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My way of conducting the show has nothing to do with Shah Rukh Amitabh Bachchan or Shatrughan Sinha. I can't be like them

SOURAV GANGULY Cricketer and game show anchor

How safe is your city?

RED ALERT The soft sediment of Ganga basin makes Kolkata quake-prone, but it's ill-equipped to tackle a disaster



>> **JAPAN TSUNAMI** brought to light the need for a balance of infrastructure measures and disaster education

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Green revolution. Dada bats for the Pune Warriors. Traffic jams. Old buildings. Rabindrasangeet. Adda. That's Kolkata for you. Life goes on. This coastal city has been lucky. Natural disasters of gigantic proportions have not hit the city for the past 300 years. There have been a few cyclones, Aila being one, but that's nothing compared to what nature unleashed in Japan.

The tsunami in Japan has raised several questions. Could more have been done to anticipate it and lessen its impact? Or, what would have been its impact if it had struck the coast of West Bengal? Or is it even possible to prepare for a natural disaster of this magnitude?

These are the questions that concern Rajib Shaw, 42, an associate professor at the Graduate School of Global Environmental Studies in Kyoto University. He specialises in disaster and environmental management.

Shaw was born in Belur and raised in Durgapur. He studied in Allahabad and at Jadavpur University before moving to Japan more than 18 years ago. His mother still stays in Belur.

Shaw currently leads a team of 20 professors and graduate students who help communities in 17 Asian and African countries prepare for natural disasters and the consequences of climate change through education and community-based planning.

In an exclusive interview with *Hindustan Times*, Shaw warned that an earthquake of a similar magnitude in West Bengal would spell disaster several times over.

"Kolkata is earthquake-prone. The city sits on the soft sediment of the Ganga basin and a quake may cause a significant liquefaction problem. The damage will be high, since most of the buildings are made of brick, with some as old as 200 years. In the northern part of the city, because of the narrow lanes, earthquake damage may be especially high. The risk of a tsunami is higher in coastal areas, especially in rural Bengal, where the buildings aren't designed to cope with tsunami after effects," he said.

Not far from, Bengal, an earthquake measuring 4.9 on the Richter scale rocked the areas between Mangan in West Sikkim and Mechinagar in Nepal around 6.23am on Friday. Darjeeling, which is sandwiched in between, felt the tremors.

Asked how prepared Kolkata was in terms of its disaster-control mechanisms, Shaw said, "Every city has different levels of disaster-management plans. Therefore, it's difficult for me to judge how well Kolkata is prepared to tackle a post-disaster scenario."

Shaw's fear that the city could suffer major damage because of a tremor is corroborated in the report *Seismic hazard in mega-city Kolkata* written by William K Mohanty and M Yanger Walling. According to them, the damage caused by recent earthquakes in India has been a wake-up call for people to take proper mitigation measures, especially in the major cities that lie in the high seismic hazard zones. "Kolkata, with thick sediment deposits, is an area of great concern because it lies over the Bengal Basin and at the boundary of seismic zones III and IV of the zonation map of India. In the past, Kolkata was affected by the 1897 Shillong earthquake, the 1906 Calcutta earthquake, and the 1964 Calcutta earthquake," the report says.

"After the Indian Ocean Tsunami of 2004, the early warning system has improved in the coastal areas. However, the early warning system is not the only thing that matters. People's awareness and education need to be increased, as does infrastructure, local government policy-making and funding. Disaster risk reduction is a long-term process and continuous efforts need to be made," Shaw said.

The associate professor had a word of advice for Bengal's politicians too. "Whoever comes to power should invest



>> **INDIAN OCEAN TSUNAMI** of 2004 underlined the need to increase awareness among people.



>> **MUMBAI FLOODS** dealt a lesson in the significant role of community-level help.

more in education, health, agriculture and energy. To me, these are essential for the state's development," he said.

Shaw's students are working in Mumbai, Delhi, Chennai, Ahmedabad and Puri. Shaw, whose team worked in Mumbai after the 2005 floods, drew some interesting conclusions. He said that even in the slums, people's response to disaster was very fast because they had a very good Advanced Locality Management (ALM), aimed at improving waste management of the area.

"The key learning from the Mumbai floods is that daily environmental activities at the community level help in disaster resilience. We've also worked in Chennai and other areas of South India after the 2004 tsunami. We discussed some issues related to relocation of people after the tsunami and found that access to livelihood and attachment to the original land area are keys to sustainable relocation. In Chennai, we also worked on climate-related disasters and got strong support from the mayor of Chennai and the University of Madras. One of the biggest findings is that the involvement of government and local academic institutions is essential to sustain disaster risk reduction activities. Hope the University of Calcutta and Jadavpur University have begun working closely with the civic body to improve Bengal's ALM, which becomes extremely necessary after a natural disaster," Shaw said.



>> **CYCLONE AILA** laid bare the city's lack of preparedness

QUAKESCAPE

Kolkata's earthquake history

An earthquake in 1737 claimed 3,00,000 lives, thus rendering it one of the three most disastrous earthquakes in history. Yet, evidence for a severe earthquake is weak, consisting of anonymous reports conveyed to Europe six months later by merchant ships returning from Bengal. Official accounts of the disaster submitted to the East India Company headquarters in London list 3,000 fatalities and omit mention of an earthquake

Key points for Kolkata

- Strengthening the building stocks, especially the old buildings, and make proper inspection in the new buildings
- Start disaster education in schools
- Allocate proper funds for disaster risk reduction measures
- Remember that earthquake or tsunami does not happen every year, but when it happens, the impacts are higher. Therefore, we call these as low probability, high consequence event

Elsewhere...

- October 8, 2005 Kashmir (India) and part of Pakistan Fatalities more than 80,000 Magnitude 7.6
- December 26, 2004: Indian Ocean off west coast of northern Sumatra India Sri Lanka Maldives Fatalities 2,83,000 Magnitude 9.0 to 9.3
- January 26, 2001: Kutch Fatalities 20,000 Magnitude 7.6/7.7
- September 29, 1993: Latur 9,700 Magnitude 6.2
- October 20, 1991: Uttarkashi Uttarakhand More than 1,000 Magnitude 6.6
- August 15, 1950: Tibetan plateau (Arunachal Pradesh China border More than 1,500 Magnitude 8.5
- January 15, 1934: Bihar 8,100 Magnitude 8.7
- June 12, 1897: Shillong 1,500 Magnitude 8.7
- December 31, 1881: Andaman and Nicobar Islands none Magnitude 7.9



DISASTER CONTROL

Ways to minimise damage in case of a tsunami

- Effective early warning system for giving evacuation order
- Proper shelter for evacuation
- Sea wall or coastal mangroves or green belt for reducing the impacts
- Better building structures in

more tsunami prone areas

Basic items one should have at home to survive in the event a tsunami or earthquake

- Torchlight, radio, bottles of water, some emergency food and documents (both legal and other important documents such as bank papers)

Q&A

RAJIB SHAW



Rajib Shaw, 42, an associate professor at the Graduate School of Global Environmental Studies in Kyoto University, is also the board chair of a Japanese NGO based in Kobe (Kobe witnessed a major earthquake in 1995). The NGO is starting some projects to provide information to the local communities using community radio and making some cash for work programmes to support immediate livelihood issues. Shaw speaks to **Manasij Bhattacharjee**

What is your current role in Japan?

In the post-disaster recovery, we are documenting the recovery process and planning to work with the local governments to provide inputs, especially from the experiences of Indian Ocean

Tsunami of 2004. We will continue this for next three to four years.

Post-tsunami, what is the biggest hurdle Japan is facing?

Two key points: number of evacuees and the land area for the temporary shelter. Due to the nuclear issue, it is uncertain when the problem will be settled, and this poses a significant problem in identifying the locations to shelter the homeless. This calamity has caused an unprecedented number of evacuees, who need to stay in shelter longer. Another key hurdle is that the affected area is spread over almost 500 km. Japan always has land problems. The Tohoku area (especially the Iwate prefecture) has very narrow coastal (the rest is mountain) belt,

which is affected by the tsunami. To make the temporary shelter we need space, and this has to be away from the affected region. So, people need to live far away from their original place. To find suitable land for the temporary shelter is a major problem.

What is the biggest lesson to be learnt from this tsunami?

The affected area experienced tsunami several times, in 1896, 1933, 1960 (due to earthquake in Chile) and also in 2010 (due to earthquake in Chile). People and government have taken different infrastructure measures (like sea dyke), and education programmes (school education, evacuation drill etc). This disaster is once in 1,000 years event (similar magnitude earthquake happened in the same fault

zone in 869 AD). The biggest lesson is that we need a balance of infrastructure measures and disaster education. People take their own decision of evacuation, even if there is a warning. And, education and evacuation drill and awareness play the key role for this. There is nothing called the final word in disaster risk reduction. We need to work continuously.

How often do you visit here?

I visit India at least two to three times a year with my students and other colleagues. I do not find time to go to my home every time, but try to make it once in a year.

What is your favourite place in Kolkata?

I have two favourite places — on the bank of Ganga near Belur Math in the

late afternoon, and driving through Maidan in the early morning.

Are you in touch with disaster management experts in Kolkata?

Unfortunately not

Do you like Bengali films?

Yes, love them. Recently saw *Japanese Wife!*

Do Japanese and Bengalis have similar food habits?

Both eat rice and fish (the variety is different). In Japan, we eat more sea fish, in West Bengal, mostly fresh water fish. Of course, the preparation is different though! I also find a strong similarity in the grammar of Japanese and Bengali (which is different from English).

