and brinjal face ongoing legal hurdles. Food processing units must also comply with environmental regulations, such as wastewater treatment and pollution control norms, which increase operational costs.
- Frequent policy changes, coupled with bureaucratic delays in licensing and approvals, deter investments in the sector. The lack of regulatory clarity on organic certification and new-age food technologies, such as plant-based proteins, further adds to business uncertainty.

Risk Dimension Analysis: Technology

Risk Exposure Score: 61

Risk Management Score: 64



Innovation Risk / Obsolete Technology

- The slow adoption of new technologies in Indian agriculture and food processing creates inefficiencies and reduces global competitiveness. While developed countries use precision farming, AI-driven monitoring, and advanced processing equipment, India still relies on outdated irrigation methods and manual labor.
- Only 45% of Indian farms use mechanized tools, compared to 95% in the U.S. In food processing, lack of automation increases wastage and production costs, making exports less competitive. Smaller businesses struggle to invest in modern machinery due to high costs and limited credit access. Without continuous innovation, Indian agribusinesses risk lagging behind global standards, affecting productivity and profitability.

Intellectual Property Risk

- Agribusinesses and food processors investing in research face risks related to patent infringements, counterfeit seeds, and unauthorized use of proprietary technology. India's seed industry, valued at ₹28,000 crore, loses an estimated 15%-20% of revenue annually due to fake seeds.
- Biotech firms face challenges in protecting genetically modified (GM) crops due to weak enforcement of patent laws. Food brands developing unique recipes, packaging, or processing techniques risk imitation by unorganized players.
- Weak intellectual property (IP) laws and slow legal proceedings make it difficult for innovators to safeguard their investments, discouraging research and development in the sector.

Disruptive Technology

- Emerging technologies such as vertical farming, lab-grown meat, and AI-driven supply chain optimization pose both opportunities and threats to traditional agribusinesses.
- Indian dairy farmers, for example, face challenges from plant-based milk alternatives, projected to grow at a CAGR of 20%. Blockchain-enabled farm-to-fork transparency is reshaping supply chains, but small farmers lack the digital infrastructure to adapt.

- Large corporations with technological investments gain market share, while smaller players struggle to compete. Failure to integrate disruptive technologies can result in declining competitiveness and revenue loss.

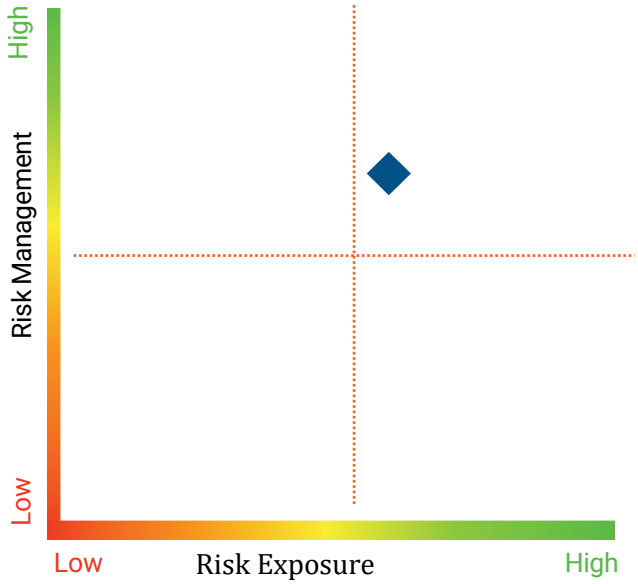
Data Compromises

- The digitization of agriculture—through smart farming, e-commerce platforms, and digital payments—raises concerns about data security. Farmer databases, pricing models, and trade secrets are vulnerable to hacking.
- In 2022, a major agritech platform in India suffered a data breach affecting 3 million farmers, exposing sensitive financial and personal information. Companies storing consumer and supply chain data risk financial penalties under data protection laws. Strengthening cybersecurity infrastructure is crucial to preventing data theft and business disruptions.

Risk Dimension Analysis: Operational and Physical

Risk Exposure Score: 63

Risk Management Score: 66



Critical Infrastructure Failure / Machine Breakdown

- Agricultural production and food processing depend heavily on machinery and infrastructure, making equipment failures a significant risk. Power outages, which still affect rural areas in states like Uttar Pradesh and Bihar, disrupt irrigation, cold storage, and processing operations.
- A single cold storage failure can result in losses exceeding ₹10 lakh for perishable goods like fruits and dairy.
- The food processing sector relies on high-capacity machinery such as grinders, extrusion machines, and packaging lines, which, if malfunctioning, can halt production for days.
- In 2023, a major sugar mill in Maharashtra reported losses of ₹5 crore due to a conveyor belt failure during peak crushing season. Small and medium-sized enterprises (SMEs) often struggle with maintenance costs, leading to frequent breakdowns.

Business Continuity/Sustainability

- The agriculture and food processing industry in India faces challenges in maintaining long-term business continuity due to climate change, resource depletion, and evolving consumer preferences. Erratic monsoons and extreme weather events have led to frequent crop failures, with losses exceeding ₹60,000 crore in 2022 due to droughts and floods.
- Water scarcity in states like Punjab and Maharashtra threatens sustainability, as excessive groundwater extraction has reduced water tables by over 10 meters in some areas. Food processing units also struggle with energy inefficiency, with power outages causing production delays.
- Additionally, increasing regulatory pressure for sustainable packaging and carbon footprint reduction forces companies to adopt costlier eco-friendly solutions. Large firms are investing in renewable energy and water conservation, but smaller businesses lack the capital to do so.
- The demand for organic and chemical-free products is growing, but certification and compliance

remain barriers for small-scale farmers. Without sustainable practices, companies risk losing export opportunities, facing stricter government regulations, and struggling with long-term resource availability.

Supply Chain Risk

- India's agricultural supply chain is vulnerable to disruptions from poor infrastructure, transportation bottlenecks, and labor shortages. Nearly 30% of perishable produce is lost annually due to inadequate cold storage and logistics, amounting to losses of ₹92,000 crore.
- Fuel price volatility increases transportation costs, making food more expensive for consumers. Seasonal labor shortages, especially during peak harvest periods, cause supply delays, as seen during COVID-19 lockdowns when farm output was stranded.
- The overdependence on middlemen reduces farmer earnings while increasing costs for consumers. Additionally, global disruptions—such as the Suez Canal blockage in 2021—led to delays in agricultural imports and exports.
- Digital supply chain solutions and better warehousing infrastructure can mitigate these risks, but their adoption remains slow among small businesses.

Commodity Price Risk

- Fluctuations in global and domestic commodity prices impact profitability in agriculture and food processing. India's wheat and rice prices surged over 15% in 2022 due to export restrictions and lower yields. Edible oil prices are highly volatile, with palm oil costs fluctuating by 30%-40% in response to international supply changes.
- Farmers often suffer when prices crash post-harvest, as seen in tomato prices dropping from ₹100/kg to ₹10/kg within weeks. Processors face raw material cost fluctuations, affecting profit margins. Futures trading and government price support schemes help manage risks, but price volatility remains a significant challenge for the industry.

Portfolio Risk

- Companies with a narrow product portfolio face greater financial risks due to changing market trends. A firm solely dependent on sugarcane may suffer when sugar prices drop, as seen with a 20% decline in 2021.
- Diversified agribusinesses, such as ITC, mitigate risks by operating in multiple sectors like grains, dairy, and packaged foods. The shift toward plant-based and organic foods also pressures traditional food companies to innovate. Businesses that fail to diversify risk stagnation, revenue loss, and increased vulnerability to market disruptions.

Environmental Hazards Risk

- Climate change and pollution directly threaten agriculture. In 2021, unseasonal rains damaged ₹30,000 crore worth of crops in Maharashtra alone. Rising temperatures reduce yields for heat-

sensitive crops like wheat, leading to a 5% drop in output per degree Celsius increase.

- Soil degradation, pesticide overuse, and declining water resources further impact production. Food processors must also comply with stricter environmental laws, including waste management and emissions control. Investing in climate-resilient crops and sustainable practices is crucial to mitigating these risks.

Workplace Accident

- The agriculture and food processing industry sees frequent workplace accidents due to outdated machinery, chemical exposure, and inadequate safety training. In 2022, over 10,000 farm-related accidents were reported, with pesticide poisoning being a major cause of fatalities.
- Food processing units also face hazards like machinery entanglements and fire risks, leading to production halts and legal liabilities. The lack of occupational safety regulations for informal farm laborers further exacerbates risks. Companies must invest in protective equipment, training, and automation to ensure worker safety.

Human Resource

- The agriculture sector faces labor shortages as rural workers migrate to cities, leading to increased mechanization costs. Skilled labor is scarce in food processing, with a 20%-30% shortfall in trained workers for advanced machinery.

Financial Risk

- Agricultural businesses face financial instability due to fluctuating input costs, debt burdens, and credit constraints. In 2022, total agricultural loans exceeded ₹18 lakh crore, but small farmers still struggle to access formal credit, leading to dependency on high-interest informal lending.
- Food processors require heavy investments in automation and infrastructure, but high interest rates and collateral requirements make funding difficult. Market fluctuations and export bans further create revenue uncertainties. Financial planning, risk hedging, and government subsidies play crucial roles in managing these risks.

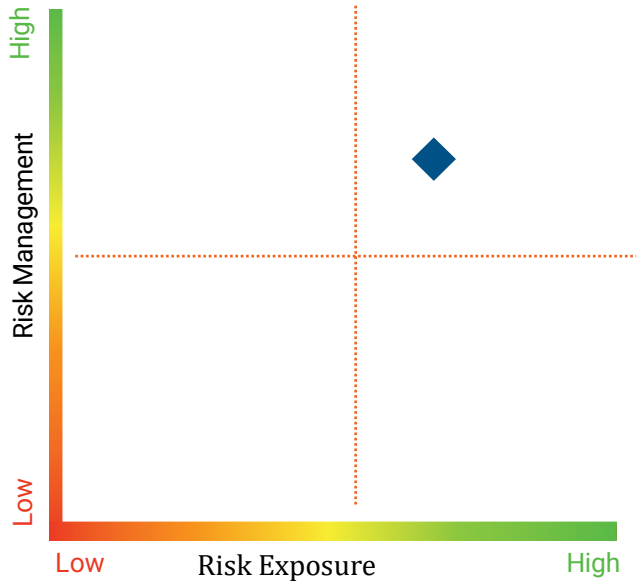
Breaches of law (National/International)

- Legal non-compliance can result in financial penalties, product bans, and reputational damage. In 2022, India faced multiple rejections of spice exports due to pesticide residue violations in the EU. Food adulteration scandals, such as the Nestlé Maggi controversy in 2015, led to millions in losses and brand damage.
- Environmental laws regarding water usage and pollution are tightening, and non-compliance can lead to factory shutdowns. International trade laws also impact agribusinesses, with countries imposing stricter quality checks on Indian exports. Ensuring regulatory compliance is essential to avoid legal consequences.

Risk Dimension Analysis: Crime and Security

Risk Exposure Score: 61

Risk Management Score: 63



Cyber-crimes

- Cyberattacks on food processing companies and agribusinesses have increased with the rise of digital platforms. In 2021, ransomware attacks on global food companies disrupted supply chains, with some companies paying millions in ransom.
- In India, small and mid-sized agritech firms face risks from phishing scams and financial fraud. Hackers targeting critical systems—such as cold storage units or automated processing lines—can cause significant financial losses. Strengthening cybersecurity frameworks and employee awareness is essential to mitigating these risks.

Counterfeiting

- Fake seeds, adulterated fertilizers, and spurious pesticides cost Indian farmers over ₹6,000 crore annually. The unorganized sector floods the market with counterfeit food products, affecting brand reputation and consumer trust. In 2022, over 25% of honey brands in India failed purity tests, leading to recalls.
- Counterfeit food products also pose health risks and lead to regulatory penalties. Strengthening quality control, improving traceability with blockchain, and enforcing stricter penalties can help mitigate counterfeiting risks.

Threat to Women Security

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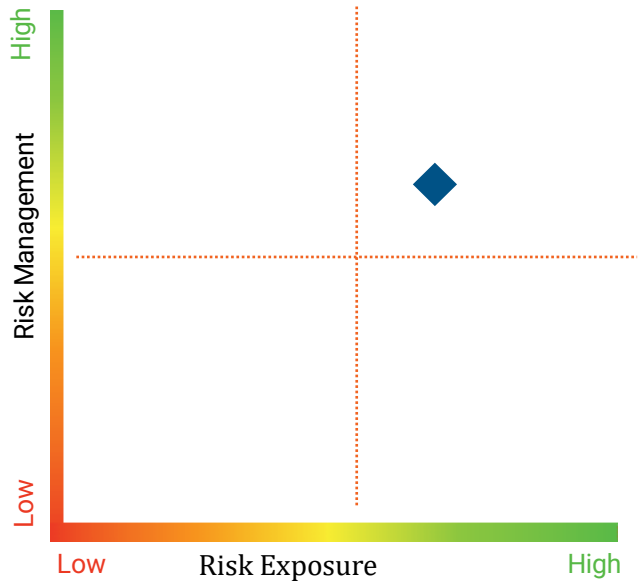
Terrorism

- Acts of terrorism and extremist activities disrupt agricultural supply chains, damage infrastructure, and reduce investor confidence. In regions like Jammu & Kashmir and the Northeast, insurgencies have affected farm productivity and trade.
- In 2021, cross-border tensions led to disruptions in fruit and saffron exports from Kashmir. Food supply chains are also vulnerable to bioterrorism, where contamination of food stocks could lead to public health crises. Strengthening security at key infrastructure points and implementing food safety monitoring systems can reduce these risks.

Risk Dimension Analysis: Natural Hazard and Event

Risk Exposure Score: 60

Risk Management Score: 61



Natural Hazards like flood, drought, famine, earthquake, landslide etc

- India faces frequent natural disasters such as floods, droughts, and cyclones, causing extensive damage to crops and food processing units. In 2021, Cyclone Tauktae led to losses exceeding ₹15,000 crore in agriculture.
- Droughts in Maharashtra and Rajasthan have repeatedly affected grain production, reducing farmer incomes and increasing food prices. Unseasonal rains also lead to quality deterioration in perishable goods. Climate-resilient infrastructure, insurance coverage, and improved forecasting systems are essential to mitigating losses from natural hazards.

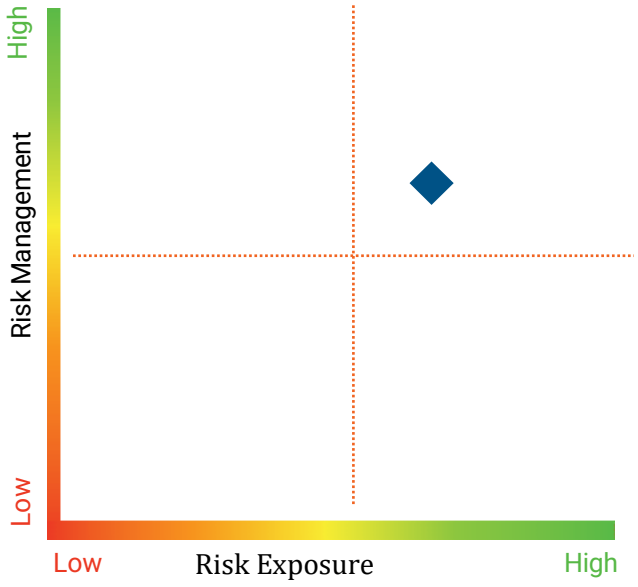
Pandemic and other global epidemic diseases

- The COVID-19 pandemic severely impacted the agriculture and food processing sector, disrupting supply chains and labor availability. Food processing plants had to shut down temporarily, causing losses of over ₹20,000 crore.
- Export bans on essential commodities, such as wheat and onions, were imposed to maintain domestic stability. Future pandemics could lead to similar disruptions, affecting food security and business continuity. Strengthening automation, digital trade, and contingency planning can improve resilience against global health crises.

Risk Dimension Analysis: Strategic Risk

Risk Exposure Score: 64

Risk Management Score: 64



Resource scarcity / Misutilisation / Overall Utilisation

- Water, land, and energy shortages pose serious challenges for agriculture. Over 80% of India's water consumption is for irrigation, yet water tables are declining at alarming rates. Fertilizer shortages, such as the 2021 global urea crisis, disrupt farm productivity.
- Inefficient use of land and excessive pesticide application degrade soil quality. Companies mismanaging resources face higher costs and regulatory scrutiny. Sustainable resource management, precision farming, and efficient energy use are essential for long-term sustainability.

Increased number of recalls and quality audits

- Rising food safety regulations have led to more product recalls, affecting brand reputation and finances. In 2022, FSSAI rejected over 10,000 food product samples due to safety violations. A single recall can result in losses of crores, as seen in the Nestlé Maggi ban, which caused an estimated ₹450 crore in damages.
- Regular quality audits increase compliance costs for businesses, but failing them leads to stricter penalties. Ensuring high-quality standards through advanced testing and compliance measures is critical.

Delay in execution of projects

- Infrastructure projects like cold storage, irrigation facilities, and food processing plants often face delays due to bureaucratic hurdles, land acquisition issues, and financial constraints. The ₹10,000 crore Pradhan Mantri Kisan Sampada Yojana aimed at boosting food processing has seen slow implementation due to red tape.
- Delays increase costs, reduce investor confidence, and lead to market inefficiencies. Streamlining project approvals and ensuring better coordination between government agencies can mitigate these risks.

Public Sentiment

- Consumer perception greatly affects agribusinesses. Concerns over pesticide residues, GM crops, and food adulteration can lead to product boycotts. In 2021, protests against genetically modified mustard led to delays in government approval.
- Public backlash against excessive plastic packaging has forced companies to adopt sustainable alternatives, increasing costs. Negative publicity through social media can damage brand reputation overnight. Companies must engage in transparent communication and adopt consumer-friendly policies to maintain trust.

Failed / Hostile Mergers & Acquisitions

- The food processing sector sees frequent mergers and acquisitions, but unsuccessful deals can lead to financial losses and operational challenges. Failed integrations—such as the 2018 acquisition of a dairy company by a multinational firm that later exited India—show how cultural and operational mismatches can destroy value.
- Hostile takeovers create uncertainty for employees and investors, disrupting operations. Proper due diligence, cultural alignment, and clear post-merger integration plans are crucial for success.

ICICI LOMBARD: Key Solution Offerings

Property

Evaluation of various risks to understand areas for improvement, such as fire preparedness, electrical safety, safety & emergency preparedness, maintenance and house-keeping, etc. By evaluating risks, we can identify potential hazards and advise on mitigating risks.

- **Property Loss Prevention:** We believe users should carry out detail risk visit followed by benchmarking of the industry good practices (Industry Risk Profiling). For instance, industries such as chemicals & petrochemicals impose a major challenge in manufacturing due to inherent risk. We recommend solutions for "Low Focus - High Loss Areas. This can help in minimizing severity losses. All the risk recommendations are grouped into four different segments based on cost-impact matrix and the priority is decided accordingly. Key decision makers at user's end can ensure to get recommendations implemented.
- **Comprehensive Risk Assessment (CRA):** A Comprehensive Risk Assessment is a systematic approach to electrical safety specially designed for industries to evaluate potential hazards and recommend improvements, coupled with savings. It is an important tool for identifying risks, severity of hazards and avoid incidents arising out of electrical faults.
- **Electrical Risk Assessment (ERA):** An Electrical Risk Assessment is a basic solutions focused towards electrical safety designed to evaluate potential hazards and recommend improvements. Majority of fires in India are caused due to electrical installations. Ensuring safety of electrical installations of industrial unit or organization is critical to reduce risk and ensure safety compliance with Safety Standards and Regulation. ERA is an important tool which have 6 inbuilt solutions such as Electrical Audit & Thermography, etc.
- **Fire Hydrant IoT:** Fire Hydrant IoT: Fire hydrant IOT (ILGIC Patented Solution) is an automated device for monitoring key parameters such as Hydrant and Sprinkler line pressure, Main and Jockey pump on-off status, Firewater tank level. These can be interpreted to provide intelligence on unauthorized usage of water and leakage, effectively saving water. This information pertaining to breach of above-mentioned parameters is notified through dashboard & email alerts. Monitoring of such system is essential as these fire fighting systems are lifeline during any emergency.
- **Temperature & Humidity IoT:** Provides end-to-end plug & play ambient temperature and humidity monitoring Solution to manage temperature and humidity-controlled environment more efficiently. It generates - Automated reports (historical trends for different locations etc.). Intelligent Alerts - SMS & emails is sent to the concerned (one or multiple) stakeholders in case

any anomaly.

- **Electrical IoT:** Electrical IoT is a patented solution (ILGIC Patented Solution) to avoid any instances of short circuiting due to abnormal voltage & current conditions. These are mainly built for application in warehouses. This solution has been created as these locations are having huge stocks with lesser manpower during emergencies mainly during non-business hours. The device automatically cuts off power in case of abnormality & restarts back when situation is normal.
- **Ultrasound technology for Gas Leak Detection:** Use of ultrasound technology for leak detection in process lines. The methodology recommends a non-destructive way of avoiding losses with no downtime. The main objective is to identify the leakages in all pressurized systems including pipelines by using ultrasound technology and tag them for rectification. It also includes listing leaks with individual CFM losses and cost savings possible.
- **Fire Mitigation Solutions:** Solutions have been designed based on their specific needs, keeping in mind the level of awareness and complexity of the location. These best-in-class solutions which are installed at correct locations.
- **Renewable Solutions:** In line with our philosophy of recommending business solutions, we recommend efficiency measurements for wind and solar power generating assets. Drones are used to provide high accuracy and quick reach which is not possible through any traditional methodology. User get to know about the low performing module and ways to improve the same within the entire solar plant with latlong identification. We recommend advanced drone-based technology for inspection of wind turbines and solar PV modules.

Marine

In the dynamic realm of marine insurance, cargo faces a myriad of risks, from unpredictable weather conditions to unforeseen accidents, safeguarding against potential challenges at sea and in surface transportation / INLAND movement is paramount.

- **MLCE (Marine loss control engineering):** Frequent occurring losses due to Peril such as accident, wet damage, theft, non-delivery, pilferage, hijack of consignments, mishandling shall be examined with ground inspections, to determine root cause analysis with MIS, claim assessment reports collectively in the form of logistics audit.
- **MWS (Marine warranty surveys):** Our inhouse practices of condition survey prior risk inception & post risk inceptions helps our customers to have an independent risk management of the high value / ODC (over dimensional cargo) movements conducted by the Insured so that reliance over logistics service provider is supervised with Insured's nominated risk assessment team having a worldwide presence with a supervised network. Not only marine cargo, but HULL insurance risk exposures are surveyed for risk assessment and risk management.
- **Technical engagements:** Uncertainty of the risk associated with the transit can be concluded

with marine experts. Assessing vessel's condition for SEA transit as a full chartered load on behalf of the Insured, Risk assessment of cargo from packing, handling, lifting, securing, transit and final delivery methodology shall be discussed with the logistics team. Vessel selection, stowage and securing methods can be jointly discussed with the User's logistics team for a safe transit, dispatch and delivery coverage after assessing the risk on desktop with a virtual or F2F engagement and / or a ground visit.

- **Transit Telematics:** With the government's constant agenda of upgrading to digitalized operations by introducing ULIP and NITI Aayog mode of operations, not having a visibility of transit will hamper your logistics operations. IOT and SAAS (software as a service) based products incorporating the design of a cost efficiency and loss mitigation system can help enhance delivery with safe operation. Additionally, a 24*7 risk control is recommended to effectively monitor and mitigate theft / pilferage prone dispatches to ensure a safe transit delivery. Be it a temperature-controlled cargo, expensive cargo in transit or liquid bulk cargo in lorry tankers, it is essential to mitigate the risk and losses that might occur due to accidents caused by fatigue, unexplained conditions, or theft. We have case studies of successful recovery of stolen goods with our telematics services.

Liability

The growing adoption of technology in organizations has not only led to crucial data being stored and processed on digital platforms but also facilitated the automation of operations, thereby enhancing business efficiency. However, this shift also amplifies cyber risk, exposing sensitive information to potential threats and rendering organizations vulnerable to financial losses, reputational damage, and legal liabilities. As organizations delve deeper into the digital realm, fortifying cybersecurity measures becomes imperative to safeguard operational integrity and protect critical data from unauthorized access or breaches.

- **Phishing Simulation:** Experience cutting-edge phishing simulation tests to fortify your organization's defenses against cyber threats. You can enable phishing attack simulations to educate your employees on identifying and handling potential risks. Through engaging and interactive scenarios, you can raise awareness and equip your team with the necessary skills to detect and thwart phishing attempts.
- **Awareness Campaigns:** With Cyber Awareness Campaigns, you can go beyond just educating organizations about cybersecurity. The campaigns are meticulously designed to empower your team with essential best practices, insights into global incident trends and a comprehensive understanding of potential risks. Interactive designs help you captivate and engage your employees, fostering a cyber-aware culture within your organization. Customized campaigns can perfectly align with your unique needs and requirements and stay informed and vigilant.
- **Incident Response and Readiness:** A bespoke service that fortifies organizations with robust processes and clear communication channels for proficient cyber-incident management. This

recommendation not only trims down the incident response time but also facilitates prompt, accurate action within the crucial initial hours. By meticulously assessing your organization's incident response policies and sculpting response systems in alignment with global industry benchmarks, this ensures you are thoroughly prepared to tackle the evolving digital threat landscape.

- **CXO's Session:** CXO's Session service provides immersive training sessions, personalized coaching & interactive discussions to empower your CXOs with cybersecurity knowledge that aligns with your business objectives. The subject matter experts recommend strategic guidance and in-depth insights into the ever-evolving threat landscape, translating technical jargon into practical language. Regular cybersecurity forums facilitate peer-to-peer learning and benchmarking against industry standards. CXO- focused approach ensures a cyber-aware leadership team that drives your organization's success securely into the future.
- **Weekly Threat Intelligence Bulletin:** Stay ahead of cyber threats with the Weekly Threat Intelligence Bulletin. We meticulously curate this comprehensive bulletin, providing timely insights on emerging threats, vulnerabilities, and attack trends. Delivered directly to your inbox, it recommends proactive advantage by promptly identifying potential risks. With continuous updates and ongoing support, you can confidently adapt your Defence strategies to combat the most sophisticated threats. It enables you to make informed decisions and protect your organization from emerging threats with Weekly Threat Intelligence Bulletin.
- **Email Security:** Safeguard your organization's communication channels with the Email Security solutions. We recommend robust measures to protect against phishing, malware & other email-borne threats. The advanced email filtering and authentication technologies prevent malicious emails from reaching your users inbox. Implementing encryption protocols to ensure the confidentiality of sensitive data in transit is a good idea. With real-time monitoring and threat intelligence, email security measures provide proactive Defence, detecting and blocking suspicious activities promptly. You can protect your organization's reputation and sensitive information with comprehensive Email Security measures, ensuring a secure and reliable email environment.
- **Agent-less Patching:** Agent-less patching platform for companies and MSMEs who want a rapid solution to distribute critical security updates and vulnerability fixes without causing system downtime. The patching platform not only assists with patch deployment, but it also enables your system administrator in understanding the patches, Adjustments & impact of the patches on the system. Before applying the patch, the software generates a warning if the system requires downtime or a reboot. You can experience a hassle-free patching process with the platform recommending enhanced security for your organization.
- **EDR/MDR Services:** Elevate your organization's cybersecurity capabilities with the Endpoint Detection and Response (EDR) and Managed Detection and Response (MDR) services. These advanced solutions provide continuous monitoring, rapid threat detection & effective incident response, safeguarding your digital assets in real-time. With EDR, proactively detect and

respond to threats at the endpoint level, while MDR service offers 24/7 monitoring and expert support. You can strengthen defenses against the most sophisticated cyber-attacks with EDR/MDR services, ensuring a resilient and secure digital environment.

- **All-in-one Operating System:** All-in-One Operating System is a true game-changing platform that provides a fortified desktop environment to foster secure collaboration and centrally managed cybersecurity resilience. Inbuilt endpoint security serves as a vigilant guard, blocking potential dangers. Effortless IT management provides with a user-friendly interface, leading to significant cost savings in IT infrastructure. It provides in-built end-point security, automated updates and patches along with extensive device reports. Organizations can unlock a secure and prosperous future by embracing the All-in-One Operating System in their IT infrastructure.
- **Cyber Risk Management & Compliance Dashboard:** Gain a clear understanding of your organization's cyber risk exposure with Cyber Risk Management & Compliance Dashboard. This powerful tool assesses your risk posture, quantifies potential financial Impact & evaluates compliance with industry standards and regulations. Armed with this information you can make informed decisions to prioritize cybersecurity investments and ensure compliance with relevant laws and regulations. The intuitive dashboard provides a comprehensive view of your cybersecurity performance enabling data-driven decision-making. This solution enables organizations to stay ahead of threats and ensure a resilient cybersecurity posture.
- **Security Score Card:** Track your organization's cybersecurity performance with a dynamic Security Score Card solution. This comprehensive rating provides a clear overview of your security posture, highlighting areas that require attention and improvement. It empowers data-driven decisions, allowing you to focus on strengthening key areas. Identify potential risks and compliance gaps with industry standards and regulations. With actionable insights, you can prioritize cybersecurity investments effectively, ensuring a robust and resilient Defence against cyber threats. This Security Score Card solution can be your strategic tool to proactively elevate your cybersecurity posture.
- **VAPT:** Enhance your organization's cybersecurity defenses with the Vulnerability Assessment and Penetration Testing (VAPT) service. Skilled professionals conduct rigorous assessments, simulating real-world attacks to identify potential vulnerabilities in your digital infrastructure. With detailed insights, you can fortify your defenses and proactively address weak points before malicious actors exploit them. This service goes beyond identifying vulnerabilities, you also get actionable recommendations to mitigate risks effectively. Organizations can be one step ahead of cyber threats, ensuring the security and resilience of your critical assets with the comprehensive VAPT service.

Engineering

In engineering risk management, it's vital to adopt a holistic approach that extends beyond immediate concerns to proactively tackle potential risks and uncertainties. Drawing upon

considerable expertise in claims handling and risk evaluation, a robust and customized protection strategy can be ensured.

Construction endeavors face a myriad of risks such as floods, cyclones, impact damage, fires, theft, and collapse. However, the adverse effects of these risks can be mitigated through the implementation of extensive loss prevention measures specifically tailored for engineering projects.

- **Engineering Loss Prevention Exercise (ELP):** To effectively manage losses in Engineering Risk, fostering a culture of loss prevention is crucial. It's widely acknowledged that each construction project is distinct, presenting specific challenges related to geography, geology, occupancy, and construction methodology, which in turn result in unique associated risks. To cater this challenge a specific risk management framework which deals about the unique requirement of each project could be created for the loss prevention with reference to some parameters of distinctive research and industries best practices.
- **Drone Solutions for Linear Projects:** In recent years, the construction industry has undergone significant changes due to the introduction of drone-based construction solutions. These cutting-edge technologies are transforming the planning, design, and execution of construction projects. A major benefit of drone technology in construction is its capacity to conduct aerial surveys, providing extensive coverage and detail. Drones, equipped with advanced cameras and sensors, can rapidly capture precise images and data, offering project managers valuable insights into site conditions. This data can facilitate project planning, cost estimation and design optimization by providing a comprehensive understanding of the project's parameters.
- **CPM - Fleet & Fuel Management:** An advanced GPS-equipped sensor is available to precisely measure direct fuel consumption, evaluate engine efficiency, and detect potential tampering of diesel engines in both mobile vehicles and stationary machinery. This solution enables real-time alerts for service reminders and critical health issues, facilitating prompt resolutions and enhanced utilization. Additionally, it offers valuable insights into machinery and equipment performance through comprehensive analyses, resulting in optimized inventory usage and increased efficiency.

Health

We highly recommend exploring proactive and preventive healthcare solutions, which can make a significant difference in maintaining good health. Recognizing that majority of in-patient department (IPD) admissions could be prevented with timely interventions and regular healthcare, it is important to focus on health, not just during illness.

- **Pioneering Digital Platform:** We recommend exploring digital health innovations offered by industry leaders, which provide cutting edge health solutions through the IL TakeCare (ILTC) app. Our platform has transformed the way health services are delivered by introducing a fully digital and cashless Outpatient Department (OPD) and Wellness Program.

- **Health Advisory Services:** We recommend a suite of health advisory services on the IL TakeCare app. Users can access health risk assessments, diet and exercise trackers, health parameter tracking and trends and sleep, meditation & hydration reminders. In addition, the platform recommends a feature to upload health records up to 1GB, and provides informative health blogs.
- **IL TakeCare App:** IL TakeCare app is a One-Stop-Solution for users with insurance needs. This robust user engagement is a testament to the high-value features that the app provides. Unique to the app is the innovative self-health assessment feature, which includes Face scan technology that can measure blood pressure, heart rate, cardiac variance, and SpO2 levels. The platform provides seamless teleconsultations with medical practitioners and specialists, and even recommends access to mental wellness experts to the insured. The facility for cashless OPD services and the efficient claim settlement process further enhance user experience. By encapsulating a wide range of state-of-the-art health services and solutions, the IL TakeCare platform revolutionizes corporate health management and serves as a comprehensive digital health solution.

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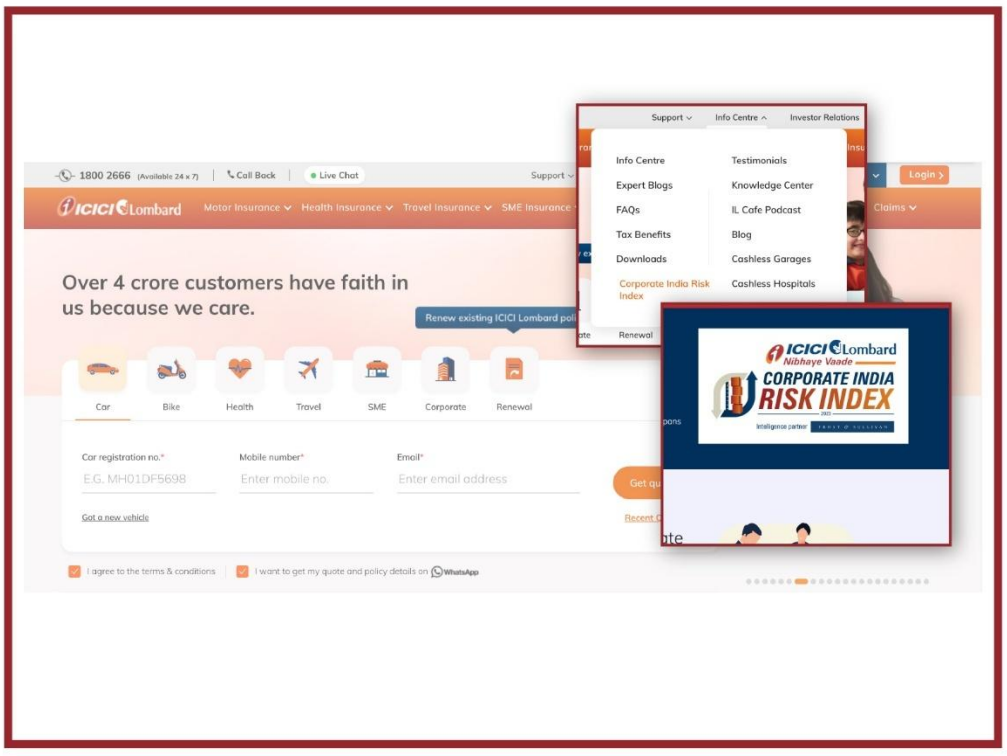

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