

DECODING THE RAMGANJ EARTHQUAKE

How vulnerable is Bangladesh?



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On December 2, at approximately 9:35am, Bangladesh was rattled by a seismic event. According to Bangladesh Meteorological Department (BMD), the earthquake's magnitude was 5.6 on the Richter scale, and the epicentre was approximately 10km northeast of Lakshmipur's Ramganj upazila and 81km southeast of the capital. It occurred at a depth of around 38.5km, which falls under the classification of a deep crustal earthquake.

Interestingly, this type of seismic activity does not increase the risk of higher magnitude earthquakes but, in fact, diminishes the likelihood of such occurrences.

On the Modified Mercalli Intensity (MMI) scale, Ramganj earthquake fell in Category VI when it was measured in areas near Ramganj, while diminishing intensities were observed at greater distances from the epicentre: IV in Mymensingh and II to III in Rangpur. The intensity was about IV to V in different parts of Dhaka city; more shaking/intensity was reported from tall buildings and structures with weak foundations.

According to the scale, the intensity reaches VI if the tremor is strong and felt by all, with heavy furniture moving and plaster potentially coming off walls. Intensity III to IV marks weak and light shaking, felt quite noticeably, and vibrations quite similar to a passing truck. At high intensities (above VI), the shaking damages buildings.



VISUAL: REHNUMA PROSHOON

No major casualties and damages were reported due to this earthquake. One of the notable reports was of 200 garment workers being injured while rushing down from a building in fear of the earthquake in Cumilla's Chaudhagram upazila, adjacent

to Dhaka-Chattogram highway. A police inspector from Ramganj said he was jolted out of sleep due to the shaking, which felt like a heavy weight falling on his bed. The area's UNO mentioned experiencing the tremors while he was in his vehicle.

Earthquakes usually occur when there is a fault in the subsurface, and movement along the fault releases

the Dauki fault in the north. The December 2 earthquake was caused by the subduction of the Indian tectonic plate beneath the Burmese plate; the subduction front passes north-south through the central part of the country, including Dhaka city.

Many predict that an earthquake of magnitude 8 and above is likely to occur at any time in this area,

I, along with my team, conducted several studies and found that the majority of earthquakes occurring within Bangladesh are linked to both shallow and deep crustal structures. In geology, the shallow crust is less than 10km deep and composed of comparatively weak sedimentary rocks, while the deep crust is 10-40km deep and made up of igneous

the crustal depth is comparatively low. And so, deep crustal earthquakes are likely to occur there. In this specific earthquake depth zone, several earthquakes were recorded previously.

Although no surface expression of the fault has been found where the earthquake occurred, a study I led for the Comprehensive Disaster Management Programme (CDMP) of the Ministry of Disaster Management found surface expression (fault scarp) of the Mainamati fault in Lalmai Hills of Cumilla to be in close proximity to the recent earthquake. Back then, detailed investigation was not possible as no geophysical surveys were conducted to evaluate the geometry, orientation and other subsurface aspects of the fault.

Shallow and deep crustal earthquakes are nothing new in Bangladesh. The 1918 Sreemangal earthquake of 7.3 magnitude, 1999 Maheshkhali 5.1 earthquake, 2003 Rangamati 5.7 earthquake, and the Dohar 4.3 earthquake this May are some examples of crustal earthquakes in Bangladesh. Analysing available data and geological insights, it can be inferred that the Ramganj earthquake is connected to the crustal structures of the vicinity. Therefore, there is no obvious reason for fear of any major earthquake of magnitude 8 and above.

However, to reduce the risk and damages from major earthquakes, it is necessary to raise awareness and strictly follow building codes during construction. There are numerous small faults that exist in the shallow and deep crust within Bangladesh. Previously, they were not considered to be earthquake-generating faults, but the Ramganj earthquake changed that idea. A comprehensive investigation of these small-scale crustal faults to evaluate earthquake vulnerability of the country is now necessary.

PHD DEGREES FROM PRIVATE UNIVERSITIES

The need for a clear research agenda



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On June 2, 2022, speaking at the first convocation of Varendra University in Rajshahi, Education Minister Dipu Moni stated, "Universities both public and private should be turned into hubs of research for generating a knowledgeable and competent nation-building workforces." On June 5 this year, she took a bolder step by stating that the University Grants Commission (UGC) should allow PhD degrees in private universities, which are at the forefront of education and research, mentioning that there are some private universities that have this capability.

This is indeed a refreshing tone emanating from the education ministry, serving as the backbone of a nation boldly striding towards the upper-middle-income status. It is also expected to spur the growth of quality research in public universities, fuelled by competitive instincts. Exciting as the news is for private universities, a few selected ones at the beginning, the success of this venture with untold benefits will depend on a clear and bold research agenda.

Articulating a clear research agenda for private universities is essential for several strategic reasons: it goes beyond providing research funding and serves as a guiding framework, enabling the institutions to align research goals with broader national and global priorities.

Relevance to national development goals

A well-articulated agenda ensures that university research is closely aligned—as is in other countries (especially with resource limitations)—with the country's broader developmental objectives. Such alignment transforms the institutions as strategic partners in development, connects their research meaningfully to the evolving needs and challenges facing the nation, and enhances relevance of the institutions. The stark absence of such coordination today between universities and the government's priorities needs serious attention.

At the same time, such coordination would enable policymakers to assess the impact of the private universities on overarching national priorities. This would also ensure that research

endeavours at the universities are not isolated and disjointed, but contribute meaningfully to the country's development trajectory.

Policy formulation and implementation Policymakers, partnering with the universities, can benefit from a clear research agenda that drives evidence-based investigations for informed decision-making. In other words, the research findings must inform the policies and their adaptations should be grounded in empirical data, not on whimsical and crude assessments of reality or driven by arcane motives.

A thoughtful research agenda is a strategic imperative that can contribute to the overall development and competitiveness of Bangladesh on the global stage. Formulating such an agenda will require intense collaboration between academia and the government, not a top-down approach. Such a model can be extended to industry-academy partnerships also. The agenda must be consistent with research capacity at the university level, weakened substantially by years of brain drain.

Articulating research priorities can especially help establish important performance indicators, which can be monitored and evaluated to assess the impact of research on policy outcomes. This can also nurture the growth of a culture of evidence-based governance that is built up in stages to aid policy circles.

Strategic resource allocation

A recent news piece cited that UGC allocated Tk 150 crore for research out of the total budget of Tk 10,000 crore for public universities, which have over 15,000 teachers—a mere 1.5 percent of the total academic budget. This amounts to Tk 1 lakh per teacher, a paltry sum. The current practice at UGC is to allocate fixed amounts (Tk 2.5 lakh, according to a circular) to research studies, an antiquated practice which

energy suddenly in the form of seismic waves. Low- to moderate-scale earthquakes frequently occur in and around Bangladesh, as the country is situated close to two major seismic sources: Indo-Burman subduction belt in the east and

while others say the release of energy through moderate- to low-magnitude earthquakes reduce the risk of potential major ones, while local geological features attenuate the energy released by the seismic events.

to enhance the skills of the faculty/researchers in the chosen areas to ensure continuity of the research agenda when a pipeline of well-trained professionals are continuously developed. Clarity in research priorities will also help attract and retain talented researchers that will enable and motivate them to contribute to the priority areas. This step is also likely to mitigate the brain drain phenomenon and even contribute to brain gain if the research agenda can create a threshold level of excitement.

Global partnerships and recognition

A well-formulated research agenda can signal to the global academic community that the nation is actively addressing shared challenges while striving to contribute to the advancement of knowledge on a wider scale. It can positively position the country as a valuable partner for international collaborations. With innovative and inspiring contributions, it can uplift the country's global academic reputation that, in turn, can attract international researchers, partnerships, and collaborations. As a consequence, the research ecosystem will benefit substantially.

A thoughtful research agenda is a strategic imperative that can contribute to the overall development and competitiveness of Bangladesh on the global stage. Formulating such an agenda will require intense collaboration between academia and the government, not a top-down approach. Such a model can be extended to industry-academy partnerships also. The agenda must be consistent with research capacity at the university level, weakened substantially by years of brain drain. To fill this gap, partnerships ought to be developed with the diaspora community. The universities must also form alliances and consortia among themselves initially, with a critical mass of PhDs (with proven track records) to lead important research tracks. Research funding may be contemplated on a matching basis, with the private universities contributing a portion of the budget. All these activities must be coordinated by a single entity such as the National Research Council, suggested in the latest Strategic Plan for Higher Education.

The education minister has the right mindset aligned with the prime minister's vision of a Smart Bangladesh. Putting it together and making it a successful venture will require hard work by dedicated souls to enable the private universities to move towards centre stage in their nation-building aspirations.

Amartya Sen's tribute to Ali Kaiser Hasan Morshed



Ali Kaiser Hasan Morshed

COURTESY: FAMILY

I cannot express adequately how devastated I feel on the news about Kaiser. He was such a wonderful person, and one I had the privilege to have as a friend since the summer of 1953, when we travelled together to England and came to know each other extremely closely. I always enjoyed Kaiser's company, and of course his friendship, and it is difficult to think that he could be no more. I remember sitting on the deck over the Mediterranean and talking about the future of the world, despite our unstoppable pessimism in a world that seemed doomed to come to a sad end. I think I enjoyed Kaiser's company more than anyone else's in those difficult days, when both of us were moving from the world of Asia to the new surroundings of Europe.

Kaiser's memory will always be active and alive in my mind, but it is hard to think that he himself could move on. I know that Kaiser had some religious beliefs—restrained as they were—which I never managed to cultivate, and I can only hope that he will get a sense of being that will not desert him.

Nobel laureate Amartya Sen sent this tribute to the family of Barrister Kaiser Morshed, a former foreign secretary, after he passed away on November 23.