

How equipped are we to predict earthquakes?

DHIMAN RANJAN MONDAL

ONE of the well-researched probabilistic earthquake predictions was issued for San Francisco Bay area in the USA last year. The prediction stated that in the next 30 years, there is a 72 percent chance of having an earthquake of magnitude 6.7 on the Richter scale. In the Los Angeles area, the chances are about 60 percent within the same timeframe. These calculations have been done after carefully interpreting a lot of geophysical and seismic data. Scientific papers have been published reporting these results in a reputed scientific journal. Although scientists know the probability of the next earthquake in California, it is probably impractical that people will be alert for the next 30 years. Thus an alert system is necessary with the help of which the citizens can be warned at the time of large earthquakes.

The state of California in the USA recently introduced an early alert system that is designed to send alerts over a cell phone network after detecting any seismic activity. A cell phone application was released which will alert the user if an earthquake of magnitude 5 or higher is detected. The earthquake system installed in CA, USA is comprised of a dense network of 600 seismometers and efficient and very fast computer programmes. The principle behind this system follows simple seismological laws. When an earthquake occurs it produces two types of seismic waves, P-wave and S-wave. P-wave travels much faster than S-wave. But, the latter causes more damage than the former. Telecommunication signal travels faster than these two types of seismic waves, at a speed of light. Thus, the idea behind this alert system is to capture the shaking from

P-wave using multiple seismographs from near the source (as close as possible), process the signal to calculate preliminary magnitude, predict which area will feel the jolts and issue an alert. It gives people up to 10s of seconds to prepare and to make possible life-saving actions which of course depends on the distance between the source and the seismograph. Several countries have developed

earthquake alert system. P- and S-wave travel at the rate of roughly 5.6 km and 3.2 km, every second. Therefore, P-wave generated from an earthquake occurred 100 km away will reach Dhaka city in 17 seconds, and the following S-wave will reach in 34 seconds. If an earthquake can be detected near the source, for example, 100 km away, the city will get about 30 seconds to

of the well-documented earthquakes, the 1762 Arakan earthquake ruptured a 700 km long stretch from Cheduba and Ramree to Chittagong. In the north, the 1897 Assam earthquake also caused surface ruptures. Both of these earthquakes were of magnitude 8 and higher. The epicentre of both of these earthquakes was more than 200 km from Dhaka city. Detecting the first wave along the northern border and south eastern border will provide at least a minute or so before the arrival of the devastating S and surface waves.

Different institutions in Bangladesh such as Dhaka University Earth Observatory (DUEO), Bangladesh University of Engineering and Technology (BUET), Geological Survey of Bangladesh (GSB) and Bangladesh Meteorological Department (BMD) operate seismic monitoring networks separately. BUET and AIUB have conducted a study on developing electronics for earthquake early warning system. A collective effort is needed to develop proper hardware, software, and scientific objectives to implement such a project. Given that, BMD already has a network with operational seismograms and communication network, a pilot project can be conducted as a kick-off.

We should not ignore the fact that a high magnitude earthquake in Bangladesh can be devastating. One problem is that people do not have any cultural memory of a high magnitude earthquake. Unlike cyclones, a high magnitude megathrust earthquake in a region happens once in one or two centuries. It is always difficult to predict when the next earthquake will occur. Thus developing an early alert system could save hundreds of lives during a devastating earthquake.

Dhiman Ranjan Mondal is a Post-Doctoral Research Scientist at Haystack Observatory, Massachusetts Institute of Technology, MA, USA.



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a similar system before this; Canada developed the early warning spending about 5 million Canadian dollars.

A comprehensive alert system similar to this is much needed for Bangladesh, given that Bangladesh is located in the vicinity of two major tectonic faults, along the Himalayan range in the north and Indo-Burma range in the east. There will be some limitations but the government should start thinking now about developing an

prepare, assuming that there are some ways to send signals through high-speed communication. Further away the city is from the epicentre, the more time the city will have between the warning and the jolts, thus more time to be prepared.

Many earthquakes that occurred near Sylhet, Rangpur, Chittagong, and Chandpur area in recent years, were of low magnitude. However, the devastating high magnitude earthquakes will likely occur along the plate boundaries. One

Breaking the 'Dhaka Myths'

ANUPAM KAMAL OMI

IT does not matter where you live, because if you are a Bangladeshi, you have already come across these expressions: "Dhakai Taka Oore" roughly translated as "Dhaka is the city of opportunities". And if you are a Dhaka dweller, you are most likely living inside this bubble—greatly shaped by the Bangladeshi commercial cinema industry.

Interestingly, the middle-class elites are the ones who have propagated these fancy myths about Dhaka in popular media such as films, literature, newspapers, and so on. For instance, if we look at our post-independence films, we will frequently come across cult dialogues like "Dhakai Taka Oore". In the mainstream films of the 80s and the 90s, there was one single common theme in most of our movies: a protagonist or a protagonist's family migrating from a village to Dhaka for economic emancipation. These film narratives, on the one hand, reflected the spatio-temporal realities of our society and, on the other hand, constructed an image, or disseminated an already established image, of Dhaka as a city of opportunities where money was an easy catch. Such cinematic projection of Dhaka made it a space of "growth" where everyone (except for the upper class) fought for success.

Please do not get me wrong because I am not suggesting at all that the popular films have inspired migration to Dhaka city. Rather, I am suggesting that popular media and culture constructed an image of a better life in Dhaka in a way that the "Dhakai Taka Oore" concept has become permanently embedded in the psyche of the mass people. The representation of a fortune-changing city in local films boosted the mythic construction of Dhaka. A hero comes to Dhaka and becomes a millionaire all on a sudden as if he has found Aladdin's lamp. Dhaka worked as a magic space.

Also, if you can remember how Dhaka was actually portrayed in the same movies of that period, you will

be able to recollect the stereotypical duplex luxury villa (at that time private apartments were not common), where an aristocratic Chowdhury Shaheb lived. Such representation enters our cultural discourse with a vibe that Chowdhury Shahebs generally live in Dhaka. The social power of these Chowdhury Shahebs represent Dhaka's hierarchy and spatial hegemony. This is how Dhaka's mythic impression unconsciously became a cultural norm.

As mentioned before, the middle-class elite of our society propagated these myths producing a cultural desire among others to come to Dhaka in search of monetary and social success. The messages are simple: you go to Dhaka, struggle there, get a good job, meet successful people, and eventually hit the jackpot in terms of money and career. All good schools are in Dhaka, the best teachers teach in Dhaka, Dhaka University is the best, big shopping malls are in Dhaka, Dhaka is a city of the tallest buildings, the night life of Dhaka is amazing, Dhaka means dynamism, whatever happens in Dhaka is a headline, Dhaka means big jobs and a hefty salary, etc. One might at this point ask: are these all truths? Or are they just fancy illusions of Dhaka's capitalistic growth? I do not consider such growth as "development", as for me Dhaka is a perennial misery (in terms of growth) at the centre of Bangladesh.

However, the cultural desire, which has penetrated into the nation's subconscious has transformed Dhaka into a centre while all other regions appear peripheral. The construction of such fancy myths has generated a central hierarchy in our socio-cultural discourse. We have placed Dhaka as the centre of everything, which has encouraged a good number of people from other regions to migrate to Dhaka. This migration is not bad, because it happens to each metropolis around the world. But it is threatening in case of Dhaka because of its infrastructure which cannot continue to absorb the constant flow of people from the rest of the country.



If the current rate of population growth continues, Dhaka will exceed Beijing in size by 2025, with a projected population of 22.9 million. PHOTO: STAR

Such myths that represent Dhaka as a place of endless opportunity and wealth have damaged Dhaka's possibility of being a healthy, planned and beautiful city. Dhaka is facing the pressure of being the centre of everything such as politics, economy, social life, culture, career, administration and so on. Decentralisation is the only way to save Dhaka and it has to take priority in policy making. But that is the job of the government and the policy makers. But how can we break the myths already inculcated into our socio-cultural discourse, and how can we break


the consequences resulting from the production of these myths?

People have taken the myths as axiomatic truths, so they feel comfortable inside the bubble. The whole city is stuck and studded with problems: water crisis, population density, lack of security, huge traffic, corruption, etc. But you can still ask anybody about leaving Dhaka and going to a different place to settle. You will find that nobody is planning to leave Dhaka, the city of opportunities, even though everyone knows living in Dhaka is kind of living in a hell. It is now a stock-still

city, unmoved and unnecessarily crowded. You can come down to Dhaka's street on a regular day, and you will understand how a city has reached the verge of zombification. The 400-year-old Dhaka is suffering from the consequence of our system malfunctioning in every possible way. I do not know how we can save Dhaka. But we can at least free Dhaka from being burdened by the myths by honestly representing the city in our films, dramas and other media narratives.

Anupam Kamal Omi is pursuing MA in English Language and Culture at University of Eastern Finland.

ON THIS DAY IN HISTORY



October 28, 1886
Statue of Liberty dedicated

On this day in 1886 US President Grover Cleveland officially dedicated the Statue of Liberty—a gift from the people of France to the people of the United States—on Bedloe's (later Liberty) Island in Upper New York Bay.

CROSSWORD BY THOMAS JOSEPH

ACROSS

- 1 Citi Field team
- 5 Go for with gusto
- 11 War of 1812 port
- 12 Run out
- 13 Cook's mint
- 14 Frittered away
- 15 Cabinet wood
- 16 Lab runners
- 17 Have faith in
- 19 Rent out
- 22 Spirited horse
- 24 Veep Agnew
- 26 Glass section
- 27 Quiche base
- 28 Rejoice
- 30 Friend of d'Artagnan
- 31 Brief drop
- 32 So far
- 34 Wheel bar
- 35 Punk rock

DOWN

- 1 Butte's kin
- 2 Historic times
- 3 Make stricter
- 4 Catch sight of
- 5 Narnia's creator
- 6 Forces, as payment
- 7 Church area
- 8 Deep hole
- 9 "Roses -- red"
- 10 TV's Danson
- 16 Coffee, slangily
- 18 Stagger
- 19 Stop being so serious
- 20 Therefore
- 21 Fling
- 22 Ignored the limit
- 23 City vehicle
- 25 Tennis star
- 29 Campaign promise
- 30 Pro vote
- 33 Strikes
- 34 Opera set in Egypt
- 36 Pianist Hess
- 37 Plow pullers
- 38 Hearty brew
- 39 Sly one
- 40 Jay-Z specialty
- 41 CIA forerunner

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BEETLE BAILEY by Mort Walker



BABY BLUES by Kirkman & Scott



YESTERDAY'S ANSWERS

A	D	O	S	J	A	M	E	S
R	E	N	A	L	A	F	O	R
O	N	E	G	O	O	D	T	U
A	I	D	S	U	E	L	A	S
R	E	G	R	E	T	F	I	N
S	E	E	T	O	E	N	D	S
P	O	S	E	T	R	A	M	P
A	T	I	T	U	M	L	A	U
T	O	E	B	R	A	T	R	E
T	O	S	A	N	D	T	U	R
E	L	T	O	N	A	I	R	E
R	E	A	D	S	A	M	E	D