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THE HUB DISASTER MANAGEMENT

MAKING INDIA DISASTER READY

NATURAL CALAMITIES
HAVE BECOME A WAY
OF LIFE, BUT THE INDIAN
INFRASTRUCTURE IS YET TO
BECOME RESILIENT.

By AJITA SHASHIDHAR AND
SONAL KHETARPAL

Photograph by RACHIT GOSWAMI

BALABHADRA Panda, a priest at the Jagannath Temple in Puri, Odisha, anxiously waits to escort pilgrims into the sanctum sanctorum of the 10th century temple. A month after the devastating Cyclone Fani hit Odisha, there is visible desperation on his face as the inflow of pilgrims has dipped by over 60 per cent and so has his earnings. "Pilgrims have literally stopped visiting the temple," he says. Prior to the cyclone, Panda comfortably earned ₹1,000-1,500 a day as *dakshina* from pilgrims. Today, earning even ₹500 is a struggle. Bada Danda, the road which leads to the temple, usually teeming with people, bears a desolate look post the cyclone.

Puri's Beach Road is deserted too. The numerous hotels which dot the road are



India loses 1.2 million
houses to natural
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dilapidated and not operational anymore. The hotel industry in the state has incurred losses of about ₹500 crore and over 5,000 people have lost their livelihood.

The area has not had power since Cyclone Fani struck in early May. In the first week of June, power supply has been restored to just 20 per cent of Puri district. On the beach sits Ganesh Behera, who earns his livelihood by clicking instant photographs of visitors on the beach. Since the cyclone, Behera has been struggling to earn even ₹100 a day as tourists have vanished. In addition, after living in a cyclone shelter for about 10 days, he has to rebuild his home. The government has promised to give him ₹95,000 to reconstruct his home and he is anxiously waiting for the money to be credited into his account. "I have so far got only ₹2,000, 50 kg of rice and a tarpaulin sheet to cover my broken roof," he says.

While the Government of Odisha did a commendable job in evacuating 1.5 million people to safety, what cannot be ignored is the ₹12,000 crore loss to the state's economy. While the loss to property is to the tune of ₹5,175 crore (over 500,000 people have lost their homes), the expenditure incurred for relief is about ₹7,000 crore. From power sector, tourism, agriculture, poultry and small and medium enterprises to houses and buildings, the cyclone has brought life and livelihood to a standstill. There are thousands like Behera who are desperately waiting for aid from the government to be able to rebuild homes and get back to their livelihoods before the monsoons arrive.

The Next Steps

Debabrata Patra, Regional Manager, ActionAid India, Odisha Regional Office, says the state government isn't showing the same urgency for rebuilding as it showed for evacuations. "The government has announced housing compensation of ₹3,200 for moderately damaged homes (bulk of the homes that have perished are

Economic Impact of Natural Disasters

\$1.2 TRILLION

Estimated economic cost of disruptive shocks such as storms or floods in past 10 years in high-income and fast-growing middle-income economies (World Bank)

20% PLUS

Damages as percentage of GDP due to single shocks such as earthquakes in New Zealand and Chile

26 MILLION

Estimated number of people forced into poverty every year due to natural disasters

Odisha

₹12,000 CRORE

Loss incurred by Odisha due to Cyclone Fani

₹5,175 CRORE

Loss to property; expenditure incurred for relief is about ₹7,000 crore

₹1,000 CRORE

Losses to the power sector, the biggest loser. Tourism industry suffered ₹500 crore worth of losses, while for poultry, it was ₹234 crore

Kerala

₹21,000 CRORE

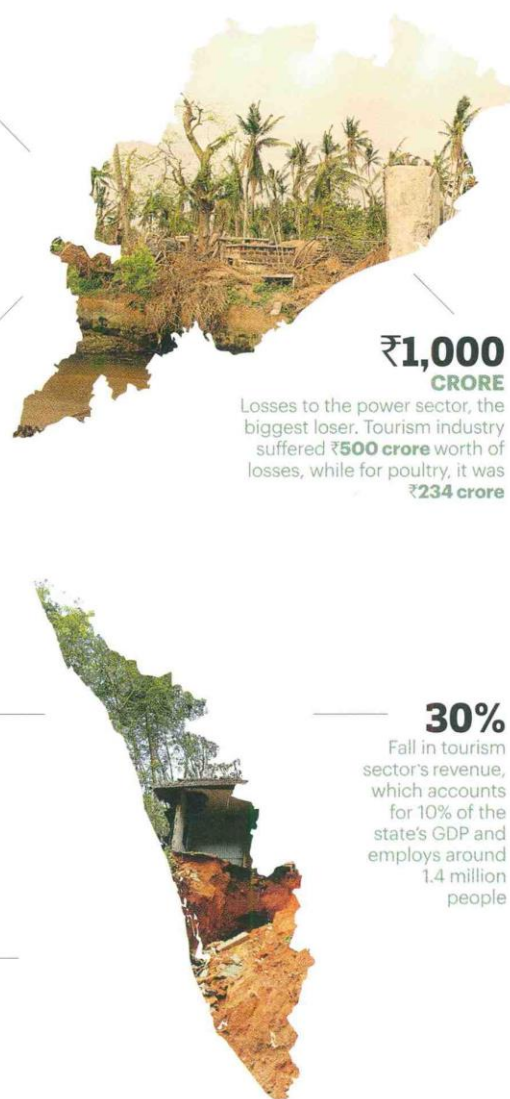
Damage estimated from the 2018 floods

30%

Fall in tourism sector's revenue, which accounts for 10% of the state's GDP and employs around 1.4 million people

₹800 CRORE

Losses of agriculture, dairy and livestock sectors; 10,000 km of roads damaged



thatched houses), ₹5,200 for partially damaged homes and ₹91,200 compensation for fully damaged homes. No one has got it." Patra urges the government to start the National Rural Employment Guarantee Scheme. "This will enable people to get at least some days of employment and they can repair their homes and revive their livelihood."

However, how natural disaster resilient is our infrastructure? It will take the Odisha Government anywhere between 5-10 years to rebuild the state and there is no guarantee that it will not be hit by another storm or cyclone in the meantime. Not just Odisha, natural disasters have become rampant in other parts of the country too.

Last year, Kerala faced its worst floods in a century. It inflicted damage up to ₹21,000 crore. Agriculture, dairy and livestock sectors incurred losses of ₹800 crore. In the Uttarakhand floods and torrential rains in 2013, the tourism sector alone suffered losses of ₹12,000 crore. The death toll was around 825.

"The first priority of disaster management is to save lives, followed by providing temporary shelter and food. The third priority is to bring them back to their original status or even improve it and the fourth priority is to minimise economic loss and build a disaster resilient infrastructure. We are doing reasonably okay in the first two priorities but quite poorly on the last two," points out Chandra Bhushan, Deputy Director General of Centre for Science and Environment (CSE).

The Odisha government had partnered with L&T to set up its early warning dissemination system. "Around 2.6 million text messages were sent to warn locals of the coming storm. The disaster response facility at state level and district level Emergency Operation Centres, set up under this project, were equipped with dispatcher terminals and GIS software which allowed radio dispatchers to effectively monitor and participate in the activities under their operation for quick and efficient response," points out R. Srinivasan, EVP and Head-Smart World and Communication, L&T Construction.

Bishnupada Sethi, Commissioner-cum-Secretary and MD, Odisha State Disaster Management Authority, agrees that building disaster resilient in-



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Bishnupada Sethi,
Commissioner-cum-Secretary &
MD, Odisha State Disaster
Management Authority

frastructure is the need of the hour. "The roads and buildings built on the coast can't follow the same standards as in the interiors. Also, if we can build disaster resilient houses, people will not need to evacuate every time."

Telecommunication and banking services in the state also failed in a big way. However, the government doesn't have funds for mitigation, points out Sethi. "We only have money for relief. For example, houses are damaged, so we will give money as house building assistance, but that is

not enough. The philosophy should be to build better. If a bridge is lost, then you should build a more robust bridge. But that concept is yet to come in the entire scheme of governance."

Buildings and Infrastructure

India loses 1.2 million houses to natural disasters every year. Over 58 per cent of the country's land-mass is prone to earthquakes. Of this, almost 110 districts are in the highest risk zone. "As a whole, our building stock has to improve," says Anshu Sharma, Co-founder, SEEDS (Sustainable Environment and Ecological Development Society), which works to protect the lives and livelihoods of people who are exposed to disasters.

Over 75 per cent of Indian companies are not disaster ready either, says a CBRE survey conducted on over 100 top companies in India. "The survey was conducted to increase awareness about disasters, to reiterate the importance of pro-active planning for disaster management, and arrive at an industry wide

approach," says Gurjot Bhatia, MD (Project Management), CBRE, India.

Building disaster resilient infrastructure would mean adherence to specifications at the time of construction. A building or power infrastructure in a coastal area, for instance, has to be designed to be resilient to high wind speeds. In 2011, the Sikkim earthquake of 6.9 magnitude killed 115 people. A similar intensity earthquake hit Seattle in 2001; nobody died due to falling bricks or debris. The high death toll in Sikkim was due to houses not being resilient to tremors. "Earthquakes don't kill people; buildings do," says Sharma of SEEDS.

The irony is that India has building codes for disaster resilience, but no one adheres to them simply because of the perception that they involve additional costs. The Bureau of Indian Standards, says D.N. Sharma, Member, National Disaster Management Authority (NDMA), has laid down clear rules on how buildings and infrastructure need to

When you are rebuilding, first, the idea is to give power to the people in whatever manner possible **and then think about putting all this infrastructure underground**

Ajay Gangwar,
Advisor, Operations,
National Disaster Management
Authority



be built in specific disaster-prone zones. "If you follow those codes, infrastructure can withstand high intensity earthquakes and high intensity winds," he says.

"We have not had quality infrastructure, even where the standards have been specified. Buildings haven't been built as per the standards laid down by the national building code," agrees Niranjana Hiranandani, MD, Hiranandani Group.

National housing schemes such as Pradhan Mantri Gramin Awas Yojana promise housing for the rural poor, but one isn't sure how much of disaster

preparedness is built in. "The Government of Odisha, post-Cyclone Phailin in 2013, had announced that all houses within five kilometres of the coast would be converted into pucca houses. A few homes were built with World Bank funding, but it cost upwards of ₹3 lakh per house and they couldn't sustain," says Patra of ActionAid India. It is high time governments and companies factor in the additional cost of disaster resilience in their projects. "It costs about 20 per cent more to make a stronger building which will survive such disasters," says Hiranandani.

Expensive Proposition

In Cyclone Fani, the poultry industry suffered ₹234 crore loss, and the reason for this, points out A.K. Sharda, Vice-President, Utkal Chamber of Commerce and Industry, is that concrete sheds crumbled. "Investment for broiler farms is anywhere between ₹5 lakh and ₹10 lakh. Investing in disaster resilient infrastructure would mean 50 per cent additional investment. The farmer can't afford this unless he gets support from the government," says Sharda.

Similarly, one of the basic requirements in coastal areas is a sea barricade, which the Odisha Tourism Association has been requesting the government to build for over a decade. "Nothing has happened," says J.K. Mohanty, Chairman of Odisha Hoteliers Association and Chairman and MD, Swosti Group. "We have to first of all move further away from the sea and make buildings resilient to strong winds. All this is a huge cost and we have requested the central government to give the tourism industry a ₹3,000 crore-support."

The worst affected in any natural disaster is the power sector. In Cyclone Fani, the sector is estimated to have incurred losses of over ₹1,000 crore. The only way to mitigate further losses is to have underground power transformers. It is obviously an expensive proposition and none of the private power companies responded to *Business Today's* queries on the same. "The distribution network is fed by poles and a large number of those were destroyed in Cyclone Fani. We have run out of reserve stocks and are now manufacturing new poles at the Durgapur plant. When you are rebuilding, first, the idea is to give power to the people in whatever manner possible. And then think about putting all this infrastructure underground in most locations that are cyclone prone," says Ajay Gangwar, Advisor (Operations and Communications), NDMA.



The other big infrastructure let-down, not just during Cyclone Fani but also in other natural disasters, is telecom. While Airtel, Vodafone and Jio did set up COW (Cell On Wheels) facilities (portable towers on a truck that can go from locality to locality offering temporary network), the disaster hit areas were completely cut off when the cyclone hit. "The (regular) towers are designed for very high speed storms and the foundations are quite strongly laid. The tower never breaks; sometimes a tree falls on the tower. So, no matter how hard you try, sometimes you cannot prevent them from falling," explains a senior executive from a leading telecom company. When Typhoon Mangkhut hit Hong Kong last year, it left 1,500 trees uprooted, but there was no disruption in power supply or telecommunication. Is there a way to build similar resilience in India? The telcos and power companies don't seem to have an answer.

Agri Resilience

The Kerala floods last year damaged crops worth ₹800 crore. In Odisha, agricultural losses are in the region of ₹150 crore. Agricultural losses are comparatively lower because Cyclone Fani was a summer cyclone and almost 80 per cent of the fields were harvested. Other crops such as banana, cashew nuts and betel nuts, however, bore the wrath. Saurabh Garg, Principal Secretary, Govern-

Building Preparedness

A PROPER DISASTER WARNING SYSTEM THAT HELPS MINIMISE LOSS OF LIVES IS CRUCIAL, BUT HAVING A DISASTER RESILIENT INFRASTRUCTURE HELPS PREVENT LIVELIHOODS FROM DEVASTATION:

Have stringent standards and protocols to build infrastructure

Ensure that these standards are implemented rigorously and governance mechanisms put in place for accountability

Creating awareness is important so that everyone understands and implements the rules while constructing homes and factories

Any new infrastructure has to take into account weather hazards of that area and also prepare for unprecedented weather events

Ensure that the development project, while addressing one problem doesn't add to another problem or create new problems such as urban floods

ment of Odisha, says work is being done on a war footing to make agricultural crops disaster resilient. "You can have seeds that are drought resilient, flood resilient and saline water resilient. There is research going on at the National Rice Research Institute. This area is disaster prone. So, the focus is to ensure that in future we are more disaster resilient."

A coastal cyclone is invariably followed by floods, which leads to salinisation of the soil.

"One of the options several countries are trying is growing salt tolerant crops. For instance, the rice varieties grown in Kerala are tolerant to sea water. Bangladesh has started using crops that grow on salt affected land," points out Bhushan of CSE.

Are You Insured?

Over 500,000 homes have been destroyed in Cyclone Fani, but the moment you ask any affected people if they have insurance, the immediate answer is that it is too expensive. The economic losses in most natural disasters are far higher than insured losses.

"This 'protection gap' is mainly due to lack of awareness about the importance of insurance," says Tapan Singhel, MD and CEO, Bajaj Allianz General Insurance. Singhel says the need of the hour is a mass insurance scheme. "The government has introduced NHPS (National Health Protection Scheme) and PMFBY (Pradhan Mantri Fasal Bima Yojana), which has been quite successful in safeguarding people from financial setback due to damages. On similar lines, a mass scheme for home insurance could be introduced in association with insurance companies."

Nature has been giving us regular warnings and it's high time we respond to these by making our infrastructure resilient to natural disasters. Time is fast running out.**BT**

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