The challenging economics of climate change



SELIM RAIHAN

climate change has become one of the dominant discourses in the scientific and public policy arena. Studies from scientific

research show that global warming is now a real phenomenon, as there has been an unusually rapid increase in the Earth's average surface temperature over the past century, primarily due to the unprecedented accumulation of carbon dioxide resulting from the burning of fossil fuels, together with emissions of other human-induced greenhouse gases. The effect of this temperature rise includes increased frequency of severe weather events (such as heat waves, hurricanes, and tornadoes), proliferated intensity of storms, and sea level rise. These changes, no doubt, pose serious threats to the welfare and existence of mankind and other living things on Earth by impacting the functioning of the ecosystem, biodiversity, and human health.

The economics of climate change refers to the study of the economic costs and benefits of climate change, and the analysis of the economic impact of actions targeting at limiting its effects. However, calculating the economics of climate change is challenging due to the fact that there are huge uncertainties in the estimation of both the costs and benefits related to climate change. The precision of the time horizon, over which benefits and costs of climate change would accrue, is debatable. Also, there are uncertainties over thresholds for climate change impacts and the pace and form of technological innovation that can take shape in the future.

Furthermore, the effects of climate change are not uniform across countries. Different parts of the world are likely to be affected differently: countries closer to North and South poles will experience warmer temperatures and once inhospitable land will experience melting of ice. Small island nations are at risk of extinction due to rising sea levels. Low-

lying islands and countries are at a greater risk of flooding both from rising sea levels and increased precipitation. Countries near the equator are likely to experience unbearable heat. Some of the countries are already experiencing more frequent events of severe weather.

The economics of climate change is further complicated by the fact that most of the developing countries can't afford the costs of mitigation or adaptation. The 2018 Environmental Performance Index (EPI) of Yale University ranks 180 countries on 24 performance indicators across 10 issue

in the discourse on climate change with respect to the policies and actions needed to address the challenges. Two instruments are widely referred to in the policy discussion. The first is the carbon tax, which is the mandatory fee charged for the emission of a given quantity of carbon dioxide or some other greenhouse gas. The second is carbon trading, which is buying and selling of carbon credits—abstract instruments (like money) where each represents the right to emit one tonne of carbon dioxide or an equivalent amount of other greenhouse gases. The

well as in building national capacities to implement these aforementioned instruments.

One important challenge in the economics of climate change is the political economy aspect of it. Both the global and national political economy factors are critical in addressing climate change issues. US President Donald Trump's unfavourable attitude towards the warning of devastating effects of climate change, and eventually the US's withdrawal from the Paris climate agreement, have created uncertainties for a global partnership. At the national



Low-lying countries like Bangladesh are at a greater risk of flooding both from rising sea levels and increased precipitation.

categories covering environmental health and ecosystem vitality. These metrics help provide an estimation at a national scale of how close countries are to establishing environmental policy goals. According to the EPI, most of the developing countries in the south dominate the lower part of the ranking. Among the bottom 10 countries in the ranking, three (Bangladesh, India and Nepal) are from South Asia. Bangladesh's position is 179 out of the 180 countries.

There are also considerable debates

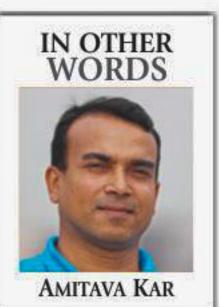
other policies include technology promoting programmes. One other instrument, which is less explored but can be effective, is the liberalisation of trade in environmental goods (EGs), which can play a crucial role in protecting the environment as well as promoting international trade in EGs.

Trade has a positive effect on the environment only if environmental policy advances alongside trade liberalisation. However, most of the developing countries are seriously lagging behind in conceptualising as

level, many developing countries, due to their national priorities of industrialisation and lobbying power of different quarters, find it extremely difficult to contain the polluting industries. Therefore, developing countries have an uphill task in future given the challenging economics of climate change.

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What drives missions to Mars?



N Monday, November 26, NASA landed spacecraft InSight on Mars, after a long and difficult voyage-more than 300 million miles over six months. It is the eighth time NASA touched down on Mars but that did not diminish the significance of the endeavour, because it is the first probe to unearth details of what's under

the surface of Mars. The seven previous missions looked at the surface and the atmosphere. Bruce Banerdt, principal investigator of the project, said, "The basic idea of InSight is to map out the deep structure of Mars."

In order to do that, they will use a seismometer which will measure "Marsquakes." And in so doing, they will know a great deal about the layers that lie beneath the surface. They also have a probe that is going to go down about 16 feet to see how the temperature changes. They believe it will enable them to interpolate that all the way down to the core of the Red Planet.

We know, perhaps from science fiction movies, that the spacecraft has the ability to transmit as it goes down, and it is able to relay information to NASA spacecraft already in orbit. But this time around, things were a little different. InSight had two briefcase-sized spacecraft that were sent flying in formation with it. They served as a relay, sending

25 Sense of self

26 Bee follower

32 Discourage

33 Lyric work

34 Fiesta food

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27 Blow one's top

information back to Earth. Three hundred million miles, sending two suitcases out there, and they end up in the right place. Mindboggling.

TV channels around the globe telecast the eruption of joy at the home base. Did the viewers realise what went on inside their brains? They were nervous. Nothing could go wrong. The spacecraft must split up, the back shell must come off, the parachute had to deploy, the landing equipment had to go down, the radar had to function, the engines had to start and heat shield had to go away. And all these things had to happen in seven minutes, the exact time for the landing. The precision was hair-raising.

The goal is to learn about how Mars-and in turn other planets in our solar system—formed over billions of years. Ultimately, the idea is to put human footprints on Mars. The more humans know about the place, the better they can think about what to do to sustain life there.

The Red Planet has for a long time inspired explorers and scientists. Robotic missions have found signs of water, but whether life exists beyond Earth still remains unknown. Mars has a history and many characteristics similar to Earth's. Scientists are trying to build on this knowledge, leading to research that could be put to use here on Earth.

A mission to our closest planetary neighbour is useful in more ways than one.

The experiment of travelling to Mars and learning how to inhabit it motivates nations to work together to achieve such an ambitious undertaking. And it provides a global sense of

community based on knowledge.

Human curiosity about space is timeless. We are wired to leap into the unknown, discover new worlds, push the boundaries of knowledge, and then push even further. It is this doughty desire to explore and challenge the limits of what we know and where we have been that has advanced the human civilisation. Societies that encourage people to be curious about ideas move forward.

Space exploration such as the one commenced by InSight helps tackle fundamental questions about our place in the Universe. It proves how intelligent humans have become over time. But I think that it also reminds us how small humans are compared to the Universe which keeps expanding.

If missions to Mars make us more confident, they must also teach us humility. Astronaut, academic and best-selling author Carl Sagan once said, "Who are we? We find that we live on an insignificant planet of a humdrum star lost in a galaxy tucked away in some forgotten corner of a universe in which there are far more galaxies than people."

Growing up in the late '80s, many of us watched a series on BTV called "Cosmos", written and presented by Carl Sagan. We were spellbound to hear him talk about the vastness of the Universe. And the show helped expand the horizon of those who watched it.

Today, Bangladesh boasts of having her national flag hoisting in space. But we wonder if BTV shows programmes like "Cosmos" anymore.

Amitava Kar is a member of the editorial team at The Daily Star.

A fearless woman warrior

AASHA MEHREEN AMIN

HE passing away of Bir Protik Taramon Bibi quietly in her home in Rajipur Upazila, at age 61, only 16 days before the commemoration of Victory Day, is truly a tragedy for us. For she was one of our few living heroes who could tell the tale of a freedom fighter, battling against a ferocious enemy, far less equipped in terms of arms, training or experience, far more passionate in the steadfast determination to free one's motherland from the clutches of oppression.

We don't know whether she received the best medical treatment for her respiratory problems or diabetes. We do not know what hardship she suffered all those years after the war when she remained traceless until a determined researcher found her. It is tragic because there are so few women freedom fighters whom we know of and who have been able to share their stories, so few who have been recognised for their truly heroic deeds.

And Taramon Bibi, a restless tomboy, managed to convince her mother to let her, a lanky young girl in her teens, to join the war for freedom. In an interview Taramon describes how she met Muhib Habildar, a freedom fighter, her mentor and godfather, who persuaded her to help his fellow Muktijodhhas in a camp in her village home Shankar Madhabpur Kurigram.

Her initial job was to cook for the freedom fighters in the camp which she was happy to do but soon her comrades realised she was ready to take on far more serious tasks. Pretending to be a mentally challenged woman by smearing dirt on her hair, Taramon would go near the enemy camp to get information for her comrades. She would nimbly climb the betel nut trees and use her binoculars to spot the approaching enemy and alert her comrades. Impressed by her fearlessness, Muhib started to train her in how to use a rifle and stein gun—training that came to great use in various operations.

The memory of the first time she went into direct combat was always very vivid for Taramon. During one of her vigils she spotted a gunboat carrying the Pak army heading towards where they were located. Taramon got prepared for combat with her comrades, and together, they succeeded in getting rid of the enemy. After that, Taramon had to fight with arms on many occasions and was often praised by the other Muktijoddhas for being a good marksman. In those days, she never thought about the risks involved in what she was doing. "We were fighting to



Taramon Bibi, Bir Protik (1957-2018) PHOTO: MOZAMMAL HOQUE/YOUTUBE

free our country," she said in an interview, "the last thing on my mind was worrying about my own safety."

She was totally committed to the cause of freeing her motherland just like so many other men and women at the time. Once when Taramon and her camp mates were hiding in the bunkers when the enemy changed their strategy and started an air-bombing onslaught. The Pak army raided the camp a few times and hurled bombs killing several people. But fortunately, Taramon escaped death. She had been in Sector 11 under the leadership of Sector Commander Abu Taher, Bir Uttam.

Bangabandhu Sheikh Mujibur Rahman's government honoured her with the Bir Protik title in 1973 for her courageous role in resisting the Pakistan occupation forces with weapons. She had been given an award of gallantry yet she had no idea she had received such an honour. After the war, nobody knew of her whereabouts.

It was in 1995, 24 years after she had helped to liberate her country, that a researcher Bimal Kanti Dey found her and she received her title Bir Protik and a medal of honour from the government. Although she had helped to win a war, her personal life was one of struggle with her husband, a landless farm labourer, and two children to raise, while she battled with tuberculosis.

She was one of the two gallantry award-winning women freedom fighters. Taramon was laid to rest in her family graveyard at Kacharipara in Rajibpur with state honours. It was a befitting farewell to a brave hero who passed most of her life like many of her other fellow Muktijoddhas, in financial hardship and poor health, but unwavering in their love for their motherland.

Aasha Mehreen Amin is Senior Deputy Editor, Editorial and Opinion, The Daily Star.

ON THIS DAY IN HISTORY



December 3, 1989 OFFICIAL END OF THE COLD WAR

Soviet President Mikhail Gorbachev and US President George H. W. Bush declared that the Cold War was over in a meeting in Malta, just a few weeks after the fall of the Berlin Wall.

CROSSWORD BY THOMAS JOSEPH

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BY MORT WALKER

BY KIRKMAN & SCOTT

BABY BLUES SO, THE NEW NEIGHBOR YEAH? SEEMS NICE.

