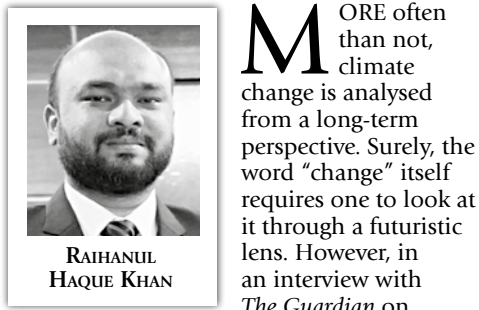


# Flood forecasting in Bangladesh and the need for greater response capabilities



MORE often than not, climate change is analysed from a long-term perspective. Surely, the word “change” itself requires one to look at it through a futuristic lens. However, in an interview with *The Guardian* on July 7, 2019, Mami Mizutori, a top UN official, warned that climate crisis disasters are occurring every week causing death, displacement and suffering. In other words, “climate change” is not so much about the future anymore. It is a current crisis as well.

Similarly, European Academies’ Science Advisory Council had examined the rise in extreme weather events and published a statement on March 21, 2018, concluding that “man-made climate change has proven to have increased recent extreme rainfall and associated floods and coastal flooding due to sea-level rise.”

A study performed by researchers at the University of Oxford titled “Risks of Pre-Monsoon Extreme Rainfall Events of Bangladesh: Is Anthropogenic Climate Change Playing A Role,” also concluded that anthropogenic climate change doubled the likelihood of extreme pre-monsoon rainfall over north-eastern Bangladesh. In reality, extreme weather events are defining a new normal in terms of hydro-climatic conditions.

In July 2019, we experienced flooding in three different regions (north-western, north-eastern and south-eastern) of Bangladesh, where flood-water level has exceeded the previous record at a number of observation points that experienced unprecedented flooding. Earlier, when we talked about unprecedented environmental shocks, most of us would assume that they weren’t frequent. But such notions are redundant

now, as we experienced unprecedented flooding in the nation for the past four years. Until 2016, the recorded highest flood (in terms of magnitude) for the low-lying areas of Jamalpur was the one that occurred in 1988. The severity of that flood was surpassed by the 2016 monsoon flood; the new record was again broken during another flood that happened in 2017. On July 19, 2019, that level was again exceeded by a much greater margin when an ongoing flood hit over a million people in Bahadurabad point of Jamalpur.

While some regions of the country are experiencing floods, some others are swept by heat waves. On March 2017, extreme rainfall triggered the earliest flash flood in north-eastern Bangladesh since 2000, damaging huge amounts of Boro rice just before the harvest. Consequently, rice import saw the highest rise in a decade in the following fiscal year. During the same year, landslides—which were a consequence of the flash flood—reportedly claimed more than 150 lives in three hilly districts of Bangladesh (Rangamati, Chattogram and Bandarban).

In light of these disasters that have claimed so many lives, we must devise ways to manage the risks of climate change. One way is by monitoring and forecasting imminent risks using Early Warning System (EWS). In Bangladesh, Flood Forecasting and Warning Centre (FFWC) of Bangladesh Water Development Board is responsible for forecasting floods using structural and non-structural measures. Quality-checked, processed data are used in their model to generate 5-day lead-time deterministic and 10-day lead-time probabilistic flood forecasts. With 10 days’ lead time, FFWC has been able to detect the monsoon floods well ahead of the events. This capability has been highly appreciated in the region as Bangladesh is the only country in South Asia to have this flood forecasting system.

Forecasting is just the first step, however.



Floods in Jamalpur exceeded previous levels manifesting the effects of climate change. The picture was taken on July 22, 2019.

Forecasts need to be listened to, understood and used to actually take precautions. The communities at risk should have the capacity to respond to the warnings. FFWC issued a warning well ahead (at least 8 days) of the flood that happened earlier this month in the north-western region of the country, which marooned millions of people. FFWC also captured the possibility of exceeding the previous recorded highest levels at Jamalpur and issued a special flood outlook on July 17. This was a brilliant job from the forecasting point of view, given FFWC’s technical and human resources limitations.

When it comes to forecasting, we always ask one question—“How accurate is it?” But what we need to inquire and investigate more is whether the early warning for the ongoing flood was used by the responsible officials to devise a proper risk management plan and whether that plan proved useful.

The Department of Agricultural Extension

issued special advisories for the farmers based on the 10-day flood forecast. We need to find out how much of this information reached the impoverished farmers and whether they were able to take preventive measures at all. We cannot deny that the community needs to be provided with more impact-oriented information; they need to know what the weather will do, not only what the weather will be.

To tackle the new normal, we need an integrated multi-hazard EWS. We need to develop the capacity of that software around four crucial safety measures: disaster risk knowledge; detection, monitoring, analysis and forecasting of hazards and possible consequences; dissemination of warnings ensuring last-mile connectivity; and preparedness and enhancing response capabilities through risk education.

It is important to note that we need to act very soon and that it is not a time to argue

about the quantum of measures to be taken. Our social, environmental and economic foundations for sustainable development have been threatened by non-linear climatic variability. Extreme weather events are happening across multiple dimensions and on varying scales. New risks and correlations are emerging in ways that had not been anticipated. We need to incorporate these findings in development planning, investments and policies.

We also need to find a balance between our approaches to Disaster Risk Reduction and Climate Change Adaptation, while adhering to their main goals for more effective and efficient long-term development gain. This would open up opportunities to learn from each other, enhance resilience at the local level through risk anticipation and reduce the number of overlapping activities, thus, improving funding efficiency.

Bangladesh has made remarkable progress in developing early warning systems for floods. However, rapid development and the environmental concerns that come with it could also affect climate risks. We need more research and development to improve the EWS to face the future challenges that may arise out of man-made climate change.

All in all, major changes to the current risk management approaches are needed to be able to realise the outcomes and goals of the agreements we have pursued after 2015—the Sendai Framework for Disaster Reduction 2015-2030 (SFDRR) and the 2030 Agenda for Sustainable Development. We need to improve our foreseeability and look at the risks of not investing in resilience. The urgency is evident as climate change is happening right now in Bangladesh. And so, the time to act is undeniably also now.

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## Nurturing the changemakers of tomorrow

MD SABUR KHAN

ENTREPRENEURS are harbingers of hope. To promote and nourish entrepreneurship, many countries have given substantial attention to entrepreneurship education and strengthening related institutions. Management gurus view entrepreneurial activities as a critical contributor in fostering economic growth and development.

We have observed that both entrepreneurial initiatives and education have expanded significantly in the US and Israel. You will find that the maximum numbers of unicorns are based in the US and China, such as Ant Financial, Airbnb, SpaceX, OLA Cabs, Rubrik. A unicorn is a privately held startup company valued at over USD 1 billion. Among former unicorns, Uber, Facebook, Xiaomi, Alibaba are the more notable ones. Some perfect examples of entrepreneurial legacies are developed in Silicon Valley in Northern California, Austin TX, San Francisco, CA. To boost entrepreneurial initiatives, the US has also developed a unique culture of Angel Investment Ecosystem. All giant startups and entrepreneurial initiatives have been developed by nurturing the entrepreneurial mindset of people. Qatar is also doing good in the domain of innovation and research; for example, Qatar Foundation is working on education, research, and community development.

In our education system, we do not assess or evaluate a person’s natural talents, innovation or entrepreneurial mindset. An innovator or entrepreneur does not only mean being a successful businessperson; people with an entrepreneurial mindset can contribute or engage themselves in different sectors or segments. Those entrepreneurial minded people may be in government, law enforcement agencies or in the corporate sector. These individuals possess unique traits like creativity, innovativeness, ability to take risks. A nation can only progress by nurturing these people.

To maintain sustainable and equitable development, the tertiary-level education system needs to be transformed, focusing

heavily on encouraging and cultivating entrepreneurial minded students. Practical or hands-on experience is needed in our education system. At the tertiary level, our students should be involved in practical experiences. Besides, the country’s education needs to adopt innovation, instead of following the archaic method of teaching-learning. The old system should be replaced by Outcome Based Education (OBE). Effective pedagogy and innovative teaching methods can be applied with entrepreneurial minded academics.

We must take into account one thing, that

2030, while the World Economic Forum suggests that a “skills revolution” could open up a raft of new opportunities. So, our tertiary education should concentrate on innovation in every area. “If we do not change the way we teach, 30 years from now, we’re going to be in trouble,” said Jack Ma, founder of Alibaba Group, China’s e-commerce giant. The knowledge-based approach of “200 years ago” would “fail our kids”, who would never be able to compete with machines. Children should be taught “soft skills” like independent thinking, values and teamwork, he said.

of them have already started their own ventures, which has been facilitated by this holistic initiative. We believe entrepreneurial education creates high job satisfaction. Higher levels of entrepreneurial education achievement lead to higher earnings and reduce the level of unemployment. Of late, many universities around the world are in the process of strengthening their entrepreneurship education programmes in order to create more young entrepreneurs in the future.

We are pretty hopeful as our government formulates various pro-entrepreneurial

in the country. We hope the central bank will come up with more such initiatives to contribute in creating entrepreneurs in the country. The initiative has given the direction to nurture the entrepreneurship process, which was acknowledged and accepted by the government.

Imran Khan, former Chief Strategy Officer of Snap Inc., at a national debate programme remarked: “My talent will not be nourished here; that’s why I have decided to go to the US.” Though it was meant to be a light-hearted comment, it sums up the situation and highlights how we need to stop the brain drain by providing entrepreneurial facilities to the young generation.

Bangladesh has enormous opportunities to grow more. According to a World Bank report, Bangladesh is among the five fastest-growing economies of the world, with a 7.3 percent GDP growth projection in the FY2019. The report also added that Bangladesh’s growth outlook remains strong and stable. Sound macroeconomic policies—such as keeping the budget deficit below 5 percent of GDP—and resilient domestic demand have led to growth in manufacturing and construction industries on the supply side. On the demand side, growth is led by private consumption and exports. Aligning with this trajectory, quality in tertiary education plays a vital role, as the world is now moving towards the fifth industrial revolution. For sustainable growth, we need to build a skilled pool of human resources.

I strongly believe our young population can adjust well, with their inherent power to transform, and can retain the existing progress of the country where entrepreneurial mindset and innovation will work as a catalyst. The new generation of our country needs to be educated and trained up in such a way that they will believe in their own minds that they can become successful entrepreneurs, who will not have to search for jobs, rather will provide jobs to others as Bangladesh works to transform into a “developed country”.

Dr Md Sabur Khan is Chairman, Board of Trustees, Daffodil International University.

QUOTABLE  
Quote

**OSCAR WILDE**  
(1854 – 1900)  
Irish poet and playwright who became one of London’s most popular playwrights in the early 1890s.  
*Some cause happiness wherever they go; others whenever they go.*

CROSSWORD BY THOMAS JOSEPH

**ACROSS**  
1 “Toodleo!”  
5 Young pigeons  
11 Trojan War hero  
12 European fish  
13 Bakery buy  
14 Makes fresh  
15 Bauxite, e.g.  
16 Salon supplies  
17 Knitted wrap  
19 Spring month  
22 Wander off  
24 Comet’s place  
26 Destitute  
27 Gumbo vegetable  
28 Take as one’s own  
30 Snide expression  
31 Nonsense  
32 Map lines  
34 Ersatz  
35 Cardinal color

**DOWN**  
1 Folded food  
2 Cracked  
3 Becomes established  
4 Lumberman’s tool  
5 Scatter  
6 Suppresses  
7 Coffee dispensers  
8 Japanese prime minister  
9 Fiddling need  
10 Ave. crossers  
16 Like Pride Parade

**participants**  
18 Plucked instrument  
19 Scoots over  
20 Plot unit  
21 Calendar span  
22 Rigging support  
23 Fuss  
25 Tadpole’s home  
29 Shipping inquiry  
30 Combo instrument  
33 Evicts  
34 Do clerical work  
36 Poet Pound  
37 College head  
38 Adam’s mate  
39 Pewter component  
40 Fiery  
41 Lennon’s love

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11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44

YESTERDAY’S ANSWERS

C	A	S	T		G	A	L	O	S
A	T	E	A	M		A	L	L	O
M	O	R	N	I	N	G	L	I	N
U	N	I		M	I	A		V	E
S	E	A	D	O	G		T	I	L
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C	L	O	T	H	E	S	L	I	N
T	O	T	E	M		T	A	S	T
S	T	O	N	Y		T	B	E	S

BEETLE BAILEY  
by Mort Walker

BABY BLUES  
by Kirkman & Scott