

Frothing in River Yamuna

For the last decade, frothing has been observed in River Yamuna and the same has been on the rise for the last 5 years. This is seen as a major indicator of degrading of Yamuna River Ecosystem. Both physical and chemical factors are responsible for the phenomenon.



Why is River Yamuna Frothing?

Froth means a mass of small bubbles on a liquid surface. It is also referred to aggregation of bubbles on an agitated liquid. Since Yamuna River water falls from a great height in Okhla barrage, it leads to bubble formation. Also, during winters the temperature dips to near zero. Hence, foam formation is accompanied. The chemical factors responsible for foam formation and frothing is Ammonia increase from untreated household waste containing detergent and phosphorous increase in effluent released from industries etc. The froth on Yamuna river reflects the adverse impact of manmade activities on environment and urgent steps are to be made on this regard to prevent further deterioration.

How and where do the effluents enter River Yamuna?

Most of the pollution of river Yamuna comes from Wazirabad where it enters Delhi. According to the Delhi Pollution Control Committee and the CPCB (Central Pollution Control Board), 90% of the domestic wastewater in the city flows into river Yamuna. Around 58% of the waste of the national capital is dumped into the river. The waste water mainly comes from household activities and therefore it is highly rich in phosphate compounds, laundry chemicals and detergents.

The samples collected show that the phosphate concentration in the river is 0.51 mg/litre. It should be between 0.005 and 0.05 mg/litre.

More than 800 million litres of untreated sewage is dumped into Yamuna every day. Also, around 44 million litres of industrial effluents are discharged in to the river. CPCB says that the river water contains 1.1 billion faecal coliform bacteria per 100 millilitres of water. The permissible level is 500 coliform bacteria per 100 millilitres.

UK: First country to launch COVID-19 vaccine

The United Kingdom has become the first country to roll out the covid-19 vaccine in the world. The British government recently rolled out the covid-19 vaccine developed by Pfizer and BioNTech.

What is the plan?

More than 70 Hospital hubs in the United Kingdom are to inoculate people over 80 years. The vaccine is to be provided as two injections within a time gap of 21 days. The person administered with the vaccine will obtain complete immunity after seven days of the second dose.

Russia and China

China and Russia have started to provide vaccine to their population before even completing the final safety and efficacy trials.

COVID-19 vaccine

According to the World Health Organization, the average time taken for a vaccine to become publicly available till now has been 16 years. The vaccine that comes close to COVID-19 vaccine has been the mumps vaccine. The mumps vaccine took four years to get all necessary permissions and licensing.

Pfizer Vaccine

The Pfizer vaccine evaluated more than 94 COVID-19 infections among the 43,538 participants. The Pfizer vaccine uses mRNA technology. It has proved well above 50% of effectiveness as set by the US Food and Drug Administration for a COVID-19 vaccine.

Why is Oxford Vaccine better than the Pfizer vaccine?

The Oxford Vaccine showed better efficacy than the Pfizer vaccine. The Moderna and Pfizer BioNTech vaccine must be transported at negative 20 to 80 degree Celsius unlike Oxford vaccine. The Oxford vaccines can be refrigerated at normal two to eight degrees Celsius.

The Pfizer has to mandatorily distribute its vaccine in a specially designed “thermal shipper” that uses dry ice to maintain the negative eighty degrees Celsius.

Also, it was recently proved that half dose of Oxford vaccine is likely to give higher protection. This will make more doses available to the general public.

Urban Governance Index

: The Praja Foundation recently released the Urban Governance Index. Odisha topped the list of states and Manipur and Nagaland were at the bottom.

Urban governance index

According to the Urban Governance Index Odisha was followed by Maharashtra and Chhattisgarh. Delhi rank 13th in the list. The states were marked between 0 and 100 based on the themes empowered City administration, elected representatives and legislative structure and empowered citizens and physical empowerment.

Maharashtra scored 55%, Odisha scored 56%. The Other top performers were Chhattisgarh with a score of 49.68%, Kerala with a score of 48.77% and Madhya Pradesh with the score of 45.94%.

Inadequate infrastructure and Service Delivery are the major issues that continue to impede cities to achieve their true economic potential.

About the index

The ranking was done based on urban governance reforms. In order to create the index the Praja Foundation conducted a study for three years across 40 cities and in the national capital territory. The ranks have been awarded to the states based on their local self-Government and grassroot democracy.

According to the findings of the study none of the states could score 60 out of hundred. This indicates that the municipal bodies are lagging to provide effective governance at the local level. The study also said that not a single state has evolved all the 18 functions to the municipal bodies in spite of the fact that it has been 28 years after Parliament passed the constitutional amendment on municipalities. The 74th constitutional amendment was enacted in 1993 that recognized Municipal governments.

The 18 functions include regulation of land use, urban planning, planning for economic and social development, fire service, water supply, protection of the environment, urban Forestry, promotion of ecological aspects, etc. These functions aim to empower the local urban bodies and democratic decentralization of the local governance.

Climate Change Performance Index

The Global Climate Change Performance Index was recently released by the New Climate Institute, Germanwatch and CAN (Climate Action Network). The index has been rating the fifty-seven greenhouse emitters in the world since 2005. These countries account to 90% of global emissions. The index aims to enable comparison of mitigation efforts, enhance transparency in international climate politics.

Key Findings

India remained in the top ten in the Climate Change Performance Index for the second consecutive year. China, one of the largest contributors of greenhouse gases ranked 33rd. In 2020, India slid a position to the tenth. India was at 31st rank in 2014.

According to the index, only two G20 countries India and UK were among the high rankers. The rest of the six such as Saudi Arabia, USA, South Korea, Australia and Russia were at the bottom of the index.

None of the countries were in top three ranks. This was because none of the countries were in the path of meeting their Paris Agreement commitment. Sweden was at fourth place followed by UK, Denmark, Morocco, Norway, Chile.

About the Index

The index is prepared by assessing the performance of fifty-seven countries in four categories namely renewable energy, GHG emissions, climate policy and energy use.

India's responses to Climate Change

India launched the National Action Plan on Climate Change to address climate adaptation and climate mitigation

The National Clean Energy Fund was launched in 2010 to promote clean energy initiatives.

India made three commitments under Paris Agreement

The Greenhouse Gas Emissions of India will be reduced by 33% to 35% by 2030 below to that of 2005 levels.

40% of power capacity of India will be based on non-fossil fuel sources.

India will create a carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent additional forest cover by 2030.

India founded International Solar Alliance at the United Nations Climate Change Conference.

Tharu Tribals

The Uttar Pradesh government has recently launched a scheme to take the unique culture of the Tharu tribes all over the world. The intention of the scheme is to put these tribal villages on tourism map. This will create jobs and bring economic Independence to the tribal population in the region.

What is the plan?

The State Government of Uttar Pradesh is planning to connect the villages of the Tharu tribals located in the International border of Nepal. It is a Homestay scheme under which the Uttar Pradesh Forest Department will offer tourists an experience of living in the natural habitat of Tharu tribals. These huts are made of grass collected from the forest.

Uttar Pradesh Forest Department will train the Tharu tribals to communicate with the tourist. They will also encourage the tribals to acquaint with aspects of cleanliness and safety.

The Tharu tribals shall also charge the tourists for their home cooked meals and accommodation. The participation of both domestic and international tourists are expected under the scheme. Several tourists are interested to obtain the taste of tribal culture by staying with them, observing their food habits, lifestyle and attire.

About the Tharu tribals

They belong to the lowlands located in the Shivalik or the lower Himalayas. Most of these people are forest dwellers practicing agriculture. The word Tharu means Followers of Theravada Buddhism.

The Tharu tribals are distributed both in Nepal and India. In India they are mostly distributed in Bihar, Uttarakhand and Uttar Pradesh. According to the 2011 census, the total Scheduled tribe Population of Uttar Pradesh was 11 lakhs. This is expected to have increased to 20 lakhs now. The Tharus tribes how major contribution to the increase in tribal population in the state.

Unique practices

The Tharu tribals speak Tharu language. It is a language of the Indo Aryan subgroup and the variant of Urdu, Hindi and Awadhi. The Tharu of Nepal speak a variant of Bhojpuri. Peace tribals worship Lord Shiva as Mahadev. Take all their Supreme being Narayan. According to them Narayan is the provider of rain, sunshine and harvest. The Tharu women have stronger property rights than those provided to the women in the mainstream North Indian Hindu customs.

They consume beef and alcoholic beverages. A standard Tharu plate consists of Dhirki or Bagiya, which is a steamed dish of rice flour. It is eaten with Ghonghi, an edible snail.

What is Havana syndrome?

Context in Current Affairs: The National Academy of Sciences has recently found that the microwave radiation is the major cause of the mysterious neurological illness called Havana syndrome. The Havana syndrome started to infect the American diplomats and intelligence officials located in China, Cuba and other countries for more than four years now. However, the state department has not publicly pointed to microwave weapons as the cause of the syndrome.

What are microwave weapons?

These weapons are direct energy weapons that produce highly focused energy in the form of laser or microwaves. The victims of these weapons report a buzzing sound or a clicking sound constantly coming from the inside of their head. These weapons have long-term and acute damages without any signs of physical damage.

What is Havana Syndrome?

In 2016, the US Diplomats and intelligence officials placed in Havana reported to hear strange sounds and physical sensations in their homes and hotel rooms. The strange physical sensations were accompanied with severe headache, nausea, dizziness, fatigue, hearing loss and sleep problems. Since then the condition came to be known as Havana syndrome.

So far more than two dozen American diplomats and their family members in China and Cuba have reported to have experienced such symptoms.

Key findings of the National Academy of Sciences report

The National Academy of Sciences report said that there are four possibilities that might have caused the symptoms. They are chemicals, infection, psychological factors and microwave energy. However, the report concluded that the most plausible mechanism that might have caused the syndrome is the directed pulse radiofrequency energy. By using the words directed and pulsed, the report concludes that the victims were targeted and were not affected from a common source of microwave energy.

Feminisation of Red Sea Turtles

The turtle population in Red Sea is turning female due to rise in sea temperature. A Team of researchers from the Saudi Arabia King Abdullah University of Science and Technology conducted a study. They selected five sites in the region that are favoured by Green Turtles and Hawksbill.

The researchers collected data for every fifteen minutes for five months. According to the researchers, to maintain 50:50 ratio of males and females population, temperature of 29.2 degrees Celsius is required. Above this temperature, the turtle hatchlings will predominantly be female. The researchers during the study found that the temperature at four out of the selected five sites exceeded 29.2 degrees Celsius.

Conservation of Turtles

Different turtles are classified differently by IUCN. The classification is as follows

- The Loggerhead and Green Sea Turtles are classified as “Endangered”. Their population have declines by 50% in the last ten years
- Leatherback Turtles and Oliver Ridley Turtles have been classified as “Vulnerable”.
- Leatherback Turtle in Northwest Atlantic has been classified as “Endangered”.
- Green Turtle, Kemp’s Ridley Turtle and Hawksbill turtle have been classified as “Critically endangered”. According to IUCN, 80% of these turtles were lost in the last 10 years.

Conservation of Turtles in India

In India, the Green Turtle and Hawksbill turtles are listed under Schedule I of the Wildlife Protection Act, 1972. Turtles are also protected under the Biodiversity Conservation and Ganga Rejuvenation programme. India has five species of turtles. They are Olive Ridley, Loggerhead, Leatherback, Green Turtle, Hawksbill.

World Turtle Day

Every year World Turtle Day is celebrated on May 23. In 2020, the day was celebrated under the theme “Adopt, Don’t Shop”. The World Turtle Day is organised by the Non-Profit Organization called the American Tortoise Rescue. It is being observed by the National Mission for Clean Ganga and the Wildlife Institute of India as well.

Argentina parliament has imposed ‘millionaire tax’ on about 12,000 of the country’s richest people to fund coronavirus countermeasures. Under this scheme, people with declared assets worth more than 200 million pesos will pay a progressive rate of up to 3.5% on wealth in Argentina and up to 5.25% on wealth outside the country. The revenue arising from this tax will be used to finance health, social development, student scholarships and natural gas ventures. This is being done to bring relief to the poor and the small businesses in the country. The millionaires’ tax is a one-time contribution. It will help Argentina with about 3.7 billion USD. The funds collected through these taxes are to be allocated to small and medium business, medical equipment and supplies, fund natural gas projects and support students and social programs. The split of the funds in These areas are are as follows

- 20% will go to the medical supplies
- 20% to small and medium sized businesses
- 20% to students scholarships
- 15% to social development
- 25% to natural gas Ventures

This scheme is to affect 12000 taxpayers. However, it will boost the overall economy of the country

Background

Argentina has a population of 44 million and around 1.4 million are badly affected due to covid-19 according to Johns Hopkins University. Also, Argentina is currently facing third straight year of recession. The economic activity in the country has declined to 12% in 2020.

New Jersey

Similar law was passed by New Jersey of United States of America. In September 2020 the New Jersey government boosted the tax rate of the New Jersians owning more than 1 million USD annually. Their tax rates were boosted from 8.97 percent to 10.75%. Earlier 10.75% of tax rate was applied only to people earning more than 5 million USD annually. However, the term millionaire’s tax was introduced in 2004 in New Jersey.

India

In India, the wealth tax was abolished in 2016. It was replaced with a 2% surcharge on super-rich individuals in the country. The super-rich individuals are those whose income is greater than Rs 10 crore annually.

Bhashan Char Island

The Bhashan Char Island is a remote uninhabited island of Bangladesh, located in the Bay of Bengal. It is also known as Char Piya. Around thousands of Rohingyas from Cox's Bazar refugee camp are being shifted to the newly developed facility in the island. Humanitarians oppose this move fearing poor liveable conditions in the new island and demand for independent assessment by the United Nations. Environmentalists warn that the island is ecologically fragile and prone to floods and cyclones.

About the island

- The island, which spans for an area of 40 square kilometers is believed to have formed only in 2006, by Himalayan silt.
- The Bangladesh Government is relocating the Rohingya refugees to this island, which is located 60 kilometers from the mainland.

What is the issue around safety of the Bhashan Char Island?

The Bhashan Char Islands are also called the Floating Islands. They are formed from the Himalayan silt washed down from the Himalayas. The island was formed recently within 10 year of span. But according to the environmentalists, it is already eroding at the rate of half a kilometre per year. The environmentalists believe that the island is prone to cyclones and erosion.

However, the recent Amphaan cyclone proved the safety of the Island according to the Bangladesh officials.

Other Concerns regarding the island

The island will become inaccessible during floods and rough weather. The camp is to depend on rain water collection and underground tanks. The Forestry Department of Bangladesh have been planting mangroves since the proposal of the project began. However, around 5,000 to 7,000 acres of the forest have disappeared in to the sea during the same time period due to natural disasters.

The Government of Bangladesh is building a flood defence system in the island. Two long dams are being constructed under the protection system. The outer one being 12 feet high and the inner being 33 feet high.

Azad Pattan Hydropower Project

The Azad Pattan project is a hydropower project that is to be constructed in Pakistan occupied Kashmir. It is to be built on the Jhelum River and will have the capacity to generate 700 MW of hydroelectricity. This is a 1.35 billion USD project that is to be jointly undertaken by China and Pakistan as a part of the China-Pakistan Economic Corridor (CPEC). The CPEC is a flagship project of the Chinese government that connects Gwadar Port of Pakistan and Xinjiang of China.

About Azad Pattan Hydropower

It is one of the five hydropower schemes to be built on the Jhelum river. The other four are Kohala, Mahl, Karot and Chakothi Hattian. Of these, Kohala, Azad Pattan and Karot are to be developed under CPEC network. Azad Pattan is to be commissioned by 2024.

It is a run-of-the river scheme. Under the run-of-the-river scheme, the river water is diverted from a flowing river and guided down a channel that leads to a generating house.

What are the Concerns of India regarding Azad Pattan?

- The dam is to be constructed in the region that is under dispute between India and Pakistan. India had also objected the construction of Diamer-Basha Dam across Indus river in Gilgit-Baltistan region.
- According to India, China and Pakistan are consolidating their presence in the region.
- The projects being implemented in the Pakistan occupied Kashmir do not follow international norms.
- These projects provide geopolitical leverage to the Chinese in the western Indian Ocean region.
- This will strengthen China's strategy of using its economic power to increase its geopolitical leverage. Earlier the same strategy was used in Iran. China and Iran had gone ahead with the Chabahar rail project without India's assistance. The countries cited funding delay from India for their move. Chabahar was India's move to counter China-Pakistan Economic Corridor.

1. The Indian Railways is to use LiDAR technique to conduct ground survey for the Delhi Varanasi High Speed Rail corridor. LiDAR is Light Detection and Ranging technique.

The length of the Delhi Varanasi corridor is about 800 kilometres and the alignment of stations is to be decided based on the survey and in consultation with the government. The corridor is to connect the national capital territory with major cities such as Agra, Lucknow, Mathura, Prayagraj, Raebareli, Etawah, Bhadohi, Ayodhya and Varanasi.

LiDAR It is a remote sensing method that uses light in the form of pulsed laser to measure available distances in the earth. The light pulses in the system generate three-dimensional information about the shape of the earth and its surface characteristics. A LiDAR instrument consists of a scanner, laser and a GPS receiver. Helicopters and aeroplanes are the most commonly used platforms to acquire LiDAR data.

2 **Swasthya Sathi scheme** is a health insurance scheme of the West Bengal government. It was launched in 2016 and it has now been expanded to cover the state's entire population. It provides basic health cover for secondary and tertiary care up to 5 lakh INR per annum per family. Both state-run and private hospitals are part of the scheme. The card under the scheme is issued to the female guardians of the families.

3 The cyclone Burevi, named by Maldives, hit the Karaikal coast of Tamil Nadu 7 days after cyclone Nivar. This is the third cyclone formed within the last 10 days in the Bay of Bengal and Arabian Sea put together.

Cyclone Burevi is the third cyclone to hit Tamil Nadu in two years after Cyclone Gaja in 2018 and Cyclone Nivar recently. It is the fifth cyclone that has taken shape in the North Indian ocean region in 2020. The other four cyclones were Cyclone Gati, Cyclone Nisarga, Cyclone Nivar and Cyclone Amphan.

Cyclone Gati made landfall in Somalia in November 2020.

Cyclone Nisarga

Cyclone Nisarga made its landfall in Maharashtra in June 2020.

4 According to the India Meteorological Department's (IMD's) Statement on Climate of India During 2019 report, the number of cyclones in the Arabian Sea was 400% higher than normal frequency because five out of eight cyclones affected Arabian Sea. These five cyclones were Vayu, Hikka, Kyarr, Maha and Pavan.

5 Jim Corbett, the oldest National Park of India, has set up the country's first quarantine facility for animals. The national park is situated in Paurhi Garhwal region in the state of Uttarakhand. After a Malayan tiger was tested positive for COVID-19 in Bronx zoo in the United States, the Indian park has started to set up about 10 quarantine centres within its premises to isolate animals. The cages built for wild animals are also to be converted into quarantine facility.

6 A team of Indian herpetologists, who study about amphibians and reptiles, have recently discovered a new species of viper family.

The green pit viper, which was found at the Pakke Tiger Reserve in Arunachal Pradesh, has been named after Salazar Slytherin, a fictional character of the Harry Potter series, as *Trimeresurus Salazar*. The male viper has orange to reddish stripe on its head and body.

7 The Scientists from Wadia Institute of Himalayan Geology (WIHG), Dehradun have recently found that glaciers in Sikkim are melting at a higher magnitude than other Himalayan regions. The Institute is an autonomous research institute for the study of Geology of the Himalayas, under the Department of Science and Technology.

8 The Central Pollution Control Board (CPCB) has recently raised concern on pollution and frothing in Yamuna River.

The body has asked Delhi, Uttar Pradesh, Haryana and other states to implement effective sewage treatment. Increase in ammonia level from untreated water and industrial effluents containing phosphorous are the two main reasons for frothing.

9 The Union ministry of road transport and highways has recently launched an online monitoring portal named 'GATI'. The new portal is created by the National Highways Authority of India (NHAI) is on the lines of the PRAGATI portal used by the Prime Minister Office for monitoring the government proposals and projects.

The GATI portal can be accessed from the NHAI website and contractors, in which the project related issues can be raised. The portal will be continuously monitored by a team of NHAI officers and the issues raised will be immediately taken up.

10 On 23 March 1931, young Indian freedom fighters Bhagat Singh, Sukhdev and Rajguru were hanged to death at Lahore in today's Pakistan. This day is observed as Shaheedi Diwas (Martyr's Day) throughout the nation.

The state government of Punjab has been commemorating the Martyrs Day, which falls on March 23, as the 'Youth Empowerment Day'. January 30, the death anniversary of Mahatma Gandhi is also observed as Martyr's day in India.