

CHETNA

Issue No. 1 | October 2020 | CIIF-SEEDS Disaster Monitor for Eastern States

A compendium of strategy and solutions to help people and business prevent, prepare better for and recover faster from disasters.

Disaster can strike anyone, anytime and anywhere. Who would have ever imagined in January 2020 that a small outbreak in China's Wuhan would become a global pandemic with a devastating impact on lives and livelihoods across the world?

As economies and people reeled under the impact of the outbreak of Coronavirus, Governments and people redoubled their efforts to find ways to mitigate the loss of lives and livelihood.

The CII Foundation, set up in 2011 to undertake a range of development and charitable initiatives pan-India by facilitating industry partnership for inclusive development, took the lead in providing relief and rehabilitation. Working across 28 states it impacted over 80 lakh people through its various initiatives working closely with Government, industry and communities of people.



To help the industry be better prepared for disasters, CII Foundation is happy to present the **CIIF-SEEDS Disaster Monitor**, which is a region-specific knowledge paper with a focus on select disaster-prone states within the region. The update captures valuable information on a region, its risks and vulnerabilities, especially for industry, and workable solutions. A section of international efforts in disaster management will throw light on practical solutions and practices that may be useful for the industry in India.

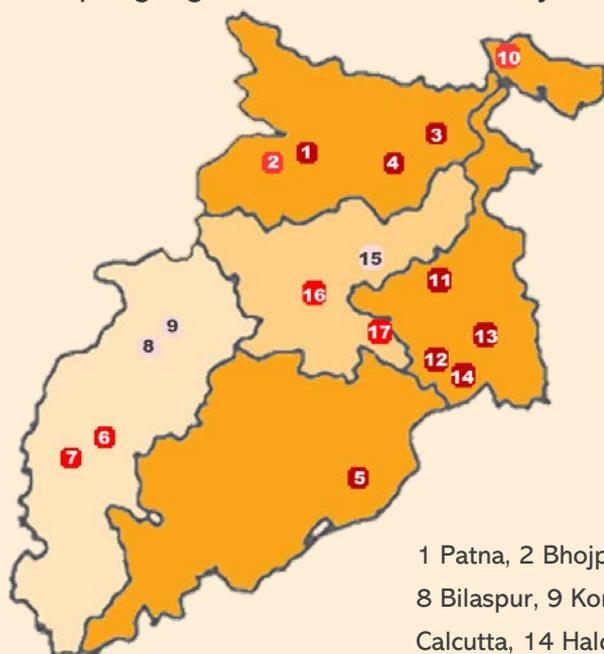
The **CIIF-SEEDS Disaster Monitor** will enable the industry to assess the potential risks better and prepare a strategy to cope with disasters with minimal loss of lives and negative impact on the business. In the new world that is emerging from Covid-19, it will not be 'business as usual'. Preparing for the new world on all fronts will be a prerequisite for sustainable development and success.

Hope you find the read useful and we look forward to your feedback.

Chandrajit Banerjee,
Managing Trustee, CII Foundation

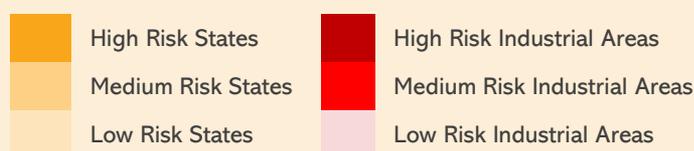
Hazard Map – Eastern Region

The map highlights hazards vulnerability of 17 key industrial regions⁶.



➤ All key industrial areas in Bihar and West Bengal and Raipur face high risk of flooding.

➤ 13 of the 17 industrial regions have a high number of COVID cases.



1 Patna, 2 Bhojpur, 3 Purnia, 4 Munger, 5 Cuttack, 6 Durg, 7 Raipur, 8 Bilaspur, 9 Korba, 10 Siliguri, 11 Durgapur, 12 Kharagpur, 13 Calcutta, 14 Haldia, 15 Bokaro, 16 Ranchi, 17 Jamshedpur

Hazard Profiling – Eastern Region

The eastern region falls on the boundary of a tectonic and is affected by earthquakes caused by high seismicity. In addition, the region has several perennial and non-perennial rivers and a long coastline making it highly prone to cyclones and flooding caused by heavy rainfalls. These present huge challenges to key industries in the region. The following table illustrates the major hazard vulnerability of states in the eastern region. The data is based on the report from the National Disaster Management Authority of India⁷.

State/UT	Earthquake	Cyclone	Flood	COVID-19 Pandemic	Composite hazard
Bihar	High	Low	High	High	High
Chhattisgarh	Low	Low	Low	Medium	Low
Jharkhand	Medium	Low	Low	Medium	Medium
Odisha	Low	High	Medium	High	High
West Bengal	Medium	High	High	High	High

Case of flooding in Odisha: The Cyclone Phailin crossed Odisha on the 12th of October 2013 causing heavy rainfall leading to floods and winds causing large scale structural damage. The flooding destroyed 10,000 km of roads whose cost for reconstruction was estimated at Rs.700 crores. Life and livelihood of over 1.30 crore people were affected. The fisheries sector was severely affected with over 44,806 fishermen units incurring damages of over Rs.600 crores. Over 2,603 MSMEs engaged in handloom/handicraft activities, agro-based activities, metal products, ready-made garments and embroidery, paper products, agarbatti manufacturing etc. incurred losses of over Rs.18 crores. The loss of livelihood resulted in an increase in migration to other states, taking loans from money lenders (at 10% p.m. interest) and pawning of family assets.

BIHAR



34.46 lakh Micro Small and Medium enterprises



53.07 lakh employed in MSMEs



Rs.1.19 lakhs average investment in fixed asset per enterprise



More than **83 Lakh** people affected by floods in over **16 districts** of Bihar in 2020.



68 lakh hectares i.e. **73%** of area and **28 districts** in Bihar are flood prone



Over **Rs.10,000 crores** worth economic loss between 2009 and 2018 due to flooding.

Bihar is predominantly an agrarian economy with 80% of the population employed in agricultural production. Food processing, dairy, sugar, manufacturing, and healthcare are some of the fast-growing industries in the state.

The state is highly vulnerable to flooding, high-velocity winds, earthquakes, and lightning presenting huge challenges to the growth of industries. Over 76% percent of the population in north Bihar are living under the recurring threat of flood devastation.⁹

Over 3/4th of Bihar's area and population lie in the natural floodplains of the Ganga and its tributaries. Vulnerability to flooding in Bihar lies in its flat topography, wide variation in flow in Himalayan rivers (increases by 50 times during monsoon), excessive rainfall (1200 mm annually), rainfall concentration between June and August and high sediment loads. The plains of Bihar and adjoining Nepal are drained by rivers that carry high discharge, which then fall out onto the plains causing floods.⁹

Industrial Risk Profile : Bihar⁸

Large scale infrastructure development, such as roads and bridges and a large base of low-cost industrial labor, make Bihar a potential investment destination for a wide range of industries.

Agriculture-based and food processing industries can be an important driver of economic growth in Bihar. High amounts of cultivation of fiber, oilseeds, fruits and vegetables, sugarcane along with food grains give an enormous opportunity for agriculture-based and food processing industries across the state. Moreover, the large population of animal resources adds to the prospect of agriculture-based industries.

But enterprises need to prepare themselves to overcome recurrent floods in the state. Annual flooding in Bihar accounts for about 30-40% of the flood damages in India and 22% of the total flood affected population in India is reported to be located within the state of Bihar.

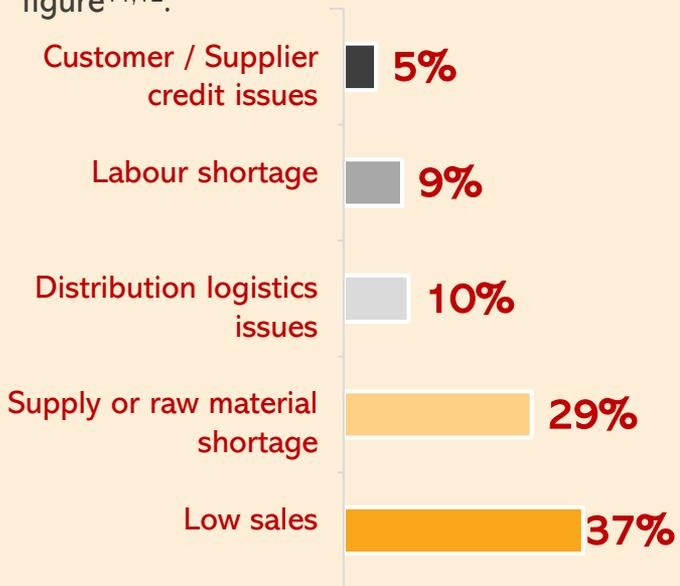


Flood warning provided in Bihar

Micro Small and Medium Enterprises and COVID

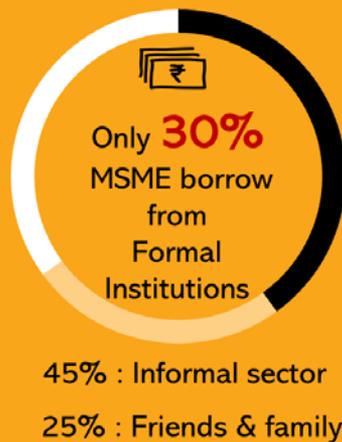
Challenge

In a recent study by KREA University on the impact of COVID on MSMEs, over 50% of enterprises reported that they were uncertain about the future while 19% stated that they might not be able to recover completely or must close their enterprise¹⁰. This uncertainty among enterprises stems from the challenges they are presently facing as detailed in the figure^{11,12}.



- Over 57% of MSMEs reported not having any cash reserves to survive. In addition, the availability of employees in several enterprises has been negatively impacted due to the lockdown.
- Over 37% of the workers in the MSME sector are migrants and most of them have returned to their hometowns during the lockdown, creating a labor shortage.

 **51.80%**
Workers were in sectors partially/ fully closed due to COVID



1 in 4 MSMEs face threat of closure



Solution

MSMEs are also adopting different strategies to overcome the challenges posed by COVID, some of them are listed below.

Different Marketing & distribution strategies (Ex. Home delivery, E-commerce)	New products (Ex. Focussing on essential goods)	Offering credit to end-users
New line of business (Leveraging existing assets of customer base)	New technologies (Ex. Online payments)	Apply for Govt. crisis assistance for business and workers.
Work from home policies	Social distancing and sanitizing workspaces	New lines of communication with customers and vendors

Micro Small and Medium Enterprises and Flooding

Challenge

The direct and indirect impacts of COVID and natural disasters are devastating to MSMEs. MSMEs are highly vulnerable as they are relatively resource-constrained and less resilient. Having a sound understanding of the adverse impacts of flooding on MSMEs is useful for entrepreneurial resilience. MSMEs are vulnerable to flooding in four major areas:

1. **Capital** : Cashflows tend to fall with enterprises unable to operate but expenditures increase in managing challenges posed by flooding.
2. **Labor** : Finding manpower is difficult as workers are the immediate victims of the flood.
3. **Logistics and Supply Chain** : MSMEs must find alternative logistic support when flood severely damages the public infrastructure system.
4. **Demand** : During any disaster there is a spurt in the demand for basic commodities and a dip in demand for non-essentials.

MSME resilience requires partnerships and cooperation among the firms, government and other private organizations.

Impact of major Floods on MSMEs in India¹³

On an avg. 20,000 –
30,000 MSMEs are affected

Rs.1,000 crores worth machinery
and building damaged

1.5 to 2 lakh workers in
MSMEs affected

20 -30% MSMEs unable to recover
completely from the disaster

State authorities undertake pre-monsoon activities such as response preparedness, fumigation to prevent diseases caused by flooding and clearing drains to prevent clogging. This year, pre-monsoon work has not been taken up on schedule with physical and economic resources diverted towards COVID. Also, migrant workers usually engaged for jobs have gone home post the lockdown. This reality necessitates additional preparedness among enterprises to tackle the challenges that will be caused by monsoon ranging from flooding, bottlenecks in transportation, damage to inventory, and machinery while taking cognizance of the various aspects of COVID related challenges and employee safety and support.

Solution: Business continuity planning

Business continuity (BC) refers to maintaining business functions or quickly resuming them in the event of a major disruption, whether caused by a fire, flood, or malicious attack by cybercriminals. A business continuity plan outlines procedures and instructions an organization must follow in the face of such disasters. It covers business processes, assets, human resources, business partners and more.

Solutions for MSMEs to combat Floods

Taking inputs from the UN Global Compact Principles on Environment¹⁴ and the UNDP assessment of impact of disaster on MSME¹⁵ the below table lists some key solutions for risk assessment and management during a disaster such as flooding.

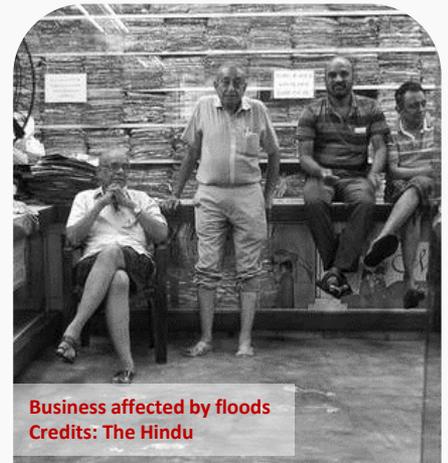
AREAS	SUGGESTIVE SOLUTION
EMPLOYEE	<ol style="list-style-type: none"> 1. Train employees and provide them with resources to respond during a flood at the factory/office and in their homes. 2. Develop structured benefits, insurance protection at the least for critical employees in disaster-prone areas.
CONTRACTS	<ol style="list-style-type: none"> 1. Have strong and formal contracts with vendors and corporate buyers, include the Force Majeure clause. 2. Explore the MSME SAMADAAN scheme and take advantage when payments are delayed from buyers.
BUILDING CODE	<ol style="list-style-type: none"> 1. Adopt flood-resistant building techniques and materials. Have a flood cognizant effluent and hazardous chemical management plan. 2. Have machinery placement and floor plans that consider potential flooding.
POST FLOOD ACTION PLAN	<ol style="list-style-type: none"> 1. Have standards and equipment for drying and debris cleaning. 2. Have guidelines and mechanism for draining flooded premise.
SUPPLY CHAIN PLAN	<ol style="list-style-type: none"> 1. Have a plan for the delivery of goods considering the potential disasters and put in place communication protocols to be implemented with corporate customers if a disaster occurs. 2. Adopt alternate marketing channels using digital means and e-commerce platforms.
UTILITY PLAN	<ol style="list-style-type: none"> 1. Have a disaster safety kit that includes stock of battery-operated lights and generator back-up especially during the potential flood periods.
BUSINESS CONTINUITY PLAN	<ol style="list-style-type: none"> 1. Put in place a plan for man, material, and goods pre and post a disaster. 2. Have a trained internal first response team. 3. Enforce safety and distancing norms during an evacuation. 4. Conduct checks for assessment of structural, electrical, and effluent discharge safety. 5. Put in place SOP for disinfecting premises and damage evaluation process.
FINANCIAL PLAN	<ol style="list-style-type: none"> 1. Have a structured plan to formalize borrowings by creating a credit history with financial institutions. 2. Adopt digital payments. 3. Choose suitable insurance based on the disaster vulnerability of the district where the MSME is located.

Impact of FLOOD on Business

Most retail businesses operate from the ground floor or in single-story structures leading to high yearly costs incurred in repairs. Businesses suffer damage to machines and tools, refrigerators, escalators, electrical switches, and wiring. Raw materials, inventory, and finished products also sustain extensive damage every year. Most losses were caused by damage to fixed assets and infrastructure.

A study on Mumbai and Chennai noted that only 37% of businesses had insurance against natural calamities and only 50% of the insurance claimed was received.¹³ Damage to equipment was greater than that of buildings or inventory. Many firms also lost soft/hard copies of documents when electronic equipment, such as computers, were washed away. Some key aspects to be noted while choosing insurance and making claims are listed below:

- It is important to choose a comprehensive motor insurance products. Look for policies that provide engine protection cover.
- Building structure insurance does not pay for articles inside. Select a policy to cover loss and damage to machinery and inventory.
- Only if the policy has a zero depreciation cover, the replacement cost is borne by the insurance company, else only a depreciated cost of the machinery or part will be provided.
- Avoid starting motor vehicles immediately post-flooding, it may damage the engine, and the same is mostly not covered in the insurance.
- Use technology to your advantage to click Photos and videos as evidence of the damage, even if civic authorities move them away.
- Some insurers allow for claim intimation and photos of the damage to be uploaded using mobile applications. Check for the same and take advantage as most policies insist on intimation of loss within seven days of occurrence.
- Insurers note placement of insured articles and the water level mark caused by flooding and the precautions taken before ascertaining claim.



Estimated losses suffered by businesses due to flooding¹³

Avg. loss due to Damages:

- Premise/equipment: Rs.1.7 lakhs
- Product: Rs.1 lakh

Avg expenditure post flood:

- Disinfecting premises/ removing debris: Rs.46,000
- Other costs: 1 lakh

Revenue loss: Rs.60,000

Recovery time: 1 to 10 Days

The India Disaster Resource Inventory: An online database of equipment & resources with Govt. machinery at the Central & State.

<https://idrn.nidm.gov.in/>

International Effort on Disaster Management

Government builds Business Continuity Planning Course : Thailand

Representatives from small and medium enterprises (SMEs) have joined government officials from the Ministry of Industry, Office for Small and Medium Enterprise Promotion (OSMEP) and the Department of Disaster Mitigation and Preparedness (DDPM) to take part in a course to build capacity for developing and promoting business continuity planning (BCP) for SMEs in Thailand. The course was developed by ADPC with the support of the JTI foundation. Government representatives feel that BCP for SMEs will pave the way for speedy post-disaster economic recovery in the future and ensure that losses for small business owners are less severe. "Resilient businesses are crucial parts of safer communities and societies. The long-term economic efficiency of investment in disaster risk reduction has become very evident in recent years," says Mr. Aslam Perwaiz, Head of ADPC's Disaster Risk Management Systems Department.

MNC sets up Zurich Flood Resilience Alliance

Zurich a global multi-line insurance provider established the Zurich Flood Resilience Alliance, a multi-sector partnership focusing on finding practical ways to help communities strengthen their resilience to floods globally was launched in 2013. The organization uses its expertise as a global insurer to help customers and communities reduce the devastating impacts of floods - even before a flood hits - and build community flood resilience in a more integrated way. Besides fundraising, they encourage effective public policy and develop sound practices and policies among organizations in support of flood resilience.

Business Continuity Plan in Action : JAPAN¹⁵

Suzuki Kogyo Co. Ltd in Sendai city, Miyagi prefecture, has 67 employees and is engaged in the collection and transport of industrial waste, recycling, and water purification and provision. The tsunami washed away most machinery, vehicles and other equipment while the incinerator and water processing facilities were buried in sludge and rubble. Despite the overwhelming damages to the business, Suzuki Kogyo was able to recover all its business operations within one month, thanks to the BCP it had begun to draft in 2008. Suzuki Kogyo completed the first version of its BCP in 2009, held in-house training with outside experts, and carried out simulations and drills. As a result, the company was able to smoothly evacuate staff from the processing plant and quickly confirm the safety of all employees, including those who were out of the office with customers. Furthermore, the company contacted contractors with satellite phones, as indicated in the BCP, who came to assess the necessary repairs the next day. All operations were completely restored within a month.



SEEDS (Sustainable Environment and Ecological Development Society) is a not-for-profit organization that enables community resilience through practical solutions in the areas of disaster readiness, response and rehabilitation.

Since 1994, the organization has worked extensively on every major disaster in the Indian subcontinent – grafting innovative technology on to traditional wisdom. It has reached out to families affected by disasters and climate stresses; strengthened and rebuilt schools and homes; and has invariably put its faith in skill-building, planning and communications to foster long-term resilience.

SEEDS is also India's first agency to be certified for the global Core Humanitarian Standards – an international certification system for quality and accountability in humanitarian response. SEEDS completed 26 years of outstanding service to humanity in 2020 and is re-anchoring its approach to building resilience through innovation. It continues to empower the most vulnerable across Asia to build a better future.



Natural and man-made disasters cause immense loss of lives and property. The CII has been at the forefront of supplying relief and rehabilitation by involving and engaging the Indian industry to contribute and support the affected communities. CII also works with various agencies to help communities across India manage major disasters.

The CII Foundation, a trust set up by CII, anchors the disaster relief and rehabilitation work with the support of the 68 CII offices across the country and the support of the industry members. It played a crucial role in providing relief and rehabilitation across India during disasters such as the floods in Kerala and Tamil Nadu, benefitting millions of people.

Over 80 lakh people residing in 28 states have been positively and directly impacted by CII during the Covid-19 lockdown and as the lockdown was gradually lifted across India.

To know more, visit www.ciifoundation.in



Write to us at chetna@seedsindia.org

List of organizations working on Disaster Management in Bihar

1. Name: SEEDS (Sustainable Environment and Ecological Development Society)
Expertise / Focus: Disaster Risk Reduction and developing disaster resilient communities.
Contact: 91-11-26174272, www.seedsindia.org
Email: Write to us at chetna@seedsindia.org
2. Name: Bihar State Disaster Management Authority, Govt. of Bihar
Expertise / Focus: Govt. Dept. working on programs for disaster relief.
Contact: 0612-2522032, info@bsdma.org, www.bsdma.org
3. Name: State Control Room Number, Govt. of Bihar
Expertise / Focus: Govt. Dept. working on programs for disaster relief.
Contact: 91-612-2294204, 2294205
4. Name: Flood Management Information System, Govt. of Bihar
Expertise / Focus: Implementing Flood Management Information
Contact: 0612-2256999, fmiscbihar@gmail.com, www.fmis.bih.nic.in
5. Name: Ganga Flood Control Commission (GFCC), Govt. of Bihar
Expertise / Focus: Govt. Dept. working on programs for flood management.
Contact: Central Public Information Officer, (0612)-2202643, 9402174858.
ajitkumar-cwc@nic.in, gfcc.bih.nic.in
6. Name: Regional Meteorological Centre, Kolkata, India Meteorological Department, Govt. of India
Expertise / Focus: Analyze and interpret meteorological observations and issue forecasts.
Contact: 022-22150517, 022-22174707, portalmck.gov.in,
portalmck.gov.in/acwc/monsoon/view

To identify NGOs recognized by Govt. please search on this link:

<https://ngodarpan.gov.in/index.php/search/>



A lady walking on flooded roads in Bihar.



Floods has washed away roads in Bihar

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