

## My Notes....

### NATIONAL

#### WORLD PRESS FREEDOM INDEX 2019

India dropped two places to be ranked 140th out of 180 countries in the global press freedom index analysis released 18 April 2019 by Reporters Without Borders. Topped by Norway, the 'World Press Freedom Index 2019', reveals an increased sense of hostility towards journalists across the world, with violent attacks in India leading to at least six Indian journalists being killed in the line of their work last year.

#### What

- Violence against journalists** – including police violence, attacks by Maoist fighters and reprisals by criminal groups or corrupt politicians – is one of the most striking characteristics of the current state of press freedom in India.
- At least six Indian journalists were killed in connection with their work in 2018. A number of doubts surround a seventh case, the index noted.
- These murders highlighted the many dangers that Indian journalists face, especially those working for non-English-language media outlets in rural areas.
- Attacks against journalists by supporters of ruling BJP increased in the run-up to general elections in the spring of 2019, the analysis alleged.
- Referring to India, the report found an alarming rate of “coordinated hate campaigns waged on social networks against journalists who dare to speak or write about subjects that annoy Hindutva.
- Finally, coverage of regions that the authorities regard as sensitive, such as Kashmir, continues to be very difficult. Foreign reporters are barred from Kashmir and the Internet is often disconnected there.
- Paris-based **Reporters Sans Frontieres (RSF)**, or Reporters Without Borders, is a non-profit organisation that works to document and combat attacks on journalists around the world.
- If you consider South Asia in general, it features poorly on the press freedom index, with Pakistan dropping three places to 142, and Bangladesh dropping four places to 150.
- Norway is ranked first in the 2019 Index for the third year** running while Finland (up two places) has taken second place from the Netherlands (down one at 4th).
- In Africa, the rankings of Ethiopia (up 40 at 110th) and Gambia (up 30 at 92nd) have significantly improved from last year's Index.
- Vietnam (176th) and China (177th), placed at the bottom of the Index, have fallen one place. Turkmenistan (down two at 180th) now occupies the last place, replacing North Korea (up by one at 179th).

#### 2019 Press Freedom Index

Postion	Country	vs. 2018
1	 Norway	1 (0)
2	 Finland	4 (+2)
3	 Sweden	2 (-1)
...		
13	 Germany	15 (+2)
...		
179	 Eritrea	179 (+1)
179	 North Korea	180 (+1)
180	 Turkmenistan	178 (-2)

## MISSILE DESTROYER IMPHAL LAUNCHED

The **Indian Navy** on 20 April 2019 launched **guided missile destroyer Imphal** at **Mazagon Dock Shipbuilders in Mumbai**. Imphal, **the third ship under Project 15B**, successfully slipped into the waters, eliciting huge cheers and slogans of "Bharat Mata Ki Jai" and Vande Mataram from the huge crowd of staffers and officials that had assembled.

### What

1. **Warships built under Project 15Bravo**, with a **length of 163 metres** and **17.4 metres at the beam** and a displacement of 7,300 tonnes, are propelled by **four gas turbines** to achieve speeds in excess of 30 knots. Ships under this project can carry and operate two multiple role helicopters.
2. **Enhanced stealth features** have been achieved through the shaping of hull and use of radar transparent deck fittings which make these ships difficult to detect.
3. The **first ship of Project 15B**, a guided missile destroyer christened '**Visakhapatnam**', was launched on April 20, 2015.
4. **Project 15B ships** feature cutting edge advanced technology and are comparable to the best ships of similar class anywhere in the world.
5. These ships have been designed indigenously by the Indian Navy's Directorate of Naval Design, New Delhi. Each ship spans 163 metres in length and 17.4 metres at beam and displaces 7,300 tonnes.
6. **The P15B** destroyers incorporate new design concepts for improved survivability, sea keeping, stealth and manoeuvrability.
7. These ships are packed with an **array of state-of-the-art weapons and sensors**, including multi-functional surveillance radars and vertically launched missile system for long distance engagement of shore, sea-based and air targets.
8. With significant indigenous content, these ships are a true hallmark of self-reliance attained by our country in warship design and shipbuilding, and a shining example of the '**Make in India**' philosophy.

- **INS Imphal has been designed indigenously by the Indian Navy's Directorate of Naval Design, New Delhi.**
- **The Project 15B (Visakhapatnam class) is a class of stealth guided missile. Union Government in 2011 had sanctioned four 15B ships at the cost of 29,700 crore rupees.**
- **The class comprises four ships - Visakhapatnam, Mormugao, Imphal and Porbandar.**

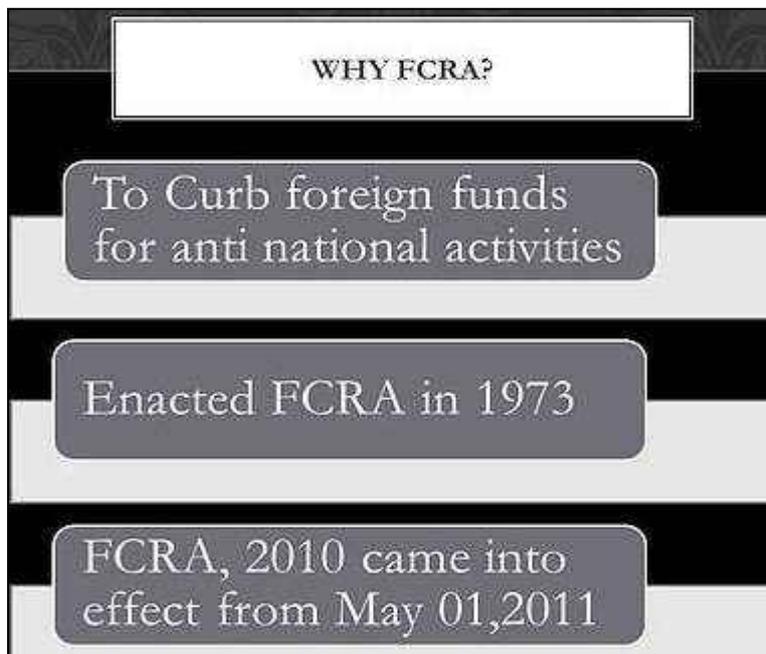
## FUNDING FROM ISA NO ROUTED UNDER FCRA

The **International Solar Alliance (ISA)**, a world body aimed at **providing a dedicated platform for cooperation among solar resource-rich countries**, will no longer be treated as a "**foreign source**" of funding for Indian NGOs and other entities under the **FCRA**. The Union Home Ministry officials said the decision has been taken as part of India's dedicated efforts to assist and help achieve the goal of increasing the use of solar energy in meeting energy needs.

### What

1. **The ISA was jointly launched** by Prime Minister Narendra Modi and the then France President Francois Hollande in **Paris in 2015**.
2. In exercise of the power conferred by sub-clause (ii) of clause (j) of sub-section (1) of section 2 of the **Foreign Contribution [Regulation] Act (FCRA), 2010** [42 of 2010], the central government hereby specifies that the international organisation, namely, the '**International Solar Alliance**' shall not be treated as '**foreign source**' for the purposes of the said Act, a Home Ministry notification said.
3. This means **funds coming to NGOs and other entities from the ISA will not be governed by the FCRA**.

4. The ISA is the first full-fledged treaty-based international intergovernmental organisation **headquartered in India (Gurgaon)**.
5. It is an alliance of **121 solar resource-rich countries**, lying fully or partially between the Tropics of Cancer and Capricorn.
6. **So far, 74 countries have signed** it and 52 of them have ratified it to formally join the organisation.
7. The vision and mission of the organisation is to **provide a dedicated platform for cooperation among solar resource-rich countries** where the global community, including bilateral and multilateral



- organisations, corporates, industry and other stakeholders, can make a positive contribution to assist and help achieve the common goals of increasing the use of solar energy in meeting energy needs of prospective ISA member countries in a safe, convenient, affordable, equitable and sustainable manner.
8. Addressing the first assembly of the ISA in New Delhi last year, Prime Minister Modi said that in the last 150 to 200 years, mankind has depended on fossil fuels for energy needs but nature is now indicating that options such as solar, wind and water offer more sustainable energy solutions.
  9. In this context, Modi expressed confidence that in the future, when people talk of organisations for the welfare of mankind established in the 21st century, the International Solar Alliance will be at the top of the list.
  10. He said it was a great forum to work towards ensuring climate justice and the ISA could replace the OPEC as the key global energy supplier in the future.

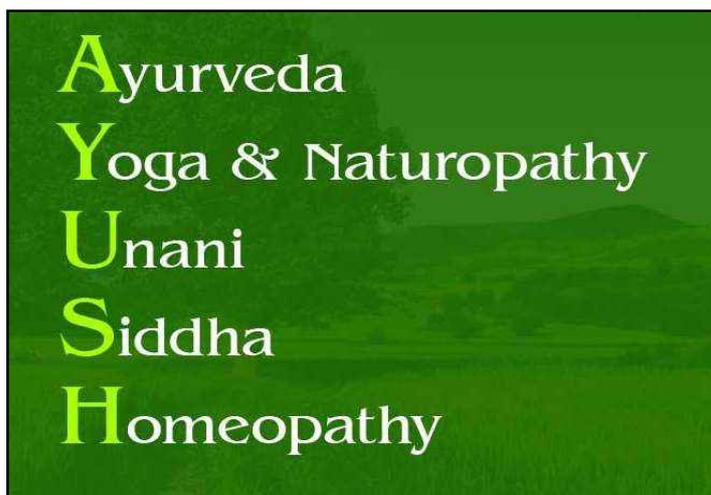
## MINISTRY OF AYUSH AND CSIR

A **Memorandum of Understanding (MOU)** was signed **between the Ministry of AYUSH and Council of Scientific and Industrial Research (CSIR)**, New Delhi on 22 April 2019 for **cooperation in research and education in areas of traditional systems of medicine** and its integration with modern science. The **combination of traditional healthcare and modern basic science** has a huge possibility to do innovative and path-breaking researches which can be used for the explanation of various basic concepts.

### What

1. **Futuristic efforts of this inter-ministerial cooperation** shall include pursuit of Data mining & analytics and Artificial Intelligence to enable and facilitate concepts such as **“Traditional knowledge inspired drug discovery and development”** and **“Food as Medicine”**.
2. Previously, **CSIR jointly with Department of AYUSH (now Ministry)** developed the **Traditional Knowledge Digital Library (TKDL)**, a globally recognized proprietary database on Indian systems of medicine for preventing bio-piracy and misappropriation of our traditional knowledge.

3. The constituent laboratories of CSIR and councils of the Ministry of AYUSH have also supported each other in the development of improved varieties and captive cultivation of the medicinal plants including **rare, engendered and threatened species** (RET), Botanical Reference Standards and Pharmacopoeial standards, and Ayurgenomics, among many others.
4. In due cognition of the upward surge in the usage of herbal medicines and supplements globally, the endeavor of Ministry of AYUSH and CSIR is to bring the organizations under an umbrella understanding for pursuing focused R&D efforts in the domain.



**Under the MoU, both organizations shall jointly endeavor to pursue:**

1. R&D covering fundamental research
2. AYUSH specific diagnostic tools
3. Linking microbiome, gene expression and prakriti
4. Multi-ingredient herbal formulations, including their standardization
5. Exploring modern scientific methods for integration with traditional **Indian Systems of Medicine (ISM)**
6. Linking disease signatures; etc.
7. Furthering the collaboration in preserving and protecting traditional knowledge related to the Indian systems of healthcare, through the **existing TKDL platform**
8. Development of international standardized terminologies (disease-morbidity codes) in **Ayurveda, Siddha and Unani (ASU)**, Database on Medicinal plants, Foods, etc.

## ANTI SUBMARINE WARFARE EXERCISE

**Indian and the US Navies** have held a joint submarine-hunting exercise in the Indian Ocean, **aiming to lay the groundwork for coordinating maritime patrol** and reconnaissance, according to the US Navy. **Indian and the US' P-8 anti-submarine aircraft**, along with the USS Spruance, a guided-missile destroyer, participated in the anti—submarine warfare training on April 15, a US 7th Fleet press statement issued from Diego Garcia said.

### What

1. **The Indian P-8I Neptune aircraft from the Naval Air Squadron 312** based at Naval Station Rajali in Arakkonam, Tamil Nadu, joined the **US P-8A Poseidon aircraft from Patrol Squadron VP-8 "Fighting Tigers"**, based in Jacksonville, Florida, in the exercise.
2. We look forward to developing useful lessons through this engagement and laying the groundwork for future integration efforts between our Maritime Patrol and Reconnaissance Forces.
3. **The Spruance and VP-8 are operating with the 7th Fleet**, which is the largest forward deployed fleet of the US and operates in the Indo-Pacific region, which is the focus of India-US strategic cooperation.
4. The exercise was the latest in efforts to develop military coordination between the two countries with an eye on the Indo—Pacific, where China is projecting its naval strength to the consternation of other countries in the region.

5. **India, the US and Japan conducted Operation Malabar off the Guam coast last June.** Started in 1992 as an India—US exercise, Japan joined it in 2015 turning it into a trilateral cooperation.
6. The **13th Marine Expeditionary Unit** and the USS Rushmore, an amphibious warship, visited Chennai in January.
7. Earlier this month, the US approved the sale of 24 submarine-hunting **MH-60R Seahawk Multi**—Mission helicopters to India valued at \$2.6 billion.

## INDIA'S 1ST LAB-MEAT PROJECT

**India's first laboratory meat project took off** with the **Hyderabad-based Centre for Cellular and Molecular Biology (CCMB)** and **National Research Centre on Meat (NRCM)** coming together to produce "**ahimsa meat**". With an initial funding of Rs 4.5 crore by the department of biotechnology, **scientists will develop mutton and chicken from stem cells**, without animal rearing. The clean meat, CCMB scientists said, is nutritionally equivalent to conventional animal meat and it tastes, smells, looks and feels the same. Experts said using the technology and producing meat in the lab would mean there would be no need to raise and slaughter animals for meat. It not only gives food security, but will help in animal welfare and carbon footprint reduction.

### What

1. **India is among few countries** where the government is funding the project to produce fat-free boneless meat.
2. During a summit on the future of protein and food technology revolution held in August 2018, Union minister Maneka Gandhi had advised CCMB to make **cell-based ahimsa meat** on commercial scale in the next five years.
3. CCMB director Rakesh Mishra said the institute will develop technology to take laboratory cell culture process to cell-based meat production, so that it can be used at industry level.
4. The investment made by the Centre in this project is the biggest investment by a government in this technology, said Alokparna Sengupta, deputy director of Humane Society International-India — **the organisation promoting ahimsa meat.**

### About CCMB

1. The **Centre for Cellular & Molecular Biology (CCMB)** is a premier research organization in **frontier areas of modern biology**.
2. The objectives of the Centre are **to conduct high quality basic research and training in frontier areas of modern biology**, and **promote centralized national facilities** for new and modern techniques in the inter-disciplinary areas of biology.
3. CCMB was set up initially as a **semi-autonomous Centre on April 1, 1977 with the Biochemistry Division of the then Regional Research Laboratory** (presently, Indian Institute of Chemical Technology, IICT) Hyderabad forming its nucleus and Dr P M Bhargava heading the new Centre.
4. Earlier, the Governing Board of the **Council of Scientific and Industrial Research (CSIR)** New Delhi, the apex body which constituted 44 research institutions in the country, approved the proposal in 1976 to establish such a Centre in view of the importance of research in the frontier and multi-disciplinary areas of modern biology.
5. During 1981-82, the CCMB was accorded the status of a full-fledged national laboratory with its own Executive Committee and Scientific Advisory Council. With major expansion plans, it was decided to relocate the Centre to a spacious campus.

## AUSINDEX-19 CONCLUDES

The **Australian and Indian Navy** have concluded a two-week long **bilateral maritime exercise code-named AUSINDEX** on 14 Apr 19. Personnel from the Eastern Fleet bid

farewell to Her Majesty's Australian Ships Canberra, Newcastle, Paramatta and Success with a promise to meet again.

#### What

1. The current edition of the exercise had the participation of the highest number of units thus far with four frontline ships with integral helicopters, one submarine and a variety of aircraft including **P8I and P8A long-range Maritime Reconnaissance Anti-Submarine Warfare aircraft took part from both navies.**
2. For the first time, 55 American and 20 New Zealand military personnel embarked onboard the RAN ships and witnessed the exercises during AUSINDEX-19.
3. **The third edition of the exercise which commenced on 02 Apr 19** included a series of advanced warfare drills in all three dimensions comprising anti-submarine warfare exercises, air defense exercises, anti-surface warfare exercises including live-fire drills, replenishment at sea, and cross deck flying.
4. The bilateral exercise was aimed "to strengthen and enhance mutual cooperation and interoperability between the IN and RAN, providing opportunities for interaction and exchange of professional views between the personnel of the two navies".

### A STUDY ON GROUNDWATER FAECAL POLLUTION

**Economic growth is reducing faecal pollution in groundwater in North India**, which a key factor is **causing water-borne diseases** in the **densely populated Indo-Ganges-Brahmaputra river basin**, a study by researchers at IIT Kharagpur has found. About **100,000 children in India die every year** from waterborne enteric diseases like diarrhoea, researchers said. The study, published in the International Journal of Information Management, made first-time observations on significant **reduction of faecal coliform pathogen concentration** in the spatially variable groundwater from 2002 to 2017.

#### What

1. Looking beyond the country globally, more than two billion people, mostly living in economically stressed areas of Africa and South Asia still do not have access to basic sanitation, and more than one billion still opt for open defecation, said Professor Abhijit Mukherjee, from the Department of Geology and Geophysics at IIT Kharagpur in West Bengal.
2. The resulting unsafe disposal of faecal waste to nearby drinking water sources poses an extremely serious environmental crisis and public health concern.
3. The researchers studied data for the **densely populated Indo-Ganges-Brahmaputra river basin, across 234 districts** in Rajasthan, Haryana, Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, West Bengal, Assam and also Delhi and NCR.
4. **The data was collected from National Rural Drinking Water Programme**, Ministry of Drinking Water and Sanitation, and covered almost last three decades to delineate the long-term improvement trends of groundwater quality across India, as consequence of development.
5. The study determined the economic development trends and correlations using night-time light data instead of **gross domestic product (GDP)** or other economic growth data.
6. Night-time light is regarded as a secular proxy for economic growth and in recent times are regularly used as a modern technique for characterising micro-GDP — GDP for a small area.
7. The study reflects through results that **higher faecal coliform concentration in urban and peri-urban areas**, suggesting economic progress may not be the only influencing factor on water quality alleviation.
8. The researchers noted that social behaviour and practices, use and disuse and beliefs are mostly related to lower literacy rate.
9. In turn, this result in lack of awareness and encourage malpractice on sanitation, eventually leading to increased faecal waste into drinking water sourced to groundwater, according to the study.

## INTERNATIONAL

### CHINA REMOVES INDIA'S PART ON BRI MAP

**China** on 27 April 2019 **removed map from website of Belt and Road Initiative (BRI) Forum** which had shown entire Jammu & Kashmir and Arunachal Pradesh as part of India and **India as part of BRI**. As the **second edition of Belt and Road Initiative Summit** got underway in Beijing, China displayed a map with BRI routes that curiously showed entire Jammu & Kashmir and Arunachal Pradesh as part of India. The map also **surprisingly portrayed India as part of BRI** even when **India boycotted the summit for the second time**.

#### What

1. The map was displayed by China's ministry of commerce on the occasion of three-day BRI Summit. At the Summit the Chinese President made attempts to address concerns expressed by India over BRI.
2. Inclusion of entire J&K and Arunachal Pradesh as part of India is not only a surprise but also self-contradictory, given the fact that China recently destroyed thousands of maps which showed Arunachal as part of India.
3. China regularly protests visits by top Indian leadership to **Arunachal Pradesh, described as "Southern Tibet"** in Chinese government parlance.
4. Previous maps of J&K issued by China showed part of the state under Pakistan, what is Pak Occupied Kashmir. Sources indicated that such faux pas, if at all, is a rare occurrence in China's official publications and websites. Experts on Sino-Indian affairs are trying to ascertain if it is a deliberate tactical move by China to placate India.
5. Last November, China's state-run media (CGTN television) excluded Pak occupied Kashmir (PoK) from the map of Pakistan. A map of Pakistan excluding PoK was displayed by China's state-run television while reporting terror attack on Chinese consulate in Karachi.
6. **Excluding PoK from the Pakistan map can also have implications for China-Pakistan-Economic-Corridor (CPEC)**. India has strong reservations on CPEC as it is passing through PoK that violates India's sovereignty. **CPEC is the most important connectivity link under China's Belt and Road Initiative (BRI)**.
7. China has invested heavily in infrastructure projects in PoK even before BRI was launched, much to India's discomfiture. India had served several protest letters, both in Beijing as well as Islamabad, about Chinese funded projects in PoK. China had reportedly posted troops in PoK, a move that was sharply criticised by India.
8. Besides Chinese investments in PoK, Sino-Indian ties was adversely impacted by China offering stapled visas to residents to Jammu and Kashmir a few years back and hosting Hurriyat leaders. Beijing has been emphasising of late that India and Pakistan should address the Kashmir issue bilaterally.

#### Flashback

1. **China-Pakistan Economic Corridor (CPEC)** is a **collection of infrastructure projects** that are currently under construction throughout Pakistan.
2. Originally valued at \$46 billion, the value of CPEC projects is worth \$62 billion as of 2017. **CPEC is intended to rapidly modernize Pakistani infrastructure** and strengthen its economy by the construction of modern transportation networks, numerous energy projects, and special economic zones.
3. On 13 November 2016, **CPEC became partly operational when Chinese cargo was transported overland to Gwadar Port** for onward maritime shipment to Africa and West Asia, while some major power projects were commissioned by late 2017.

## BCIMEC MISSING FROM LIST OF BRI PROJECTS

The **Bangladesh, China, India, Myanmar Economic Corridor**, originally listed in the **China's multi-billion dollars Belt and Road Initiative** projects, has been conspicuously **missing** from the new list issued at the **end of the Belt and Road Forum meeting** in Beijing. **China's high-profile 2nd Belt and Road Forum (BRF)**, in which 37 heads of state and governments took part, concluded on 27 April 2019 with signing of deals worth \$64 billion and affirming respect for sovereignty and territorial integrity towards Beijing's trillion-dollar Belt and Road Initiative (BRI), a key demand of India. Like in first BRF meeting in 2017, India skipped the meeting over its objections on the **China-Pakistan Economic Corridor (CPEC)**.

### What

1. A joint statement issued at the end of the meeting carried an annexe mentioning names of "**Economic corridors and other projects catalysed and supported by connectivity**".
2. The **CPEC**, "**the Nepal-China Trans-Himalayan Multi-Dimensional Connectivity Network**, including Nepal-China cross-border railway" and the China-Myanmar Economic Corridor (CMEC) figured in the list from the South Asian region.
3. The **Bangladesh-China-India-Myanmar Economic Corridor (BCIMEC)**, which has been previously mentioned as part of BRI when **it was launched in 2013**, did not figure in the list of 35 corridors mentioned in the new list of projects under the BRI.
4. **India has been opposing the CPEC, a flagship of the BRI**, as it passes through Pakistan occupied Kashmir (PoK).
5. The **2800-km BCIMEC proposed to link Kunming in China's Yunnan province with Kolkata**, passing through nodes such as **Mandalay in Myanmar and Dhaka in Bangladesh** before heading to Kolkata.
6. The **1700-km CMEC would provide China another node to access the Indian Ocean**. The corridor will run from Yunnan Province of China to Mandalay in Central Myanmar.
7. From there it will head towards Yangon, before terminating at the Kyaukpyu Special Economic Zone (SEZ) on the Bay of Bengal.
8. Similarly, the Nepal-China Trans-Himalayan connectivity network starts from Chengdu, from where it is linked to Tibet by the Sichuan-Tibet Highway, or the Sichuan-Tibet Railway.
9. It is proposed that the railway from Tibet will be further extended to Kathmandu, via Ya'an, Qamdo, Lhasa and Shigatse.
10. We respect sovereignty and territorial integrity of each other and affirm that each country has the right and primary responsibility to define its development strategies in accordance with its national priorities and legislation, the joint statement said.
11. **A total of 283 items of practical outcomes were achieved** during the preparatory process and the holding of the forum, Xi said in a statement to the media after his round table meeting with world leaders.
12. We must implement the principle of extensive consultation, joint contribution and shared benefits to see that all voices are heard, all reached their full potential and all stand to benefit.

## INTERNATIONAL FLEET REVIEW (IFR)

**IN Ships Kolkata and Shakti** entered **Qingdao, China** to participate in the **International Fleet Review (IFR)** as part of **70TH Anniversary Celebrations of PLA (Navy) on 21 Apr 19**. Entry of IN Ships was marked by firing of 21 gun salute to the Peoples Republic of China. The Ships were welcomed into harbour by officials from PLA (N) North Sea Fleet with live performance of Naval Band as part of Welcome Ceremony.

### What

1. The **participation of Indian Navy in PLA (N) IFR, for third consecutive time** (2009, 2014 and 2019), is a demonstration of the Nation's commitment **to enhance maritime**

- cooperation between the two navies** and bolster bonds of friendship between the two Countries.
- The IN has deployed its finest assets for the IFR with an **aim to strengthen existing cooperation**, enhance mutual trust, extend interoperability and build greater synergy to address common maritime concerns among participating navies.
  - IN Ships will take part in the parade of naval ships scheduled on 23 Apr** which will be reviewed by the Chinese President Xi Jinping.
  - Personnel from IN Ships would also be participating in various sporting events, professional exchanges with participating navies and ship visit by PLA (Navy) personnel and local populace.
  - The Indian Ambassador to China, Shri Vikram Misri, will also host a reception onboard INS Kolkata for dignitaries, officers of PLA (Navy) and delegations participating in the IFR.
  - The IN Ships had earlier called at Port Cam Ranh Bay, Vietnam for a good will visit prior entering Qingdao. The ships are also scheduled to visit Port Busan, South Korea and Singapore on their return journey to India as part of Eastern Fleet Overseas Deployment.
  - The Annual Overseas Deployment to the South China Sea is an important facet of Government of **India's 'Act East' policy** and Indian Navy's efforts to "Unite Nations Through the Oceans", through which India wishes to extend the 'Bridges of Friendship' through enhanced cultural, economic and maritime interactions with **countries of East and South-East Asia**.

## CAMBODIA AND THAILAND RECONNECTED

A **railway reconnecting Cambodia and Thailand was officially inaugurated** on 22 April 2019 in a bid to slash travel times and boost trade between the **Southeast Asian neighbors. Cambodian premier Hun Sen** and his **Thai counterpart Prayut Chan-O-Cha** witnessed a signing ceremony at a Thai border post before riding together to the Cambodian town of Poipet on a train donated by Thailand. The pair stepped from the carriage in Poipet with their clasped hands held high to the cheers of waiting crowds, waving flags of both countries. **Hun Sen described their journey as "historic"** and thanked Thailand for its efforts "to reconnect the railway between Cambodia and Thailand".

### What

- The railway would also better link his country to other **southeast Asian neighbours** and boost economy and trade.
- Bilateral trade between Thailand and Cambodia currently stands at **\$6 billion**.
- Cambodia last year re-opened the final stretch of a 370-kilometre (230-mile) railway running from the capital, Phnom Penh, to the Thai border.
- The **Asian Development Bank** bankrolled the reconstruction of the link to the **tune of \$13 million**.
- Much of Cambodia's railways — built by the French in colonial times — were damaged by the years of bitter conflict that engulfed the country during the Cold War era.
- The 48-kilometre (30-mile) section of track near Poipet was destroyed in 1973 while the rest of the track to Phnom Penh had been suspended for over a decade due to its poor condition.
- The Southeast Asian country** has more than 600 kilometres (375 miles) of track extending from its northern border with Thailand to the southern coast.

## UNSG REPORT ON PEACEKEEPING OPERATIONS

The **United Nations owes India USD 38 million**, the highest it has to pay to any country, for the **peacekeeping operations as of March 2019**, UN Secretary General Antonio Guterres has said as **he voiced concern over the world body's deteriorating financial health**. In his report on improving the financial situation of the world body, he said, as of March 31, 2019, the total amount payable to troop- and police-contributing countries with

respect to active peacekeeping missions was USD 265 million. Of this, the **UN owes USD 38 million to India**, followed by **Rwanda (USD 31 million)**, Pakistan (USD 28 million), Bangladesh (USD 25 million) and Nepal (USD 23 million), Guterres said in his report.

#### What

1. The arrears to troop- and **police-contributing (TCCs/PCCs) countries** could increase to USD 588 million by June 2019 “in the worst-case scenario”.
2. The UN chief added that which troop- and police-contributing countries will or will not be paid depends on the cash position of the individual missions to which they contribute and is not determined by their individual capacity to shoulder that unfair burden. That has created a paradox.
3. The United Nations is now effectively borrowing for prolonged periods from troop- and police-contributing countries. Many of them are low-income countries for which that impose a significant financial burden.
4. At the same time, the Organisation is asking those same countries to do more to train their personnel and improve the quality of their equipment, all while operating in increasingly challenging environments.

### UN REPORT ON BHOPAL GAS TRAGEDY

The **1984 Bhopal gas tragedy** which killed thousands of people is among the **world’s “major industrial accidents” of the 20th century**, a UN report has said, warning that 2.78 million workers die from occupational accidents and work-related diseases each year. The report released by the **UN labour agency International Labour Organization (ILO)** said in 1984, at least 30 tons of **methyl isocyanate gas**, which was released from the Union Carbide pesticide plant in the Madhya Pradesh capital, affected more than 600,000 workers and nearby inhabitants.

#### What

1. The Government figures estimate that **there have been 15,000 deaths** as a result of the disaster over the years.
2. Toxic material remains and thousands of survivors and their descendants have suffered from respiratory diseases and from damage to **internal organs and immune systems**.
3. The report titled **‘The Safety and Health at the Heart of the Future of Work – Building on 100 years of experience’** said the Bhopal disaster was among the world’s **“major industrial accidents after 1919”**.
4. Among the other nine major industrial disasters after 1919 listed in the report are the **Chernobyl and Fukushima nuclear disasters** as well as the **Rana Plaza building collapse**.
5. In the **Chernobyl disaster in April 1986**, one of four nuclear reactors at the Chernobyl power station in Ukraine exploded, releasing at least 100 times more radiation than the atom bombs dropped on Nagasaki and Hiroshima. The explosion killed 31 people immediately and thousands of people in the aftermath.
6. The number of casualties in the region increases every year due to long term effects including a **sharp increase in thyroid cancer**.
7. Following a major 9.0 magnitude earthquake and tsunami which struck north-eastern Japan in March 2011, the Fukushima nuclear power plants experienced equipment failures which caused a series of explosions, fires and radiation releases, causing injuries to plant workers and emergency responders.
8. In one of the worst industrial disasters in Bangladesh, the **Rana Plaza building in Dhaka collapsed in April 2013**. The building, which housed five garment factories, killed at least 1,132 people and injured more than 2,500.
9. According to recent estimates released by the ILO, each year 2.78 million workers die from occupational accidents and work-related diseases (of which 2.4 million are disease-related).
10. An additional 374 million workers suffer from non-fatal occupational accidents. It is estimated that lost work days globally represent almost four per cent of the world’s GDP, and in some countries, this rises to six per cent or more.

11. The **greatest proportion of work-related deaths – 86 per cent** – come from disease, according to the ILO, with some 6,500 people a day dying from occupational diseases, compared to 1,000 from fatal occupational accidents.
12. The greatest causes of mortality are circulatory diseases (31 per cent), work-related cancers (26 per cent) and respiratory diseases (17 per cent).
13. Launched during the ILO's centenary year – and ahead of the **World Day for Safety and Health at Work on April 28**, the report underlines the life-saving value of promoting prevention, to save lives and encourage healthy working environments.
14. **Since 1919**, the ILO has adopted more than 40 international labour standards promoting occupational health and safety.

## ECONOMY

### FIRST CENTRAL BANK TO START INTEREST RATE EASING CYCLE

The **Reserve Bank of India (RBI)** is the first central bank in the Asia-Pacific region to have **begun explicit interest rate easing cycle** by cutting the policy rate back-to-back in the last two monetary policy reviews in 2019. The **monetary policy committee led by Shaktikanta Das** cut the repo rate by 0.25 percentage point in February 2019 and again by 0.25 percentage point in March 2019, taking the total repo rate down to 6 per cent, the lowest in about nine years since 2010. The **Monetary Policy Committee (MPC)** has also kept the policy stance unchanged at neutral.

#### What

1. Benign food inflation and easier global financial conditions following the US Fed's shift to a more dovish policy stance has enabled the **Reserve Bank of India (RBI) to become the first central bank in Asia-Pacific (APAC)** to begin an explicit easing cycle.
2. With Consumer Price Index (CPI) at 2.9 percent in March 2019, the inflation is still under the target zone of 4 per cent (+/- 2 percent).
3. This has given the central bank room for reducing the policy rate to support growth in the economy. Fitch's baseline is for the RBI to remain on hold for the remainder of 2019, although we acknowledge the central bank may look for opportunities for further easing, the report added.
4. In the past, the government has slightly deviated from its path of fiscal consolidation. Even in the recent budget 2019-20, the government has announced various fiscal sops which will add to its expenditure.
5. Against this background, maintaining the target of reducing debt to GDP ratio to 60 percent by FY25 from the estimated 68.8 percent IN FY19, as per FRBM Act 2018, would be difficult, said Fitch.
6. **Earlier in April 2019**, Fitch Ratings kept India's rating unchanged for the 13th time in a row at BBB- , which is the lowest investment grade, along with a stable outlook. The agency cited various challenges faced by the country such as high public debt, weak financial sector and lagging structural reforms.

### IRDAI FORMS PANEL

The **Insurance Regulatory and Development Authority of India (IRDAI)** has **set up a committee to review the regulatory framework on microinsurance** and recommend measures to increase the demand for such products. Comprising officials of the IRDAI, insurers and NGOs, the committee has been formed in the backdrop of a less- than-desired offtake of microinsurance products despite their inherent benefits.

#### What

1. **With IRDAI Executive Director Suresh Mathur as the chairman**, the 13-member panel has been tasked with suggesting product designs with customer-friendly underwriting, including easy premium payment methods and simple claims settlement procedures.

2. The committee has **representatives from life, general and health insurance companies** in the public and private sectors.
3. A circular from IRDAI said India was seen to be a very exciting market and a pioneer in the microinsurance sector in the world.
4. Specifically intended for the protection of low-income people, with affordable insurance products, **microinsurance promises to support sustainable livelihoods of the poor**. However, its market penetration remains low.
5. While reviewing the regulatory framework on microinsurance in the country and abroad, the committee will suggest changes in the distribution structure, if any, including mobile-based and technology driven solutions.
6. **Setting a three month timeframe** for submission of the recommendations, the circular said the committee would also suggest creating effective awareness programmes.

#### What is Microinsurance

1. **Microinsurance products offer coverage to low-income households** or to individuals who have little savings and are **tailored specifically for lower valued assets** and compensation for illness, injury or death.
2. As a division of microfinance, microinsurance looks to aid poor families by offering insurance plans tailored to their needs.
3. **Microinsurance is often found in developing countries**, where the current insurance markets are inefficient or non-existent. Because the coverage value is lower than a usual insurance plan, **the insured people pay considerably smaller premiums**.

## RBI GETS SC ULTIMATUM

The **Supreme Court ordered the Reserve Bank of India to disclose its annual inspection reports of banks, along with the list of wilful defaulters** and information related to them **under the Right to Information Act**. The RBI is "**duty bound under the law**" to disclose information sought under the RTI Act. The apex court also ordered the RBI to "**withdraw its disclosure policy**", which it said is in violation of an order passed by the court in 2015 directing the central bank to disclose information under the provisions of the RTI Act. It gave the RBI "**one last opportunity**" to comply with the orders. "**Any further violation shall be viewed seriously**," said the bench comprising Justices L. Nageswara Rao and M.R. Shah, who warned that the central bank could face contempt proceedings if it failed to furnish the information.

### What

1. **The order is part of long-running attempts to extract financial information** in the backdrop of mounting bad debts at banks, with the RBI resisting such attempts and bankers worrying about the potential impact on financial stability. Banks' total non-performing assets amounted to ₹11.2 trillion in FY18.
2. In January, the top court had issued a contempt notice to the RBI on a petition filed by **RTI activists Subhash Chandra Agrawal and Girish Mittal**, who said the central bank had failed to disclose information they had sought on its annual inspection reports of banks.
3. They claimed former RBI governor Urjit Patel had "wilfully" not complied with an order of the top court dating back to December 2015. Back then, the Supreme Court heard the complaints of a batch of transferred cases from different high courts under the case name of Jayantilal N. Mistry and others, to whom the RBI had similarly denied information sought under the RTI Act.
4. These petitioners had sought copies of RBI's inspection reports of ICICI Bank, Axis Bank, HDFC Bank and State Bank of India between April 2011 and December 2015. But the central bank said **such information was exempted under section 8(1)(e) of the RTI Act and section 45NB of the Reserve Bank of India Act, 1934**.

5. Ruling on the matter in December 2015, Supreme Court judge M.Y. Eqbal **rejected RBI's defence of "economic interest" and "fiduciary relationship"**.
6. The court observed that the RBI is a statutory regulatory authority which oversees the functioning of the banks and the information about the banks is with it only by virtue of its nature as a statutory authority.
7. The court had held that the RBI is accountable to the general public and cannot withhold information under the defence of "trust" with the financial institutions.
8. **RBI is empowered under section 35 of the Banking Regulation Act, 1949** to conduct annual inspection of all commercial banks—public, private and foreign. It conducts an on-site inspection of all banks once a year. RBI officials visit the head offices and branches of banks to inspect the books.
9. Currently, the annual inspection is based on a **Risk-Based Supervision method** which focuses on "evaluating both present and future risks, identifying incipient problems and facilitates prompt intervention/early corrective action".

## INDIA'S TARIFF ISSUE IN WTO

**Canada and Thailand** 24 April 2019 expressed interest to join consultations in a case filed by the **European Union in the WTO against India's import duties on certain ICT products**, including mobile phones. On April 9 this year, the **European Union (EU)** dragged India into the **WTO's (World Trade Organisation) dispute settlement mechanism** over Indian import duties on **nine categories of information and communications technology (ICT) products**, including mobile phones and components, base stations, integrated circuits and optical instruments.

### What

1. They have alleged that imposition of duties infringes WTO norms as India has committed zero per cent bound tariffs on these products. While bound tariffs or duties refer to the ceiling over which a WTO member country can not impose import duty, the applied tariff is the duty which is currently in place.
2. The EU has alleged that despite **India's legally binding commitment in the WTO** that it would not charge any import duty on ICT products, India has been applying duties ranging from 7.5 per cent to 20 per cent.
3. These import duties are therefore in clear breach by India of WTO rules. The levies affect EU exports worth 600 million euros per year, the EU has said.
4. According to WTO rules, seeking consultation is the first step of dispute settlement process. If the bilateral consultations requested by the EU with India do not result in a satisfactory solution, the EU can request the WTO to set up a dispute panel to pass a ruling on the matter.
5. The US, Singapore and Chinese Taipei had also expressed their interest to join consultations in this dispute on 23 April 2019.
6. **As per the WTO rules**, these countries would have to seek approval from **India and the EU to join the consultation process**.
7. Canada and Thailand in separate communications to the WTO have said they have substantial trade interest in these consultations as they are major players in the ICT sector. Canada in its application said it has a substantial trade interest in these consultations.

### Flashback

1. The **World Trade Organization (WTO)** is an intergovernmental organization that is concerned with the regulation of international trade between nations.
2. The **WTO officially commenced on 1 January 1995 under the Marrakesh Agreement**, signed by 124 nations on 15 April 1994, replacing the General Agreement on Tariffs and Trade (GATT), which commenced in 1948.
3. It is the **largest international economic organization in the world**.

8. Over 2016-2018, India's imports from Canada of these products averaged USD 40.2 million, it said, adding that during the same period Canada's global exports of all ICT products averaged USD 11.3 billion and accounted for 2.8 per cent of all Canadian exports.
9. Similarly, Thailand said India imported these items worth USD 318.2 million from the **South East Asian country in 2018**.
10. In particular, from 2015 to 2017, Thailand was India's largest supplying market for digital cameras, with imports from Thailand accounted for 34.5 per cent of India's total imports.
11. As a result of this substantial trade interest, Thailand requests that it be permitted to join the consultations in this dispute," Thailand said. A WTO member country can file a dispute if it perceives that another country's trade policies or actions are violating global trade norms.

## SCIENCE AND TECHNOLOGY

### UNIVERSE'S FIRST MOLECULE DETECTED

Scientists have detected the **most ancient type of molecule in our universe in space for the first time ever. Helium hydride ion (HeH<sup>+</sup>)** was the first molecule that formed when, almost 14 billion years ago, falling temperatures in the young universe allowed recombination of the light elements **produced in the Big Bang**. At that time, **ionised hydrogen and neutral helium atoms reacted to form HeH<sup>+</sup>**, said researchers from The Max Planck Institute for Radio Astronomy (MPIfR) in Germany. Despite its importance in the history of the early Universe, **HeH<sup>+</sup> has so far escaped detection in astrophysical nebulae** — cloud of gas and dust in outer space.

#### What

1. Operating the **GREAT far-infrared spectrometer onboard the flying observatory SOFIA**, an international team reported unambiguous detection of the molecule towards the planetary **nebula NGC 7027**.
2. During the dawn of chemistry when the temperature in the young universe had fallen below 4000 Kelvin, the ions of the **light elements (hydrogen, helium, deuterium and traces of lithium)** produced in Big Bang nucleosynthesis recombined in reverse order of their ionisation potential. Helium combined first with free electrons to form the first ever neutral atom, according to the study published in the journal Nature.
3. At that time **hydrogen was still ionised or present in form of bare protons**. Helium atoms combined with these protons into the **helium hydride ion HeH<sup>+</sup>**, the universe's first molecular bond.
4. As recombination progressed, HeH<sup>+</sup> reacted with then neutral hydrogen and created a first path to the formation of molecular hydrogen — marking the beginning of the modern universe.
5. Despite its unquestioned importance in the history of the early Universe, the **HeH<sup>+</sup> molecule has so far escaped detection in interstellar space**.
6. **Studied in the laboratory as long ago as 1925**, dedicated searches during the last decades have been unsuccessful, thereby challenging our understanding of the underlying chemical networks.
7. The chemistry of the universe began with HeH<sup>+</sup>. The lack of definitive evidence of its very existence in interstellar space has been a dilemma for astronomy for a long time.

### HUBBLE MARKS 29TH ANNIVERSARY

To celebrate the **29th anniversary of the Hubble Space Telescope's launch**, NASA and European Space Agency (ESA) have released a breathtaking image of the hourglass-shaped **Southern Crab Nebula**. The nebula, **created by a binary star system**, is one of the many objects that Hubble has demystified throughout its productive life. This new image

adds to our understanding of the nebula and **demonstrates the telescope's continued capabilities.**

#### What

1. **On April 24 1990**, Hubble was launched on **the space shuttle Discovery**. It has since revolutionised how astronomers and the general public see the universe.
2. The images it provides are spectacular from both a scientific and a purely aesthetic point of view. Each year the telescope dedicates a small portion of its precious observing time to take a special anniversary image, focused on capturing particularly beautiful and meaningful objects.
3. This peculiar nebula, which exhibits nested hourglass-shaped structures, has been created by the interaction between a pair of stars at its centre.
4. The **unequal pair consists of a red giant and a white dwarf**. The red giant is shedding its outer layers in the last phase of its life before it too lives out its final years as a white dwarf. Some of the red giant's ejected material is attracted by the gravity of its companion.
5. When enough of this cast-off material is pulled onto the white dwarf, it too ejects the material outwards in an eruption, creating the structures we see in the nebula.
6. **The object was first written about in 1967**, but was assumed to be an ordinary star until 1989, when it was observed using telescopes at the European Southern Observatory's La Silla Observatory.
7. The resulting image showed a roughly crab-shaped extended nebula, formed by symmetrical bubbles of gas and dust. These observations only showed the outer hourglass emanating from a bright central region that could not be resolved.
8. It was not until Hubble observed the Southern Crab in 1998 that the entire structure came into view.
9. This image revealed the inner nested structures, suggesting that the phenomenon that created the outer bubbles had occurred twice in the (astronomically) recent past.

## GAIA REPORT

The **world's recyclable plastic is being shipped to Asia where it is illegally dumped**, buried or burned in the country with the lightest regulations, environmentalists warned on 23 April 2019 calling for greater transparency in the global waste trade. A report by **Global Alliance for Incinerator Alternatives (GAIA)** and **Greenpeace East Asia** analysed the top 21 exporters and importers of plastic recyclable waste from 2016 until 2018 – before and after China stopped taking such waste last year.

#### What

1. It found that **plastic waste imports into Thailand, Malaysia and Vietnam** jumped from mid-2017 to early 2018, leading to illegal operations dumping and open-burning, contaminating water supplies, killing crops and causing respiratory illnesses.
2. For the first world, it makes them feel good about their waste supposedly being recycled but in reality it ends up in countries that cannot deal with the waste, said Beau Baconguis, a **plastics campaigner at GAIA in Manila**.
3. As pollution and environmental damage linked to the rise in plastic waste became known in countries like Malaysia and Thailand during 2018, protests led to tighter waste regulations and import restrictions by authorities, the study found.
4. Large volumes of plastic waste then diverted to other countries in the region, like Indonesia and India, where regulations on the waste trade are more lenient, the study said.
5. **China was the leading importer of plastic waste until it banned imports at the start of 2018** after a string of scandals.
6. This disrupted the flow of more than 7 million tonnes of plastic scrap a year, valued at about \$3.7 billion. The top exporters of plastic waste analysed for the report included the United States, Britain, Germany and Japan.

7. **Members of the Basel Convention, the main global pact regulating the trans-boundary movement of hazardous waste,** will meet in Geneva from April 29 and decide on a proposal from Norway to create greater transparency in plastic waste trade.
8. If adopted, any plastic waste exporters would be required to obtain prior approval from an importing country, and give more detailed information on the volume and type of waste.

#### Flashback

1. The **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal** was adopted on **22 March 1989** by the Conference of Plenipotentiaries in **Basel, Switzerland**, in response to a public outcry following the discovery, in the 1980s, in Africa and other parts of the developing world of deposits of toxic wastes imported from abroad.
2. The overarching **objective of the Basel Convention is to protect human health and the environment against the adverse effects of hazardous wastes.**
3. Its scope of application covers a wide range of wastes defined as “**hazardous wastes**” based on their origin and/or composition and their characteristics, as well as two types of wastes defined as “other wastes” - household waste and incinerator ash.

## NASA PROBE DETECTS LIKELY ‘MARSQUAKE’

**NASA’s robotic probe InSight** has detected and measured what scientists believe to be a “**marsquake**,” marking the **first time a likely seismological tremor** has been recorded on another planet, the Jet Propulsion Laboratory in California reported. The breakthrough came nearly five months after **InSight, the first spacecraft designed specifically to study the deep interior of a distant world**, touched down on the surface of Mars to begin its two-year seismological mission on the red planet.

### What

1. The **faint rumble characterized by JPL scientists as a likely marsquake**, roughly equal to a 2.5 magnitude earthquake, was recorded on April 6 – the lander’s 128th Martian day, or sol.
2. It was detected by **InSight’s French-built seismometer**, an instrument sensitive enough to measure a seismic wave just one-half the radius of a **hydrogen atom**.
3. Scientists are still examining the data to conclusively determine the precise cause of the signal, but the trembling appeared to have originated from inside the planet, as opposed to being caused by forces above the surface, such as wind.
4. The high frequency level and broad band is very similar to what we get from a rupture process. So we are very confident that this is a **marsquake**,” Philippe Lognonné, a geophysics and planetary science professor at University Paris Diderot in France and lead researcher for InSight’s seismometer.
5. Still, a tremor so faint in Southern California would be virtually lost among the dozens of small seismic crackles that occur there every day.
6. A more distant quake would yield greater information about Mars’ interior because seismic waves would “penetrate deeper into the planet before they come back up to the seismometer.
7. **The size and duration of the marsquake also fit the profile** of some of the thousands of moonquakes detected on the lunar surface between 1969 and 1977 by seismometers installed there by NASA’s Apollo missions, said Lori Glaze, planetary science division director at NASA headquarters in Washington.
8. **The lunar and Martian surfaces are extremely quiet compared with Earth**, which experiences constant low-level seismic noise from oceans and weather as well as quakes that occur along subterranean fault lines created by shifting tectonic plates in the planet’s crust.

9. Mars and the moon lack tectonic plates. Their seismic activity is instead driven by a cooling and contracting process that causes stress to build up and become strong enough to rupture the crust.
10. Three other apparent seismic signals were picked up by InSight on March 14, April 10 and April 11 but were even smaller and more ambiguous in origin, leaving scientists less certain they were actual marsquakes. InSight to eventually detect quakes 50 to 100 times larger than the April 6 tremor.

## SYNTHETIC PEARL CREATED USING BACTERIA

**Scientists have used bacteria to create synthetic mother-of-pearl** that is tough but bendable, and could be used as medical implants or for constructing buildings on the Moon in future. **Nacre, also known as mother-of-pearl** is an exceptionally tough, stiff material **produced by some mollusks** and serving as their inner shell layer. It also comprises the **outer layer of pearls**, giving them their lustrous shine. However, while **nacre's unique properties** make it an ideal inspiration in the creation of synthetic materials; most methods **used to produce artificial nacre are complex and energy intensive.**

### What

1. Scientists at the University of Rochester in the US invented an inexpensive and environmentally friendly method for making artificial nacre using an **innovative component: bacteria.**
2. The artificial nacre is made of biologically produced materials and has the toughness of natural nacre, while also being stiff and bendable.
3. In a research published in the journal *Small*, the team outlined their method of using two strains of bacteria to replicate these layers. When they examined the samples under an electron microscope, the structure created by the bacteria was layered similarly to nacre produced naturally by mollusks.
4. One of the most beneficial characteristics of the nacre produced at the University of Rochester is that it is **biocompatible** — made of materials the human body produces or that humans can eat naturally anyway.
5. The **nacre might also be an ideal material** to build houses on the moon and other planets: the only necessary “ingredients” would be an astronaut and a small tube of bacteria, Meyer said. The moon has a large amount of calcium in the moon dust, so the calcium's already there.
6. **The astronaut brings the bacteria**, and the astronaut makes the urea, which is the only other thing you need to start making calcium carbonate layers. Although **nacre-inspired materials** have been created synthetically before, the methods used to make them typically involve expensive equipment, extreme temperatures, high-pressure conditions, and toxic chemicals.
7. Many people creating artificial nacre use polymer layers that are only soluble in nonaqueous solutions, an organic solvent, and then they have this giant bucket of waste at the end of the procedure that has to be disposed of. To produce nacre in Meyer's lab, however, all researchers have to do is grow bacteria and let it sit in a warm place.
8. In order to make the artificial nacre, researchers create alternating thin layers of crystallised calcium carbonate — like cement — and sticky polymer.
9. They first take a glass or plastic slide and place it in a beaker containing the **bacteria *Sporosarcina pasteurii***, a calcium source, and urea (in the human body, urea is the waste product excreted by the kidneys during urination).
10. **This combination triggers the crystallization of calcium carbonate.** To make the polymer layer, they place the slide into a solution of the bacteria *Bacillus licheniformis*, then let the beaker sit in an incubator.

## GENOME SEQUENCING TO MAP POPULATION DIVERSITY

In an **indigenous genetic mapping effort**, nearly 1,000 rural youth from the length and breadth of India will have their genomes sequenced by the **Council of Scientific and**

**Industrial Research (CSIR).** The project aims at **educating a generation of students on the “usefulness” of genomics.** Globally, many countries have undertaken **genome sequencing of a sample of their citizens** to determine unique genetic traits, susceptibility (and resilience) to disease. This is the first time that such a large sample of Indians will be recruited for a detailed study.

#### What

1. **The project is an adjunct to a much larger government-led programme,** still in the works, to sequence at least 10,000 Indian genomes.
2. Typically, those recruited as part of genome-sample collections are representative of the country’s population diversity. In this case, the bulk of them will be college students, both men and women, and pursuing degrees in the life sciences or biology.
3. Genomes will be sequenced based on a blood sample and the scientists plan to hold at least 30 camps covering most States.
4. **Every person whose genomes are sequenced will be given a report.** The participants would be told if they carry gene variants that make them less responsive to certain classes of medicines. For instance, having a certain gene makes some people less responsive to **clopidogrel**, a key drug that prevents strokes and heart attack.
5. **The project would involve the Hyderabad-based Centre for Cellular and Molecular Biology (CCMB)** and cost ₹18 crore, with the sequencing to be done at the IGIB and the CCMB.
6. The **human genome has about 3.2 billion base pairs** and just 10 years ago cost about 10,000 dollars. Now prices have fallen to a tenth.
7. Ever since the human genome was first sequenced in 2003, it opened a fresh perspective on the link between disease and the unique genetic make-up of each individual.
8. Nearly 10,000 diseases — including **cystic fibrosis, thalassemia** — are known to be the result of a single gene malfunctioning.

#### Flashback

1. **Genome sequencing is figuring out the order of DNA nucleotides,** or bases, in a genome—the order of **As, Cs, Gs, and Ts** that make up an organism’s DNA. The human genome is made up of **over 3 billion of these genetic letters.**
2. Today, DNA sequencing on a large scale—the scale necessary for ambitious projects such as sequencing an entire genome—is mostly done by high-tech machines.
3. Much as your eye scans a sequence of letters to read a sentence, these machines “read” a sequence of DNA bases.

## NASA RECORDS FIRST LIKELY ‘QUAKE’ ON MARS

**NASA’s robotic Mars InSight lander** has recorded a likely **“marsquake” for the first time ever**, the U.S. space agency said. The **faint seismic signal**, detected by the **lander’s Seismic Experiment for Interior Structure (SEIS) instrument**, was recorded on April 6, the lander’s 128th Martian day. This is the first recorded trembling that appears to have come from inside the planet, as opposed to being caused by forces above the surface, such as wind. Scientists still are examining the data to determine the exact cause of the signal.

#### What

1. **“InSight’s first readings carry on the science** that began with NASA’s Apollo missions, said InSight Principal Investigator Bruce Banerdt of NASA’s Jet Propulsion Laboratory (JPL) in the U.S.
2. The new seismic event was **too small to provide solid data on the Martian interior**, which is one of InSight’s main objectives. The Martian surface is extremely quiet, allowing SEIS, InSight’s specially designed seismometer, to pick up faint rumbles.

3. In contrast, Earth's surface is quivering constantly from seismic noise created by oceans and weather. An event of this size in Southern California would be lost among dozens of tiny crackles that occur every day.
4. **The Martian Sol 128 event** is exciting because its size and longer duration fit the profile of **moonquakes detected on the lunar surface during the Apollo missions**, said Lori Glaze, Planetary Science Division director at NASA Headquarters.
5. NASA's Apollo astronauts installed five seismometers that measured thousands of quakes while operating on the Moon between 1969 and 1977, revealing seismic activity on the Moon.
 

**What is InSight?**

  1. The name of the shuttle InSight stands for **Interior Exploration using Seismic Investigations, Geodesy and Heat Transport**- catchy, eh?!
  2. When it is settled on the surface with its solar panels fully expanded, **InSight will be 6m long and just over 1.5m wide.**
  3. **It weighs 360kg**, which is about the same as about four baby elephants!
  4. The launcher contains lots of different instruments, all with different jobs, that have been built by scientists all over the world, so lots of teams have helped to make this mission a reality.
  5. **InSight's objectives are to place a seismometer, called SEIS**, on the surface of Mars to measure seismic activity and provide accurate 3D models of the planet's interior; and measure internal heat flow using a heat probe called HP3 to study Mars' early geological evolution.
  6. This could bring a new understanding of how the Solar System's terrestrial planets – **Mercury, Venus, Earth, Mars – and Earth's Moon form and evolve.**
6. Different materials can change the speed of seismic waves or reflect them, allowing scientists to use these waves to learn about the interior of the Moon and model its formation.
7. **NASA currently is planning to return astronauts to the Moon by 2024**, laying the foundation that will eventually enable human exploration of Mars.
8. InSight's seismometer, which the lander placed on the planet's surface on December 19, 2018, will enable scientists to gather similar data about Mars.
9. By studying the deep interior of Mars, they hope to learn how other rocky worlds, including Earth and the Moon, formed.
10. Three other seismic signals occurred on March 14, April 10 and April 11. Detected by SEIS' more sensitive Very Broad Band sensors, these signals were even smaller than the Sol 128 event and more ambiguous in origin.
11. The team will continue to study these events to try to determine their cause, NASA said. Regardless of its cause, the Sol 128 signal is an exciting milestone for the team.
12. **Mars and the Moon do not have tectonic plates**, but they still experience quakes — in their cases, caused by a continual process of cooling and contraction that creates stress. This stress builds over time, until it is strong enough to break the crust, causing a quake.
13. **InSight's instrument has several ingenious insulating barriers**, including a cover built by JPL called the Wind and Thermal Shield, to protect it from the planet's extreme temperature changes and high winds.

## MISCELLANEOUS

### CASES OF MEASLES SHOW ALARMING RISE

The number of **cases of measles — one of the world's most contagious diseases** — is climbing, warned the **World Health Organisation (WHO)**, stating that **preliminary global**

**data** shows that **reported cases rose by 300% in the first three months of 2019**, compared to the same period in 2018. In 2017, the most recent year for which estimates are available, **it caused close to 1,10,000 deaths**. Worse, in recent months, spikes in case numbers have also occurred in countries with high overall vaccination coverage, including the United States of America as well as Israel, Thailand, and Tunisia, as the disease has spread fast among clusters of unvaccinated people.

#### What

1. **Measles has the potential to be extremely severe.** Even in high-income countries, complications result in hospitalisation in up to a quarter of cases, and can lead to lifelong disability, from brain damage and blindness to hearing loss. It added that while data released currently was “**provisional and not yet complete**, it indicates a clear trend”.
2. The actual numbers of cases — captured in global estimates — will also be considerably higher than those reported. We estimate that less than 1 in 10 cases are reported globally, with variations by region.
3. With this as the background to date, **2019 has seen 170 countries report 1,12,163 measles cases to WHO**. As of this time last year, there were 28,124 measles cases from 163 countries.
4. Globally, this is almost a 300% increase,” noted WHO. Countries with the most reported cases include Madagascar, Ukraine, India, Nigeria, Kazakhstan, Chad, Myanmar, Thailand, the Philippines and Democratic Republic of the Congo.

#### India at risk

1. A senior Health Ministry official said that to “**eliminate measles and control rubella**, mass [over 95%] immunisation of children is required.
2. **In India, measles is still one of the leading causes of death in young children.** About 15% of vaccinated children fail to develop immunity from the first dose, meaning that if only 80% are fully immunised, an outbreak is likely.
3. **WHO’s African region has recorded a 700% increase**, the region of the Americas 60%, the European region 300%, the Eastern Mediterranean 100% and **40% increases have been observed in South-east Asia and the Western Pacific**.
4. Many countries are in the midst of sizeable measles outbreaks, with all regions of the world experiencing sustained rise in cases.
5. Current outbreaks include those from Democratic Republic of the Congo, Ethiopia, Georgia, Kazakhstan, Kyrgyzstan, Madagascar, Myanmar, Philippines, Sudan, Thailand and Ukraine, causing many deaths — mostly among young children.
6. The disease is almost entirely preventable through two doses of a safe and effective vaccine. For several years, however, global coverage with the first dose of measles vaccine has stalled at 85%.
7. This is still short of the 95% needed to prevent outbreaks, and leaves many people, in many communities, at risk. Second dose coverage, while increasing, stands at 67%.

## STREET CHILD CRICKET WORLD CUP

**Ace cricketer Mithali Raj** has been named as the **goodwill ambassador of the Indian team for the Street Child Cricket World Cup**. **Captain of India’s woman ODI side**, Mithali joins former captain Saurav Ganguly and IPL franchise Rajasthan Royals in supporting the team.

#### What

1. **India has over 20 lakh street connected children** and there lies our nation’s untapped potential. As a woman cricketer, I am super thrilled to see that this tournament is gender equal – boys and girls will play together.
2. Earlier, **PTC India Financial Services Ltd.** announced its support for the team to create national and international visibility of children.
3. The **first Cricket World Cup for street-connected children** will take place ahead of the 2019 ICC Cricket World Cup in England and Wales.

- The Street Child Cricket World Cup will unite street children from around the world to play in their own international cricket tournament to raise awareness and tackle the widespread stigma and negative treatment they face.

## INDIAN PEACEKEEPERS AWARDED MEDAL OF HONOUR

A total of **150 Indian peacekeepers serving with the UN Mission in South Sudan (UNMISS)** have received medals of honour for their dedicated service and sacrifice. The medals were given to the **150 Indian peacekeepers serving in UNMISS in Malakal** during a ceremony filled with parades and performances by a **piped band. Colonel Amit Gupta**, deployed with UNMISS in Malakal, was among the recipients of the **medal of honour**.

### What

- Gupta commands a battalion of 850 soldiers in the Upper Nile region of South Sudan.** Under his command, his men have conducted highly sought-after veterinary camps and run a veterinary hospital in Malakal, with a second expected to be completed in Kodok – a major town along the west bank of the Nile – in a few weeks' time.
- Indian peacekeepers serving with the mission have undertaken numerous training sessions of community animal health workers, providing value addition training for farmers to help them make the most of their produce.
- Gupta has previously served the United Nations in Northern Kivu, in the Democratic Republic of Congo.
- Private Ankush Cheema, another recipient of the medal of honour, had joined the unit in 2017** when he found out that they were scheduled for a peacekeeping mission. UNMISS had said that the **Indian Horizontal Mobility Engineering Company** serving with the mission completed the renovation of 145 km of roadway connecting Bentiu and Leer “easing the way for the delivery humanitarian aid, trade and inter-communal dialogue.”
- India is one of the top troop contributing countries to UN peacekeeping missions.** More than 200,000 military and police have served over the past 70 years and 168 Indian military personnel have lost their lives under the UN flag.
- India is the second largest contributor of peacekeepers to UNMISS with more than 2,400 military and police personnel currently deployed the mission.

## PULITZER PRIZE

**Reuters won two Pulitzer Prizes**, one for revealing the massacre of 10 Muslim Rohingya men by Buddhist villagers and Myanmar security forces, and another for photographs of Central American migrants seeking refuge in the United States. **The awards marked the second year in a row that Reuters has won two Pulitzers**, the most prestigious prize in American journalism. **Reuters has won seven since 2008**. Two of this year's honorees have been jailed for 490 days in Myanmar for their role in uncovering the killings.

### What

- In other categories, coverage of mass shootings in the United States and investigations into U.S. President Donald Trump featured prominently. The New York Times and the Washington Post also took two Pulitzers each.
- Reuters and the Associated Press were both awarded prizes for international reporting, with the AP winning for its coverage of war atrocities in Yemen.
- The Reuters award was for an **investigative report that revealed the massacre of 10 Rohingya at the village of Inn Din**, in the heart of the conflict zone of Rakhine state in Myanmar.
- The **New York Times won a prize for explanatory reporting of Mr. Trump's finances and tax avoidance** and another for editorial writing by Brent Staples.
- The **Washington Post's Lorenzo Tugnoli won the feature photography prize for images** of the famine in Yemen and the newspaper's Carlos Lozada also won for criticism.

6. The Wall Street Journal won the national reporting prize for uncovering Mr. Trump's secret payoffs to two women during his campaign who claimed to have had affairs with him. Coverage of mass shootings in the United States was also recognized four times.
7. The South Florida Sun Sentinel won the public service award for “exposing failings by school and law enforcement officials before and after the deadly shooting rampage at Marjory Stoneman Douglas High School,” the Pulitzer board said. Seventeen people died in the massacre at the Parkland, Florida, high school on Feb. 14, 2018.
8. The staff of the Pittsburgh Post-Gazette won the breaking news prize for its coverage of “immersive, compassionate” coverage of the massacre at Pittsburgh's Tree of Life synagogue that killed 11 people on Oct. 27, 2018.
9. Pulitzer administrator Dana Canedy, upon announcing the winners, also offered admiration for a non-winner: the staff of the Eagle Eye student newspaper at Marjory Stoneman Douglas High School for its coverage of the killings.
10. The **Pulitzer board also awarded a special citation to the Capital Gazette of Annapolis, Maryland**, for “their courageous response to the largest killing of journalists in U.S. history in their newsroom.” A gunman shot and killed five people there on June 28, 2018.

#### Flashback

1. The **Pulitzer Prize** is an award for achievements in newspaper, magazine and online journalism, literature, and musical composition in the United States.
2. It was established in **1917 by provisions in the will of American (Hungarian-born) Joseph Pulitzer** who had made his fortune as a newspaper publisher, and is administered by **Columbia University in New York City**.
3. Prizes are awarded yearly in **twenty-one categories**. In twenty of the categories, each winner receives a certificate and a US\$15,000 cash award (raised from \$10,000 in 2017).
4. The winner in the public service category of the journalism competition is awarded a gold medal.

## EARTH DAY 2019

**Earth Day is an annual event observed on April 22** supporting **environmental protection**. It began in the United States in 1970 as a protest against the negative impacts of industrial development on the environment. The event had a great impact and resulted in the creation of the **Environmental Protection Agency** and strong environmental laws in the US as the **Clean Water Act** and the **Endangered Species Act**.

#### What

1. Over the years, **Earth Day became a global event** and today it is celebrated in more than **193 countries**. On this day, people march with signs and petitions demanding lawmakers to pass policies that can save the environment.
2. **Every year the Earth Day is observed around a particular theme** aimed to highlight a cause related to the planet.
3. The **theme for Earth Day 2019 is to ‘Protect Our Species.’** This year's theme is created to focus on the destruction caused to plants and wildlife populations mainly due to human activity. Some of the main reasons include climate change, deforestation, poaching, and pollution.
4. **Earth Day Network (EDN)**, a nonprofit which runs World Earth Day, are encouraging their supporters to raise awareness on the issue. They are urging individual actions like adopting a plant-based diet and stopping the use of pesticide and herbicide.
5. According to EDN, they have been organizing and overseeing **Earth Day every year since 1970**. This year they are focusing on species that are losing their habitat.

6. According to the group, we are losing species at 1,000 to 10,000 times the normal rate. EDN is trying to raise awareness about the problem our nature is facing and the need to understand its urgency.

## FIRST INDIAN TO WINS ELECTIONS IN JAPAN

**41-year-old Indian-origin Japanese**, who goes by the nickname “**Yogi**”, has been elected to **Tokyo’s Edogawa Ward assembly**, becoming the **first Indian to win an election in Japan**. **Puranik Yogendra**, a naturalised Japanese, secured 6,477 votes, the fifth highest of the 226,561 valid ballots cast, in the April 21 poll, part of unified local elections held across Japan.

### What

1. **Edogawa Ward has the highest number of Indian residents** among Tokyo’s 23 wards with 4,300 or so Indian nationals registered, accounting for more than 10 per cent of Indians living in Japan. Over 34,000 Indians live in Japan. The Edogawa Ward also has a large number of Chinese and Koreans.
2. **This is the first-ever victory of a naturalised Japanese of Indian origin** in elections in Japan. This is also a recognition of contributions made by Indians towards the Japanese society.
3. **Yogi first arrived in Japan in 1997** when he was a university student in India. He returned two years later to study, and in 2001 came back to work as an engineer. He later worked for a bank and other companies, and has resided in Edogawa Ward since 2005.
4. Yogi felt his ties with Japan strengthen after the 2011 earthquake and tsunami disaster while visiting affected areas on weekends to cook curry with Indian friends from Edogawa Ward to share with victims, the paper said.

## ISSF WORLD CUP 2019

**India won two gold medals** at the ongoing **ISSF World Cup 2019 in Beijing**. First, Anjum Moudgil and Divyansh Singh finished top of 10m Air Rifle Mixed team event. Manu Bhaker and Saurabh Chaudhary later added another gold by finishing top in **10m Air Pistol Mixed team event**. The bronze went to Russia’s Yulia Karimova and Grigorii Shamakov.

### What

1. Anjum and Divyansh’s final against Chinese pair of Liu Ruxuan and Yang Haoran was a closely contested one, with the hosts having a 13-11 advantage.
2. However, Anjum and Divyansh made a brilliant comeback to level it at 15-15 before winning and occupying the first place by 17-15.
3. It was a new format in Finals with top 2 teams competing against each other for Gold (and same for Bronze).
4. Later, Manu and Saurabh added to India’s medal tally at the Beijing World Cup. The Indian duo absolutely destroyed the competition by comprehensively beating the Chinese pair 16-6 in Gold medal battle. The Indian duo finished 5th scoring 482 points in Qualification.
5. **The Indian duo absolutely destroyed the competition (new format Final)** by comprehensively beating the Chinese pair 16-6 in Gold medal battle.
6. Meanwhile, the other Indian duo Heena Sidhu and Shehzar Rizvi finished 12th (479 points).
7. **The 2019 ISSF World Cup** is the annual edition of the **ISSF World Cup in the Olympic shooting events**, governed by the **International Shooting Sport Federation**.
8. The World Cup series will be also as the qualification tournaments for the **2020 Olympic Games**.

## WORLD MALARIA DAY 2019

**Every year on the 25th of April, World Malaria Day is observed to raise awareness about the fatal vector-borne disease.** Malaria remains to be a global health burden on us more than ever, according to WHO's latest World malaria report, no significant reduction in malaria cases have been noticed in the period 2015 to 2017. **WHO's malaria report** says that the estimated number of malaria deaths in 2017, at 435 000, remained virtually unchanged over the previous year. **Especially the African region in our country** shoulders over 90 percent of the global malaria burden. There were an estimated **3.5 million more cases of malaria in 2017 over the previous year**, in 10 African countries.

### What

1. **With no decrease seen in the number of malaria cases**, it is extremely necessary to take some urgent action to accelerate the global response to malaria back.
2. According to WHO the ownership of the challenge lies in the hands of countries most affected by malaria and therefore 2019 World Malaria Day theme is **'Zero malaria starts with me.'** However, this is said to be a grassroots campaign to counter malaria's global health burden.
3. The theme urges countries to keep malaria high on the political agenda, mobilize additional resources, and empower communities to take ownership of malaria prevention and care.

### Significance of World Malaria Day 2019

1. **The day aims at curbing the vector-borne disease.** Urging the global administrators to work toward spreading awareness about the prevention of the disease.
2. According to WHO's Director-General: **"Globally, the world has made incredible progress against malaria.** But we are still too far from the end point we seek a world free of malaria.
3. **The global tally of new malaria cases exceeds 200 million every year.** And a child dies every 2 minutes, from this preventable and treatable disease.
4. The damage inflicted extends far beyond the loss of life: malaria takes a heavy toll on health systems, sapping productivity and eroding economic growth.
5. Ultimately, investing in universal health care is the best way to ensure that all communities have access to the services they need to beat malaria.
6. Individual and community empowerment through grassroots initiatives like **"Zero malaria starts with me"** can also play a critical role in driving progress.
7. Global malaria burden requires to be addressed immediately as the toll of malaria remains unacceptably high. As per WHO, every two minutes, a child dies of this preventable and treatable disease and that each year, more than 200 million new cases of the disease are reported.

## INDIA TOP MEDALS TALLY AT ISSF WORLD CUP

**India weren't able to add to their tally on the final day of the ISSF World Cup in Beijing, China** but it was still enough to see them top the medals tally. With three gold medals and a bronze medal, **India finished with four medals to their name.** **China, second in the tally**, had more medals (five) but fewer golds. **Neighbours China** had two golds, two silvers and one bronze. For the **second consecutive Shooting World Cup**, and third time in two years, India has stood at the top. **At the ISSF World Cup** in New Delhi earlier in the year, India had jointly topped the standings with Hungary.

### What

1. In China, Anjum Moudgil and Divyansh Singh Panwar began **the medal run with a gold in the 10m Air Rifle Mixed Team competition.** Then, teenaged pairing of Manu Bhaker and Saurabh Chaudhary won a gold medal in 10m Air Pistol Mixed Team Pistol event.
2. **Divyansh then won India's first individual medal by clinching a silver in the men's 10m Air Rifle.**

3. On 27 April 2019, **Abhishek Verma won India's third gold of the competition in men's 10m Air Pistol event.**
4. On the concluding day of the competition, two-time former Olympic champion Maria Grozdeva of Bulgaria and Croatian Rifle legend Snjezana Pejicic won the two scheduled finals – the 25m Pistol and the 50m Rifle 3 Positions (3P).
5. Indian interest in the event was limited to the qualifying where Manu Bhaker's finals hopes were dashed when she shot 586 in qualifying to finish 17th.
6. Asian Games champion Rahi Sarnobat managed 579 for a 26th place finish while Chinki Yadav, the third Indian in the competition, shot 570 to end in 56th position.
7. In women's 3P, three Indians were in contention: N Gaayathri finished 19th with a score of 1169 in qualification, Sunidhi Chauhan shot 1160 to end 42nd and Kajal Saini was placed 60th with a qualification round score of 1142.

## UN REPORT ON DRUG-RESISTANT DISEASES

**UN report** has warned that drug-resistant diseases could cause **10 million deaths each year by 2050** and damage to the economy could be as catastrophic as the 2008-2009 global financial crises. According to the report, **by 2030, antimicrobial resistance** could force up to 24 million people into extreme poverty.

### What

1. The **economic impact of uncontrolled antimicrobial resistance** would also be catastrophic. As **drug-resistant pathogens spread, health care expenditures would increase dramatically**, and sustainable food and feed production – including global trade in food, feed and livestock – will increasingly be at risk, said the UN ad hoc **Interagency Coordinating Group (IACG) on Antimicrobial Resistance (AMR).**
2. The expert group was convened at the request of world leaders after the **first UN High-Level Meeting on Antimicrobial Resistance in 2016.**
3. The World Bank estimates that by 2030 up to 24 million people could be forced into extreme poverty, mainly in low-income countries, and annual economic damage as a result of antimicrobial resistance could be comparable to the shocks experienced during the 2008-2009 global financial crisis – but with no end in sight, stated the report.
4. In recent years, **drug resistance has manifested itself in the emergence of superbugs** that have enzymes such as the **New Delhi metallo beta lactamase-I** that makes them resistant to a large number of broad range antibiotics.
5. The aggressive and tenacious fungus *Candida auris* that required special cleaning of a room in Mount Sinai Hospital, where a person infected with the fungus had been admitted for 90 days. Mount Sinai, it was reported, had to rip out ceiling tiles in a bid to get rid of the *Candida* infestation in the room.
6. **Antimicrobial resistance is one of the greatest threats we face as a global community.** This report reflects the depth and scope of the response needed to curb its rise and protect a century of progress in health.
7. It rightly emphasises that there is no time to wait and I urge all stakeholders to act on its recommendations and work urgently to protect our people and planet and secure a sustainable future for all," said Amina Mohammed, UN Deputy Secretary-General and Co-Chair of the IACG.
8. The most glaring red flag in India came some years ago when doctors in Mumbai claimed to have encountered some tuberculosis cases that were **totally drug-resistant (TDR).**
9. Though that claim did not get official sanction from health agencies such as the WHO, it did lead to a new classification of **XDR (extreme drug-resistant) TB.**
10. The latest AMR report estimates that currently, at least 700,000 people die each year due to drug-resistant diseases, including 230,000 people who die from **multidrug-resistant tuberculosis.** India had the second highest total number of estimated MDR TB cases (99,000) in 2008, after China.
11. **The use of antimicrobials to promote growth and routinely prevent disease in healthy animals** and crops without appropriate indication and in the absence of good

agricultural practices to prevent infectious diseases on farms are further contributing to the development and spread of antimicrobial resistance.

## YETI FOOTPRINTS SIGHTED

Indian Army said it had discovered fresh “**mysterious footprints**” of Yeti; the defence sources shared three more pictures from the **Army expedition to Mount Makalu** where the footprints were seen. In one of the fresh pictures, a mountaineering expedition team member could be seen measuring the footprints of the mythical creature. Another image shows three men examining the footprints in the snow.

### What

1. The Army has claimed its **mountain expedition team** found footprints of **Yeti measuring 32×15 inches** close to Makalu Base Camp on April 9.
2. For the first time **Mountaineering Expedition Team** has sighted Mysterious Footprints of mythical beast ‘Yeti’ measuring 32×15 inches close to Makalu Base Camp on 09 April 2019. This elusive snowman has only been sighted at Makalu-Barun National Park in the past.
3. The Army’s claims regarding the sighting of the footprints of the mysterious creature have evoked mixed reactions on social media.
4. **The Yeti- a giant ape-like creature – is part of South Asian folklore.**
5. It is similar to the legends of **Big Foot or Sasquatch in North American** and the **Loch Ness Monster in Scotland**. Most of the literature on the Yeti comes from folklore.
6. The findings were reported from a region located on the **border between Nepal and China. Makalu is among the highest mountains in the world** and stands near the Makalu-Barun valley, a remote wilderness that has also been surveyed by researchers hunting for the Yeti.
7. Though the hunt for the mythical beast has stretched back to centuries, tales of a wild hairy beast roaming the Himalayas captured the imagination of climbers in Nepal in the 1920s, prompting many, including Sir Edmund Hillary, to go looking for the creature.
8. **It was in the 1950s when a British explorer Eric Shipton sighted a series of abnormal footprints** while he was looking for an alternate route to climb Mount Everest.
9. **In 2008, Japanese climbers returning from a mountain in western Nepal** told Reuters they had seen footprints, which they thought belonged to the Yeti.
10. And although they carried long-lens cameras, video cameras and telescopes, they hadn't seen or taken any photographs of the creature.
11. But scientists have found little evidence of the Yeti's existence so far. In 2017, a group of international researchers studied multiple purported Yeti samples collected from across the Himalayan region and concluded they belonged to bears.
12. **In 2008, two men in the United States** said they had found the remains of a half-man, half-ape, which was eventually revealed to be a rubber gorilla suit.
13. Till now there have been numerous instances of people, explorers, scientists claiming to have either sighted Yeti or spotted its footprints. However, none of the claims could be verified, as of now.

## CYBER EXERCISE ON SCENARIO BUILDING & RESPONSE

After the successful conduct of workshop on **Cyber Warfare & Technology**, wherein plethora of lessons emerged, Directorate of Indian Defence University is organising a two day **Cyber Exercise on Scenario Building & Response** on 29-30 Apr 19 at Purple Bay,

Jodhpur Officers' Hostel, New Delhi. The Exercise is represented by Services, NSCS, NTRO, CERT-in, DRDO, NIC, CSRC, Academia and Industry.

#### What

1. **This exercise shall incorporate all best practices** which were recommended during the cyber workshop held earlier with a view to exercise options at different levels to seek synergized response based on the assessment of situation and own capability.
2. The scope of the exercise would encompass the threat landscape and its impact, incident reporting & response framework, procedures for information exchange, attribution, evidence gathering and malicious service takedown, enhancement of capabilities required to protect information, and information systems, enhance cyber awareness, readiness and coordination, integrated international responses & inter-governmental / inter-agency partnerships.
3. Lt Gen PS Rajeshwar, AVSM, VSM, Chief of Integrated Defence Staff delivered the keynote address for the two day cyber exercise. It was followed by painting of Scenarios to seek responses from the stakeholders.
4. **This exercise is planned to be conducted on an annual basis** under the **aegis of Indian Defence University**, which will also involve Indian agencies and subsequently participation from agencies from Friendly Foreign Countries to jointly build the capability against cyber threats.
5. The tri-services -- India Army, Indian Air Force (IAF) and Indian Navy -- carried out a major joint cyber exercise to combat any security threats emerging in the virtual world.
6. The **scope of the "Cyber Exercise on Scenario Building & Response"** would encompass the threat landscape and its impact, incident reporting and response framework, procedures for information exchange, attribution, evidence gathering and malicious service takedown.
7. The two-day exercise would also focus on enhancement of capabilities required to protect information, and information systems, enhance cyber awareness, readiness and coordination, integrated international responses and inter-governmental/ inter-agency partnerships.
8. The exercise is represented by the services, **National Security Council Secretariat (NSCS), National Technical Research Organisation (NTRO), Indian Computer Emergency Response Team (CERT-In), Defence Research and Development Organization (DRDO), National Informatics Centre (NIC), Cyber Security Response Centre (CSRC)**, academia and industry.
9. Chief of Integrated Defence Staff Lt. Gen. P.S. Rajeshwar delivered the keynote address for the exercise followed by painting of scenarios to seek responses from the stakeholders.
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