

## ECOWRAP

**FOR A FEW DOLLARS MORE!:THE IMMEDIATE NEED TO MITIGATE NATURAL DISASTERS IN INDIA THAT ARE NOW BECOMING MORE OF A TREND THAN A BLACK SWAN EVENT**Issue No. 46, FY22  
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**The Blockbuster Clint Eastwood starrer 1965 Hollywood flick “For a Few Dollars More” aptly summarizes the spate of increased need towards understanding and mitigating risks globally as well as in India.**

The understanding of risk has undergone significant evolution since the global financial crisis. Previously, risk meant management’s focus was on deviation from expected values or outcomes, while tail events were considered as anomalies. However, in the last two decades, tail events that were expected to happen once in 1000 years or so, are now occurring with increased frequency / amazing alacrity with each such event setting new records of economic stress. These events in statistical parlance are commonly called fat-tail events and India is no exception to the alarming phenomenon. India, in fact, is one of the most disaster-prone countries in the world. The locational and geographical features render it vulnerable to a number of natural hazards. India has been ranked at 3rd position, after US and China in recording the highest number of natural disasters since 1900. **India recorded 756 instances of natural disasters (Landslide, Storm, Earthquake, Flood, Drought, etc.) since 1900 with 402 events occurring during 1900-2000 and 354 during 2001-2021, indicating the preponderance of tail events off late. Since 2001, a total of 100 crore people have been impacted and nearly 83,000 people have lost lives due to these disasters.** If the losses are adjusted with current prices, the losses comes out to a staggering Rs 13 lakh crore i.e. 6% of India’s GDP. Also, there is huge gap in reporting of losses (loss data of only 193 events are available for India) and there are problems in existing estimation methodologies too.

Recently, the intensity and frequency of natural calamities, especially cyclones, have increased manifold in India. For example, frequency of cyclones in west coast (Maharashtra, Gujrat) is increasing, which had not been witnessed in the past. The real problem is that the protection gap between economic loss and insured gap is significant. For example, **in India, only around 8% of the total losses are covered, so, there is around 92% protection gap during the period 1991 to 2021. So, early intervention is needed to close the protection gap, which are in all lines (life & Non-life) of insurance.**

Going by the 92% protection gap in India, thus an average Indian is only insured of roughly 8% of what may be required to protect a family from financial shock following the death of the breadwinner. This means having savings and insurance of just Rs 8 for every Rs 100 needed for protection. Lack of awareness around what is an adequate life insurance cover for an individual increases the mortality protection gap.

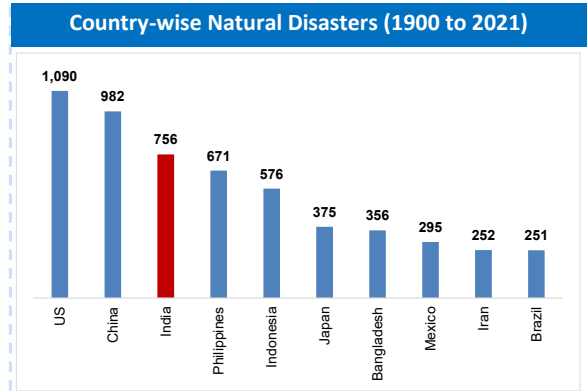
A public-private solution, say a **National Disaster Pool**, for hedging natural disaster risks, in close coordination with the insurance sector might offer many benefits over government induced crisis loans and grants. If we consider 2020 floods in India, the total economic loss was of \$7.5 billion (Rs 52,500 crore) but insurance available was only to the magnitude of 11%. If Government would have insured it, then the premium for the sum assurance of Rs 60,000 crore would have been only in the range of Rs 13,000 to Rs 15,000 crore.

**Another, and relatively new, trend is the rapid increase in solar power installations.** The solar panel market is still relatively nascent, and standards and regulations on the quality and installation are not yet adequately formulated. **These may not be immediately visible in short term but natural disasters can destroy the functionality of a panel entirely.** Associated insurance claims can be huge. For example, in May 2019 a single hailstorm brought forth a USD 70 million insurance pay-out for a Texas solar farm. Solar energy is a key technology towards our transition to be a low-carbon footprints economy. **The vulnerability of solar panels, in terms of loss potential, is an area where the insurance sector can play an important role in helping society mitigate the effects of climate change.**

The lessons from COVID-19, from the need for improvements in public health and business preparedness to the availability of new data on mitigation measures and business impacts, provide an opportunity to reduce future pandemic impacts and enhance insurability. The insurance sector and governments need to actively engage and discuss how best to address the potential contingent liabilities from pandemic risk. This would also imply relooking at credit underwriting standards by incorporating outlier observations often ignored by modelling data. Meanwhile, we notice with elation that the level of insurance has indeed jumped post pandemic indicating that the understanding of obtaining insurance cover is now increasing across the typical Indian households and we believe this percolates at the Government level too.

**NATURAL DISASTERS IN INDIA**

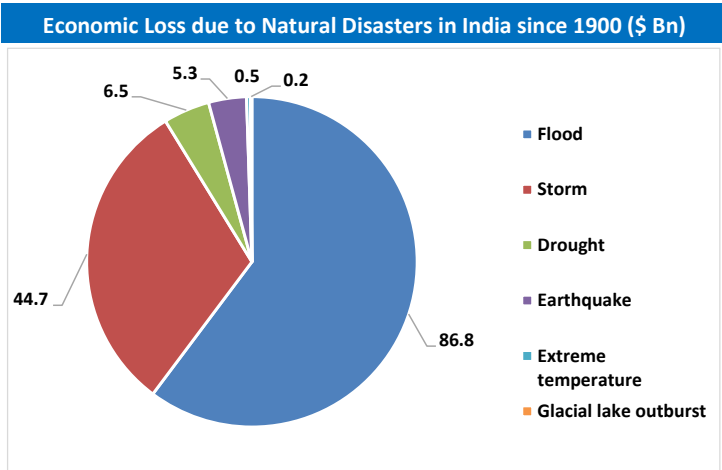
- ◆ A natural disaster is an event of nature that causes sudden [disruption to the normal life of a society and causes damage to property and lives, to such an extent that normal social and economic mechanisms available to the society are inadequate to restore normalcy. Viewed in this manner, a host of natural phenomena constitute disasters to a society, whether they are related to an occurrence in micro environment or not. In macro terms, the disasters, which cause widespread damage and disruption in India, are drought, flood, cyclone and earthquakes.
- ◆ India is one of the most disaster-prone countries in the world. The locational and geographical features render it vulnerable to a number of natural hazards. India has been ranked at 3rd position, after US and China in recording the highest number of natural disasters since 1900. India recorded 756 instances of natural disasters (Landslide, Storm, Earthquake, Flood, Drought, etc.) since 1900 with 402 events occurring during 1900-2000 and 354 during 2001-2021, indicating the preponderance of tail events at an alarming frequency and each such events setting new records of economic stress. These events in statistical parlance are commonly called fat-tail events. Since 2001, a total of 100 crore people has been impacted and almost 83,000 people died due to these disasters since 2001.
- ◆ By disaster type, India is marred mostly with floods. Almost 41% of disasters occurred in the form of floods followed by storms.
- ◆ Apart from human losses, there is huge economic loss due to these disasters. Since 1900, India has suffered an economic loss of \$144 billion (where the loss is reported) with largest loss from floods (\$86.8 billion) followed by storms (\$44.7 billion). If these losses are adjusted with current prices the losses comes out to be around \$187 billion (Rs 13 lakh crore). Still there is huge gap in reporting of losses (loss data of only 193 events available out of 756 for India) and there are problems in existing estimation methodologies also.



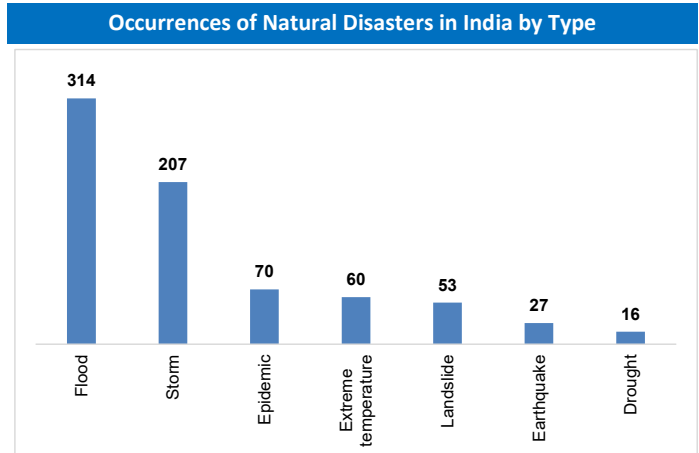
Source: EM-DAT; SBI Research

Year	Occurrences	Deaths	Total Affected (in crore)
<b>1900-2000</b>	<b>402</b>	<b>90,50,599</b>	<b>147.4</b>
2001	22	21045	2.7
2002	18	2991	34.2
2003	18	2251	0.8
2004	7	17737	3.4
2005	31	4997	2.9
2006	20	1431	0.7
2007	20	2236	3.8
2008	11	1808	1.4
2009	17	2204	1.1
2010	18	1344	0.4
2011	13	1038	1.3
2012	10	599	0.4
2013	12	7119	1.7
2014	16	1072	0.6
2015	22	3400	34.7
2016	16	1129	0.4
2017	18	2346	2.2
2018	23	1396	3.2
2019	14	2428	2.3
2020	11	2316	2.0
2021	17	1860	0.4
<b>2001-2021</b>	<b>354</b>	<b>82747</b>	<b>100.6</b>
<b>Total (1900-2021)</b>	<b>756</b>	<b>91,33,346</b>	<b>248.0</b>

Source: EM-DAT; SBI Research



Source: EM-DAT; SBI Research



Source: EM-DAT; SBI Research

**REDUCING PROTECTION GAP IN THE HINTERLAND**

- ◆ The occurrence of catastrophic events, largely floods, in the last few years has seen huge losses to property, in particular, to dwellings and small business. The protection gap stands out, both in terms of property not being insured and those not being adequately insured.
- ◆ The 2020 and 2021 will be remembered for the global health and economic crisis triggered by COVID-19. Apart from the pandemic, millions of people also experienced severe weather events. It is estimated that global economic losses from natural and man-made catastrophes were USD 202 billion (0.24% of GDP: World Average) in 2020, up from USD 150 billion in 2019. The US was hardest hit, with large stretches of the East Coast pummelled by hurricanes, wildfires in the west, and the Midwest struck by a record number of convective storms. Australia suffered too, from unprecedented drought, wildfire and storms. Asia suffered deadly and catastrophic floods from monsoon rains. There has also an increase in natural calamities and emergence of other risks such as the climate change risk.
- ◆ Global catastrophe protection gap (difference between economic and insured losses) is USD 113 billion in 2020. In otherwards, it is the financial loss generated by catastrophes not covered by insurance. In 2020, the global protection gap was around USD 113 billion, up from 87 in 2019, but down from the previous 10-year average of USD 143 billion.
- ◆ Recently, in India the intensity and frequency of natural calamities, especially cyclone, have increased manifold. Further the cyclones in west coast (Maharashtra, Gujrat) in increasing, which has not ben witnessed in the past. However, around 8% of the total losses are covered, so, there is around 92% protection gap during the period 1991 to 2021. So, early intervention is needed to close the protection gap, which are in all lines of insurance.
- ◆ In a number of countries (refer table in next page), insurance programmes or pools have been established, usually with the support of the public sector, to provide insurance coverage for certain risks and/or for certain segments of the population.

2020 Facts and Figures( in USD Bn)				
		2020	2019	10 Year Average
Economic Losses	A	202	150	222
% of Global GDP		0.24	-	0.26
Insured Losses	B	89	63	79
Global Protection Gap	C=A-B	113	87	143

Source: SBI Research, Swiss Re

Extent of Insured losses in recent natural disasters in India					
Year	Disaster Type	Location	Economic Loss (\$ Bn)	Insured Loss (\$ Bn)	Insured as % of Total
1991	Flood	Mumbai, Kerala, Gujarat	0.1	0.0	48%
1997	Flood	Himachal Pradesh.	0.1	0.0	9%
1998	Storm	Gujarat, Maharashtra	0.5	0.2	46%
1999	Storm	Orissa, Andhra Pradesh, West Bengal	2.5	0.1	4%
2001	Earthquake	Gurajat	2.6	0.1	4%
2004	Earthquake	Tamil Nadu, Andhra Pradesh, Kerala	1.0	0.0	0%
2005	Flood	Multiple States	3.3	0.8	25%
2005	Flood	Gujarat	2.3	0.2	7%
2006	Flood	Multiple States	3.4	0.4	12%
2009	Flood	Karnataka, Andhra Pradesh, Maharashtra	2.2	0.1	2%
2013	Flood	Multiple States	1.1	0.5	45%
2014	Flood	J&K	16.0	0.2	1%
2014	Storm	Andhra Pradesh, Orissa	7.0	0.5	8%
2015	Storm	Multiple States	0.9	0.1	12%
2015	Drought	Multiple States	3.0	0.4	13%
2015	Flood	Andhra Pradesh, Tamil Nadu	2.2	0.8	34%
2016	Storm	Tamil Nadu, Andhra Pradesh	1.0	0.2	20%
2016	Flood	Andhra Pradesh, Telangana	0.6	0.0	7%
2017	Flood	Mumbai, Thane	0.3	0.1	26%
2019	Flood	Multiple States	10.0	0.2	2%
2020	Flood	Multiple States	7.5	0.8	11%
<b>Total</b>			<b>67.6</b>	<b>5.7</b>	<b>8%</b>

Source: EM-DAT; SBI Research

- ◆ In many cases, these programmes have been established to provide affordable insurance coverage for risks that have been deemed uninsurable through private insurance markets – although in others, the programmes have been established in order to promote solidarity in terms of loss-sharing across regions.
- ◆ Among all the countries, France has had a nationwide insurance scheme since 1989. From 2016, insured losses have exceeded EUR 550 million each year, with the average annual loss standing at EUR 810 million, compared with an average annual loss of EUR 310 million in 2000–2015.

Catastrophe Risk Insurance Programmes: Cross Country				
Country	Programme	Risks covered	Type of insurance	Public sector involvement
Australia	Australian Reinsurance Pool Corporation (ARPC)	Terrorism	Reinsurance	ARPC is a government enterprise Backstop for losses above ARPC capacity and up to AUD 10 billion
Belgium	Terrorism Reinsurance and Insurance Pool	Terrorism	Co-insurance/ Reinsurance	Backstop for losses above TRIP capacity and up to EUR 300 million
France	Caisse centrale de réassurance (CCR)	Flood, earthquake, tsunami, landslide, mudslide, avalanche, subsidence and cyclonic winds; terrorism	Reinsurance	CCR is a government entity backed by an unlimited government guarantee
Germany	Extremus	Terrorism	Direct insurance	Backstop for losses above Extremus capacity and up to EUR 6.48 billion
Japan	Japan Earthquake Reinsurance (JER)	Earthquake, volcanic eruptions, tsunami	Reinsurance	Losses above a certain threshold are shared by the government and industry
New Zealand	Earthquake Commission (EQC)	Earthquake, volcanic eruptions, tsunami, landslides, storm/flood (for land only)	Direct insurance	EQC is a government entity backed by an unlimited government guarantee
Spain	Consortio de Compensación de Seguros	Flood, earthquake, tsunami, volcanic eruption, windstorm, terrorism	Direct insurance	CCS is a government entity backed by an unlimited government guarantee (although self-financed with its own capital and reserves)
Netherlands	Nederlandse Herverzekingsmaatschappij voor	Terrorism	Reinsurance	Backstop for losses above NHT capacity and up to EUR 50 million
UK	Flood Re	Flood	Reinsurance	Established by legislation
United States	National Flood Insurance Program (NFIP)	Flood	Direct insurance and risk management program	NFIP is administered by the Federal Emergency Management Agency (a government agency). The NFIP collects premiums and has the authority to borrow from the US Treasury. NFIP has transferred part of its risk to private reinsurance companies and capital market investors
	Terrorism Risk Insurance Program	Terrorism	Co-insurance	Federal government backstop through co-insurance for losses above industry loss of USD 200 million with cap on overall losses of USD 100 billion annual
China	China Residential Earthquake Insurance Pool (CREIP)	Earthquake	Direct insurance (co-insurance pool)	The co-insurance pool is reinsured by a state-owned reinsurer
India	Indian Market Terrorism Risk Insurance Pool	Terrorism	Co-insurance/ Reinsurance	The co-insurance pool is reinsured by a state-owned reinsurer
Russia	Russian Anti-Terrorism Insurance Pool	Terrorism (and SRCC)	Co-insurance/ Reinsurance	None
	Assistance for damaged and lost dwellings with priority of insurance indemnity	Fire, flood and other natural disasters		Losses are shared by the government and industry

Source: RESPONDING TO THE COVID-19 AND PANDEMIC PROTECTION GAP IN INSURANCE @OECD 2021, SBI Research

### WHAT NEEDS TO BE DONE?

- ◆ India is a hugely under-insured country, compared to global peers. Although third party insurance is mandatory, but around 79% of four-wheelers are covered and 65% per cent four-wheelers are insured for own-damage only. For two-wheelers, it is much worse, as around 35% of vehicles are insured under third party and 39% are covered for own damage. In the health sector, some 36% people are insured but of these, three-fourths are insured by government schemes and the remaining 3.2% have got individual health plans. An additional 5.4% have got group health. So, almost 62% of the total health expenditure is out-of-pocket. Furthermore, only 0.9% of houses are insured whereas in the US, more than 90% of dwelling units enjoy cover. In the MSME sector, only 5% of the units are insured in the country. This sector needs much higher level of protection. So, we believe the regulator/Government should come out with some standardised products for various sectors so that the protection gap in each segment can be reduced significantly.
- ◆ Further, the overall Protection Gap in this country, whether it is life or general (non-life), in most of the segments the protection gap is about 70 to 80%. Only 20% to 25% is being availed. There is a huge gap. So, insurers need to exploit the situation, which has huge business potential.
- ◆ In India, an average Indian is insured of roughly 8 percent of what may be required to protect a family from financial shock following the death of the breadwinner. This means having savings and insurance of just Rs 8 for every Rs 100 needed for protection, leaving a protection gap of Rs 92. Lack of awareness around what is an adequate life insurance cover for an individual increases the mortality protection gap.
- ◆ A public-private solution, say a Disaster Pool, for natural disaster risk involving the insurance sector could offer many benefits over government crisis loans and grants. If we consider 2020 floods in India, the total economic loss was of \$7.5 billion (Rs 52,500 crore) but insurance of only 11%. If Government would have insured it, then the premium for the sum assurance of Rs 60,000 crore would have only in the range of Rs 13,000 to Rs 15,000 crore.
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