

Global warming and mass extinction of life on earth

ZEESHAN HASAN

CLIMATE change is usually thought of as a threat in terms of rising sea levels and increased drought; but science has revealed that it bears further threats. These previously unknown dangers of climate change are the focus of Peter D. Ward's book, "Under a Green Sky: Global warming, the mass extinctions of the past, and what they can tell us about our future" (published 2006 by Harper Collins). Ward is a professor of biology and earth and space sciences at the University of Washington at Seattle, and also works at Nasa. He is one of the biologists whose analysis of the fossil record has helped scientists understand what caused the numerous mass extinctions that have occurred during the history of life on earth.

The most famous of earlier mass extinctions was the one which wiped out the dinosaurs; thirty years ago, scientists confirmed it was the result of an asteroid hitting the earth. Following that great discovery, scientists for years assumed that all the other mass extinctions were similarly the result of asteroid impacts. However, geologists were ultimately unable to find any evidence for those supposed asteroids. Apparently, the extinction of the dinosaurs was unique, and a different explanation was necessary for the remaining mass extinctions. This was ultimately found to be global warming due to excess carbon dioxide in the atmosphere. It turns out that large quantities of carbon dioxide can be released by volcanic activity; this is especially likely in major tectonic events such as when the Indian subcontinent collided with Eurasia (creating the Himalayas).

Ward's book investigates the mechanism by which global warming caused mass extinctions such as the end-Permian extinction event, which destroyed 95% of

life on earth 250 million years ago. Scientists have found that most mass extinctions were marked by huge amounts of hydrogen sulphide, which is the smelly, poisonous gas released by rotten eggs. The hydrogen sulphide was created by an oxygen-free "Canfield ocean" (named after the scientist who discovered it), a condition similar to that which now exists in the Black Sea. Canfield oceans occur when global warming melts too much polar ice, releasing so much cold water that the normal ocean currents

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which circulate water from deep to shallow and keep the oceans oxygen-rich are disrupted. Once this happens, the oxygen-breathing fish and other sea creatures quickly consume all the oxygen left in the water and then suffocate. The remaining oxygen-free water can sustain only anaerobic purple bacteria which require no oxygen to live; by filling up the ocean, these bacteria would also turn the ocean purple.

Anaerobic purple bacteria in a Canfield ocean produce massive quantities of hydrogen sulphide gas, which then bubbles to the surface and poisons animals on land. Hydrogen sulphide also damages the

ozone layer, exposing the remaining animals and plants to deadly levels of ultraviolet rays from the sun (as a minor side effect, hydrogen sulphide from a Canfield ocean would also turn the sky green; hence the title of the book). Thus global warming has caused mass extinctions on both land and sea which can only be described as apocalyptic.

How far away is this? We don't know exactly how much polar ice has to melt to create a Canfield ocean and another mass extinction, but we do know the following:

Using [current carbon dioxide emission] rates, which work out to about 120 parts per million per century, we might expect carbon dioxide levels to hit 500 to 600 parts per million by the year 2100. That would be the same carbon dioxide levels that were most recently present sometime in the past 40 million years -- or more relevant, it would be equivalent to times when there was little or no ice even at the poles. (Pages 164-5)

In other words, by the year 2100, within two or three generations, carbon dioxide levels will be high enough to virtually ensure another polar melt. This will likely set into motion a Canfield ocean and mass extinction which humanity may not survive. Our only chance to avoid this apocalyptic future is to stop using fossil fuels like coal, petroleum and gas, and replace them completely within a few decades with nuclear, wind and solar. This is the only way to prevent further polar ice melting and a Canfield ocean-created mass extinction. Unfortunately politicians and the public are in a state of scientific ignorance and denial of climate change. Anyone who cares about the survival of humanity beyond the next century needs to try to remedy that.

The writer is a graduate of Harvard and LSE.

SHIFTING IMAGES

Power of participation



THIS column may come as a surprise to some. So far, I have consciously steered clear from writing about politics. Not because I think politics is unimportant. As a matter of fact, most issues that impact our lives -- cost of living, national and domestic security, education and health services -- are inextricably connected to political decisions. However, my limited understanding of the political milieu has prevented me from writing extensively about it.

Today, I make an exception because the ongoing political developments in the United States have come to occupy a centre stage in my daily life. Since I started volunteering for President Obama's re-election campaign, I have been orbiting in the heady and fascinating universe of politics, although at the micro (community) level. For the first time, I have begun to fathom how much of a difference political views and policy decisions can make even for people like me who are truly "apolitical."

Volunteers receive basic training for the job which involves phone banking, door to door canvassing, and providing campaign information to

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potential voters. A phone bank is a list of targeted voters. A group of volunteers get together and call people from the list to remind them about the election date, time and location to make sure that they vote. A written script is often used for this exercise. The house visits are trickier since we are expected to engage residents in a dialogue to inform them about President Obama's policy choices and how these would benefit the country and the lives of the citizens.

What I find particularly remarkable about the political process in the US is the civility with which campaigns are managed. With four weeks left for the elections, the current atmosphere is naturally electrifying since each party is trying to energise its base. Nevertheless, all political activities are conducted with a decorum that respects freedom of expression for both sides. A few days ago, at the opening ceremony of the neighborhood Obama campaign office, I was a bit unnerved to see some banner-waving Romney supporters right next to the entrance. But there were no fist battles and heckling, and it turned out to be a seamless affair with each party keeping out of its opponent's way, as if some unwritten rule was being honoured!

Another appealing feature of the volunteering culture is the diversity of the participants. We are a heterogeneous bunch: men and women of all ages, colours, religions, ethnic groups and professions! The only thing that holds us together is a common mission!

The other day a friend of mine asked me, somewhat sarcastically: "So, why are you investing so much time and effort in volunteering for the Obama campaign? As far as I can tell, you will be sleeping in the same bed, no matter who becomes the president on November 6!" The question took me by surprise because I had not consciously thought about the personal angle. I realise that it is difficult to analyse democracy in terms of tangible costs and benefits! However, after some honest soul searching, it dawned on me that I am in this campaign because I deeply care about the world that I live in and the future course it will take.

More specifically, I feel strongly about some of the issues which are at the centre of the political debate in the United States. First, I want a leader who believes in equal rights and opportunities for women. Second, it is unacceptable to me that one of the most affluent countries in the world does not provide access to affordable health care for all its citizens. Finally, I cannot, in good conscience, live in a society where a business CEO/entrepreneur who makes \$13 million annually can find loopholes to pay taxes at the same rate as the school teacher who makes \$40,000 per year. And, I believe President Obama's policies address these issues.

According to media pundits, the election is still "up for grabs"! While I would like Barack Obama to be our president, whoever wins on November 6, I will feel secure in the knowledge that I tried to fight for the rights of all, not just the privileged few. Whether we have 51% or 49% with us, the message of change is resonating across the country. I have seen it happening. And that is why, even if I sleep in the same bed on November 6, I might sleep a little better!

The writer is a renowned Rabindra Sangeet exponent and a former employee of the World Bank.

A whistleblower

RIPAN KUMAR BISWAS

THOUGH there are a lot of good people in Bangladesh, who are ready to tell the public or someone in authority about alleged dishonest or illegal activities occurring in a government department or private company or organisation, the whistleblower comment "I am unable to bear the burden any longer," made by driver Azam Khan, carried a very clear message.

What are the right things to do when there is violation of a law, rule, regulation, and/or a direct threat to public interest, such as fraud, health/safety violations, and corruption? The answer is not too hard to find. We have more than a moral imperative to step forward and expose those malfeasances.

Whistleblowers like Azam Khan are ordinary people who find themselves as observers of situations that force them into a decision of having to speak out. But the road to victory or justice is generally rocky and not without consequences for the whistleblower. He/she can suffer ostracism, loss of income and job, and depression. And the severest consequence would be the loss of life, either his/her or one of his/her family.

Azam Khan's whistleblowing story began on the night of April 9, 2012, when he drove APS Faruq's microbus into Pilkhana, the headquarters of Border Guard Bangladesh, and blew the whistle that there was illegal money in the vehicle. According to various news media at that time and also his appearance in a private TV channel in Bangladesh on October 4, Azam Khan fearlessly said that the Tk. 74 lakh stashed in their car was being taken to the then railway minister Suranjit Sengupta's house. The money had been collected as a bribe from people seeking jobs in the railway.

That amount was a small part of the whole recruitment business. Apart from APS Faruq, the syndicate included railway's the then general manager (east) Yusuf Ali Mridha and Dhaka division security commandant Enamul Huq. They conducted the whole recruitment process to collect Tk. 10 crore. Azam further said that an army officer was involved in the recruitment

business who wanted to appoint several hundred job seekers in a Tk. 3 crore recruitment deal.

Bangladesh had been tagged as "the most corrupt country" for several years. The policymakers, particularly those among the politicians, have so far responded very little to bring about positive changes in this situation, as some of them are widely perceived to be involved in the process thereof. Corruption is endemic in Bangladesh, and greed seems to be limitless.

We are not saying that only Bangladesh suffers from corruption. Bradley Birkenfeld approached the US Department of Justice in 2007, offering to reveal the inner workings of the giant Union Bank of Switzerland's (UBS) international private-banking division, where he had worked for five years. Some of the details that emerged raised eyebrows, like the revelation that bankers had used toothpaste tubes to smuggle diamonds

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across borders for clients. Having long turned a blind eye to these sorts of shenanigans, the American government came down heavily on UBS. In 2009, the bank avoided criminal prosecution by agreeing to pay a \$780 million fine to the Internal Service Revenue (IRS) of the US.

Rod Blagojevich, former governor of Illinois in the US, is now behind bars, serving a 14-year sentence on corruption charges. He was convicted on 18 counts, including charges that he tried to sell or trade President Barack Obama's old US Senate seat.

It is part of the moral complexity that whistleblowers presuppose that somewhere there is someone with

appropriate authority who will appreciate the moral importance of the disclosure and will respond accordingly. Azam Khan appealed to the head of the government, and expects that Prime Minister Sheikh Hasina, who he believes is against corruption, will not let corrupt people go unpunished.

In her recent speech at the UN General Assembly in New York, Sheikh Hasina renewed her demand for reforming the United Nations, the World Bank (WB) and the International Monetary Fund (IMF) and other international financial institutions (IFIs). It is good to raise questions about their 60-year-old power equations functionalities. But the reform should start from home. Gross ethical violation has been prevailing in Bangladesh during different regimes. Unscrupulous and corrupt people in every sphere of the society are violating rules and regulations frequently.

After signing and ratifying the UN Convention against Corruption (UNCAC) on February 27, 2008, Bangladesh entered into a legal obligation to put in place a framework to deal with a wide array of corrupt practices, develop national institutions to prevent corrupt practices, prosecute offenders, cooperate with other governments to recover stolen assets, and help each other through technical and financial assistance to fight corruption, reduce its occurrence, and reinforce integrity.

Supporters of Awami League may consider Azam Khan as a rising threat to them, but whistleblowers like him are considered as "saviours" who ultimately help to bring about important changes in the system.

The IRS agreed to pay Bradley Birkenfeld \$104 million for his role in exposing the giant Swiss bank's actions -- illegal in America but not in its home country -- in helping American taxpayers hide money in offshore accounts. Azam Khan may not end up with a heavy reward like Birkenfeld, or a smooth exit deal from his opponents, but his bravery will encourage people to stand up against corruption.

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'Take a stand for teachers!'

SHEGUFTA YASMIN

ARISTOTLE once said: "Those who educate children well are more to be honoured than they who produce them; for these only gave them life, those the art of living well."

Since 1994, World Teachers' Day has been celebrated on October 5. Its aim is to strengthen support for teachers and to ensure that they can meet the needs of future generations. "Take a stand for teachers!" is the motto for World Teachers' Day, 2012.

"Teachers are the backbone of a nation" is a saying that we have been hearing from our childhood. But nowadays the scenario has changed in many respects. We see that teachers are fighting for their livelihood and their rights on the streets. In any society, a teacher is a highly respected person, but we find that they are sometimes treated in a most disgraceful manner.

"Teachers ultimately determine our collective ability to innovate, to invent, and to find solutions for tomorrow. Nothing will ever replace a good teacher. Nothing is more important than supporting them," said Irina Bokova, Unesco Director General.

A child's primary school education is the foundation and the builders of this foundation are primary school

teachers. But we see that they are not getting proper salary, which makes it hard for them to maintain their families, so how can they concentrate on building others' foundation when their own foundation is weak? As a result, they have to take to the streets in protest, hold hunger strikes, etc. to try to get their rights. Primary and secondary school teachers' pay scale should be revised as per present economic demands.

A dreadful news item shocked us recently. A female teacher was a taking class when suddenly some armed men entered the classroom and killed her. In another incident a headmaster was critically wounded when he was hit with a hammer. These incidents show how vulnerable teachers are. Nowadays, in general, it seems that our morality, humanity, and other humane qualities are being degraded.

At the university level, teacher-student relationship is very friendly; students follow their ideal teachers and want to be like them. Here, it is the teachers' duty to keep a friendly distance between themselves and the students.

Once, the brightest students joined the teaching profession with high ideals, but nowadays many come into this profession not for any great purpose; they just take it as a profession. After joining as teachers, they

start coaching business and often compel students to come to their coaching centres.

The happy news is that most of the teachers at all levels are still honest, sincere, caring to their students. They only want their students' welfare. Their only prize is that their students honour and respect them.

Alexander the Great had said: "I am indebted to my father for living, but to my teacher for living well." Age after age, teachers have been greatly evaluated by their students and society. We have to keep that place in the society till the last day of the world.

Confucius said: "A true teacher is one who, keeping the past alive, is also able to understand the present." In the same way, we find many teachers who are the makers of mankind, ignoring their own good. In Bangladesh, many school teachers teach all through the year without getting any salary. We salute them.

According to William Arthur Ward, "The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires." Our civilisation has had many great teachers, we need more.

We hope for a better world where every teacher will be regarded as a wealth of a nation.

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