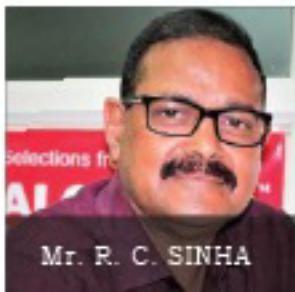




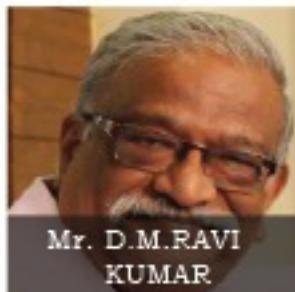
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To  
23-12-2018  
**DECEMBER**  
**Week 03**

# OUR TEAM

## GENERAL STUDIES



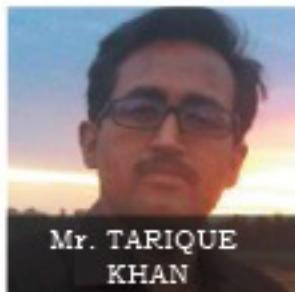
Mr. R. C. SINHA



Mr. D.M.RAVI KUMAR



Mr. SAROJ SAMAL



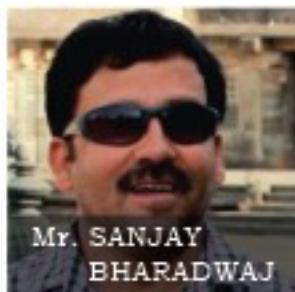
Mr. TARIQUE KHAN



Mr. PRIYESH SINGH SENGAR



Mr. SATYANARAYANA



Mr. SANJAY BHARADWAJ



Dr. ATUL TRIPATHI

Mr. KOUSHIK

Mr. PRANAY AGARWAL

Mr. CHETAN PRAKASH

Mr. NIHIL SAREEN

Mr. RAVI TEJA

Mr. UDAY SIMHA

Mr. SIVA KUMAR

Mr. VIJAY

## OPTIONALS



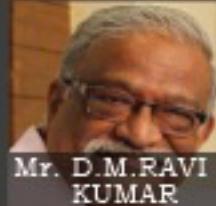
### SOCIOLOGY

Mr. SAROJ SAMAL

### Public Administration



Mr. R.C. SINHA



Mr. D.M.RAVI KUMAR



### MATHEMATICS

Mr. VINNAKOTA SRIKANTH



### GEOGRAPHY

Mr. PRIYESH SINGH SENGAR

## OTHER OPTIONALS

ANTHROPOLOGY

POLITICAL SCIENCE

TELUGU LITERATURE

HISTORY

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## Polity and Governance

### 1. Lok Sabha passes surrogacy bill in likely boost for adoption in India

#### **Context:**

Recently Lok Sabha passes surrogacy (Regulation)bill 2016 in likely to boost adoption in India .The Bill regulates altruistic surrogacy and prohibits commercial surrogacy.

#### **Provisions of Surrogacy (Regulation) Bill:**

- The Bill defines surrogacy as a practice where a woman gives birth to a child for an eligible couple and agrees to hand over the child after the birth to them.
- According to the Bill, all except legally married Indian couples who otherwise would not be able to conceive will be barred from opting for surrogacy. Besides, only a close relative can become a surrogate for “medically proven infertile” couples.
- The Bill allows altruistic surrogacy which involves a surrogacy arrangement where the monetary reward only involves medical expenses and insurance coverage for the surrogate mother. Commercial surrogacy is prohibited under the Bill.
- This type of surrogacy includes a monetary benefit or reward (in cash or kind) that exceeds basic medical expenses and insurance for the surrogate mother.
- The draft law has a provision for a jail term of up to 10 years and a fine of Rs. 10 lakh for violations such as abandoning a child and choosing commercial surrogacy.

#### **How it will boost Adoption scenario in India?**

- From April 2017 to March 2018 only 3,276 children were adopted in India, according to the Central Adoption Resource Authority, ministry of women and child development.
- As surrogacy services were easily available, people used to hire a surrogate for having a baby, no matter if they were married, single or same sex couples so stringent rules and regulations may encourage couples to turn toward adoption.
- As commercial surrogacy will not be an option in the near future, intended single parents or couples willing to have a baby will look at The intending couple must be Indian citizens, married for at least five years with at least one of them being infertile adoption to fulfil the need. This may possibly boost the dismal adoption figures in India

#### **Criticism of the Bill:**

- Supreme Court has recently decriminalised Section 377 and the LGBT

community has been accepted to be a part of the mainstream. But in this bill there is no mention of them.

- The Bill does not talk about who are close relatives.
- The Bill raises questions over the reproductive rights of a woman. The right to life enshrines the right of reproductive autonomy, inclusive of the right to procreation and parenthood, which is not within the domain of the state, warranting interference of a fundamental right. It is for the person and not the state to decide modes of parenthood. It is the prerogative of person(s) to have children born naturally or by surrogacy in which the state, constitutionally, cannot interfere.
- Restricting limited, conditional surrogacy to married Indian couples and disqualifying other persons on the basis of nationality, marital status, sexual orientation or age does not appear to qualify the test of equality (article 14), or of being a reasonable classification, satisfying the objective sought to be achieved.
- Infertility cannot be compulsory to undertake surrogacy. This violates the Freedom of choice available to citizens

### **Way forward:**

There is definitely a need for regulation. But the large-scale banning proposed in this bill is akin to trying to cap a volcano. There is no stopping technological advancement and no government can wish away the fact that it has been possible for decades now to create babies outside the womb and to successfully implant them in the womb of a woman who has no genetic link to the embryo. While there is a need for regulation, we cannot wish away the advances in medical science and the subsequent impact on surrogacy. We need to have a legislation which, while dealing with the problems associated with surrogacy does not interfere with the reproductive rights of a woman and freedom of choice available to an individual

## **2. Strategy for New India @75**

### **Context:**

Federal policy think tank NITI Aayog has suggested several economic reforms with an aim to accelerate growth and boost the size of India's economy to \$4 trillion in the next five years.

### **Strategy for New India @75:**

- The blueprint, called the "Strategy for New India@75", has been released by finance minister Arun Jaitley and NITI Aayog vice chairman Rajiv Kumar.
- It proposes that increasing the share of taxes in national income to 22% from 17%.
- Target an 8% annual economic growth rate and a \$4 trillion GDP

- Bring crude, select petroleum products, electricity under GST
- Privatize tier-1 airports, railway assets such as freight terminals, engines
- A new transport regulator for cities with over 1 million people

### **Targets under Strategy for New India @75:**

- The strategy paper lays emphasis on completing major infrastructure projects such as the first phase of Bharatmala Pariyojana, laying roads in the north-eastern region and digitally connecting 250,000 gram panchayats through the Bharat Net programme by 2019.
- It aims to deliver all government services up to the gram panchayat level digitally by 2022-23.
- It also proposes using idle land available with state-owned companies for productive use giving every family a pucca house and ensuring power for all.
- Production of minerals is another priority for which the blueprint proposes a revamped exploration policy and a regulator.
- One key area of reform proposed by NITI Aayog is privatization of key government assets. The document advises that the government exit nonstrategic sectors by divesting its stake, which will add to the exchequer.
- Liberalizing foreign ownership limits across industries, encouraging foreign investments in government securities and easing rupee bond limits are among the key suggestions.
- NITI Aayog has suggested that the investment rate be boosted from 29% of GDP in FY18 to 36% by FY23.
- Doubling goods and services exports to \$800 billion by FY23 from \$478 billion in FY18, improving the business environment and working with states to relax land and labour rules are also part of the agenda.

### **3. Centre drafts child protection policy**

#### **Context:**

The Ministry of Women and Child Development has placed the draft policy on its website and invited comments from stakeholders until January 4. This will be the first policy dedicated to the protection of children, an area that until now was only a part of the broader National Child Policy, 2013.

#### **Why in news?**

The Supreme Court had earlier directed the CBI to investigate allegations involving 17 shelter homes for children, destitute women, beggars and senior citizens in Bihar following the case of sexual abuse of more than 30 girls in a shelter home in Muzaffarpur in the State. The Supreme Court had also asked the Centre to consider framing a national policy on protection of children.

## **Draft child protection policy:**

- The child Protection Policy is applicable to Institutions/Organizations.
- All institutions and organizations should develop a child protection policy and code of conduct for employees in line with the national guidelines and various legislations for protection and welfare of children and display it appropriately
- All employees/ contractual workers must sign the declaration for child protection and agree to abide by it .It should be based on the premise of Zero tolerance of child abuse and exploitation
- Organize orientation programmes on child protection and various legislations related to it and make it mandatory for all employees at all levels (including contractual workers).
- Corporate houses and industries must establish and strengthen monitoring mechanisms to ensure that industry/subsidiaries are not using child labour in any form.
- Crèches/ mobile crèches for employee's children including those on daily wages/contractual basis if the number of employees is fifty or above; otherwise appropriate space and facility for baby care to be provided for mothers with infants.
- Child friendly zones must be developed in all places for public dealing.
- The CHILDLINE 1098 and contact details of designated officer for child protection must be displayed appropriately.
- Ensure any individual in the organization/institution who abuses or exploits children or violates any section of this policy should be appropriately punished as per law

## **Outside of the Draft policy:**

- Unlike the National Child Policy, 2013, the latest document doesn't talk about children who may need additional special protection measures: including those affected by migration, communal or sectarian violence, children forced into begging or in conflict with the law, and those infected with HIV/AIDS.
- It also doesn't talk about the role of the state for ensuring the protection of child rights or addressing local grievances

## **Way forward:**

The document needs to define what child protection is as well as what it means by institutions or organizations. Safety of Children is a common shared responsibility; it cannot be done in isolation by either the school or parents or government. We must all work together to make sure instances of child abuse soon become historical references and not present-day realities.

## 4. MHA authorises 10 central agencies to access any computer resource

### Context:

The Ministry of Home Affairs (MHA) has issued an order authorising ten security and intelligence agencies of the country to access any information stored in any computer for the purpose of monitoring, decrypting and interception.

### Who are these agencies?

The 10 agencies include Intelligence Bureau, Narcotics Control Bureau, Enforcement Directorate, Central Board of Direct Taxes, Directorate of Revenue Intelligence;, Central Bureau of Investigation, National Investigation Agency Cabinet Secretariat (RAW), Directorate of Signal Intelligence (For service areas of Jammu & Kashmir, North-East and Assam only), and Commissioner of Police, Delhi.

### Highlights of the Order:

- The ministry has vested the authority on the agencies under Section 69 of the Information Technology Act, 2000 and Rule 4 of the Information Technology Procedure and Safeguards for Interception, Monitoring and Decryption of Information) Rules, 2009.
- The order mandates for a subscriber or service provider or any person in charge of the computer resource to extend technical assistance to the agencies.
- Non-compliance will invite seven-year imprisonment and fine.

### Concerns raised:

- Only data in motion could be intercepted earlier. But now data revived, stored and generated can also be intercepted as powers of seizure have been given.
- This means not just calls or emails, but any data found on a computer can be intercepted. The agencies will also have powers to seize the devices.
- The sweeping powers given to agencies to snoop phone calls and computers without any checks and balances is extremely worrisome. This is likely to be misused.

## 5. Centre on maritime security

### Context:

The Navy will formally inaugurate the Information Fusion Centre (IFC) for the Indian Ocean Region (IOR).

### Key facts:

- The Information Fusion Centre will serve countries that have White Shipping Information Exchange agreements with India.

## A seamless exchange

The Information Fusion Centre at Gurugram will facilitate transfer of commercial shipping information between countries in the Indian Ocean Region

### How will it function?

- At present, data will be shared by virtual means - telephone calls, faxes, emails and video conferencing
- The centre will in future host liaison officers from foreign countries for quicker analysis of information and timely inputs
- It will also impart training in maritime information collection and sharing



The IFC-IOR will strengthen maritime security in the region and beyond by building a common coherent maritime situation picture

DEFENCE OFFICIAL



- The IFC-IOR is established with the vision of strengthening maritime security in the region and beyond, by building a common coherent maritime situation picture and acting as a maritime information hub for the region.

### Headquarters: Gurugram

- The IFC has been established at the Navy's Information Management and Analysis Centre (IMAC) in Gurugram, which is the single point centre linking all the coastal radar chains to generate a seamless real-time picture of the nearly 7,500-km coastline.
- "All countries that have already signed white shipping information exchange agreements with us, about 21 of them, are IFC partners."
- "With the launch of the IFC, they now have the option of positioning liaison officers at the IFC for which we need to build up requisite infrastructure too. So we now start with their 'virtual presence'."

### Maritime network

In a related development, India has signed the ascension agreement to the Trans Regional Maritime Network (T-RMN) which facilitates information exchange on the movement of commercial traffic on the high seas. The multilateral construct comprises of 30 countries and is steered by Italy. Commodore K.M. Ramakrishnan signed the agreement on behalf of the Indian Navy at the Italian Naval Headquarters in Rome.

## AIS systems on ships

- The information is available primarily through the Automatic Identification System (AIS) fitted on merchant ships with more than 300 gross registered tonnage as mandated by the International Maritime Organisation.
- The AIS information comprises name, MMSI number, position, course, speed, last port visited, destination and so on.
- This information can be picked up through various AIS sensors including coastal AIS chains and satellite based receivers.

"The Indian Navy is mandated to conclude white shipping information exchange agreements with 36 countries and three multi-national constructs".

Such multilateral agreements are necessitated due to the large traffic in the Indian Ocean which cannot be entirely monitored by any one nation.

## 6. Lok Sabha passes Consumer Protection Bill, minister says 1986 law needs change

**The highlights of the Bill are:**

**Replaces the Consumer Protection Act, 1986:** The Bill enforces consumer rights, and provides a mechanism for redressal of complaints regarding defect in goods and deficiency in services.

**Consumer Disputes Redressal Commissions:** Will be set up at the District, State and National levels for adjudicating consumer complaints. Appeals from the District and State Commissions will be heard at the next level and from the National Commission by the Supreme Court.

### The Bill sets up a Central Consumer Protection Authority

- To promote, protect and enforce consumer rights as a class. It can issue safety notices for goods and services, order refunds, recall goods and rule against misleading advertisements.
- CCPA is a national level regulator dealing with matters relating to violation of rights of consumers, unfair trade practices and false or misleading advertisements which are prejudicial to the interests of public and consumers.
- The District Collector is empowered to report to the CCPA regarding mass consumer complaints in the concerned jurisdiction.
- CCPA has power to order recall of goods which are dangerous, hazardous or unsafe and to direct discontinuation of practices which are unfair and prejudicial to the interests of consumers.
- The district Commissions are authorised to look into complaints involving claims worth one crore rupees, which was 20 lakh rupees earlier.

- The State Commissions' limit is to be increased from one crore rupees to 15 crore rupees. Complaints over and above that limit would be handled by the National Commission.

**Consumer Protection Council:** The Bill establishes Consumer Protection Councils at the district, state and national levels to render advice on consumer protection.

### Offences

- The Bill makes violation of consumer rights punishable offences
- The Bill also addresses the menace of adulteration, by making manufacture, sale, storage of products mixed with adulterants punishable offences.
- Cognizance of offence can be taken by a court only on a complaint filed by CCPA.

**Product Liability:** The Bill allows a person to make a claim of product liability against a manufacturer, seller, or service provider for any defect in a product or deficiency in a service. A claim for compensation may be made for any harm caused, including: (i) property damage; (ii) personal injury, illness, or death; and (iii) mental agony or emotional harm accompanying these conditions.

The Bill also addresses new age developments like e-commerce, direct selling, tele-marketing etc.

### Key Issues with the Bill:

- The Bill sets up the Consumer Disputes Redressal Commissions as quasi-judicial bodies to adjudicate disputes. The Bill empowers the central government to appoint members to these Commissions. The Bill does not specify that the Commissions will comprise a judicial member. If the Commissions were to have members only from the executive, the principle of separation of powers may be violated.
- The Bill empowers the central government to appoint, remove and prescribe conditions of service for members of the District, State and National Consumer Disputes Redressal Commissions. The Bill leaves the composition of the Commissions to the central government. This could affect the independence of these quasi-judicial bodies.
- Consumer Protection Councils will be set up at the district, state, and national level, as advisory bodies. The State and National Councils are headed by Ministers in-charge of Consumer Affairs. The Bill does not specify whom the Councils will advise. If the Councils advise the government, it is unclear in what capacity such advice will be given.
- No visible provisions have been observed in the bill to provide control over online trading which has been on increasing trend.

## 7. Misusing NSA: the detention of a Manipur journalist

### Why in news?

Manipur journalist booked under the National Security Act (NSA) for making derogatory comments against chief Minister

### Important Facts:

- Journalist was arrested after he made derogatory comment against Prime Minister of India and Chief Minister of state in previous month
- Later District Magistrate granted him bail however he was arrested again a couple of days later and detained under the NSA.
- The detention of a journalist in Manipur under the stringent National Security Act for a social media post is a clear instance of misuse of power and a blatant violation of his rights as a citizen.
- The main argument put forward by critics is that National Security Act is used as an unconstitutional measure to deprive an individual of their constitutional rights violating the basic criminal jurisprudence tenets.

### About NSA

- The NSA was introduced by Indira Gandhi after she came to power in 1980.
- The NSA was amended in 1984, 1985 and 1988 to consolidate some of the government's powers, besides increasing the possible periods of detention in Punjab and Chandigarh.
- With the exception of the state of Jammu and Kashmir, the Act is applicable to the rest of the country. Jammu and Kashmir has a law similar to the NSA – the Jammu & Kashmir Public Safety Act (1978), which too has been grossly misused.

### The NSA can be invoked against

- Those who imperil the defence of the state,
- In Relation of the state with foreign powers
- Security of the state,
- Public order and Maintenance of essential supplies and services.
- NSA however allows the government to keep such serious offenders in custody without charging them for any of these serious offences. This is convenient for the government and police because it allows them to escape the strictures of the Criminal Procedure Code and the courts of the land.

### The National Security Act and the Constitution:

- **Under Article 20 of the Indian Constitution** provide for a person accused of a crime, a guaranteed the rights to a legal counsel, to be

informed of charges, to appear before a magistrate within 24 hours, to cross-examine any witnesses and question any evidence presented and to be presumed innocent until proven guilty beyond a reasonable doubt in a court of law.

- **The NSA, however, does not apply any of these rights to preventive detention cases.** It permits the extrajudicial detention of individuals if the government is subjectively “satisfied” that an individual is a threat to foreign relations, national security, India’s defence, state security, public order, or the maintenance of essential supplies and services.

### Criticism:

- The Indian government has exploited the NSA by regularly detaining individuals, using the plea of preventing future disturbances of public order. But in reality, it is as a punishment for the current alleged crimes.
- It is disturbing that State governments continue to use it when the Law Commission is revisiting Section 124A of the Indian Penal Code there is a demand for its repeal.
- The government argued that the current and past activities show a propensity to commit crimes that can be prevented only through extra-judicial detention which sometime can be misused.
- Based on this assumption, court determined the future threat based on a close examination of the current crime, without examining whether there is any evidence of an intention or plan to commit a future crime. This type of examination suggests that preventive detention under the NSA is a punitive rather than preventive measure.
- Police often rely on the NSA when they are unwilling or unable to make an appropriate criminal case under the strictures of constitutional and statutory law

### Conclusion

- India’s parliament and judiciary must revisit the NSA to close any loopholes that permit law enforcement to abuse constitutional and statutory rights.
- Mechanism must be evolved to deprive the police of this convenient tool for punishing alleged criminals without having to uphold accused persons’ fundamental rights.
- It is time for India to catch up with the international community and recognise that preventive detention must not be used as an ordinary and regular law and order measure.

## International Relations

### 8. U.S. announces Syria troop pull-out

#### Why in news?

Trump orders US troops out of Syria, declares victory over ISIS

#### Important Facts:

- Civil war in Syria has already caused catastrophic damage. More than 465,000 Syrians have been killed, 1 million have been injured and more than half the country's population have been forced to flee their homes
- In December 2018, Trump administration ordered withdrawal of U.S. troops from Syria immediately. Trump said the troops had accomplished their mission in Syria by defeating the Islamic State. But many experts say the militant group is far from beaten.
- A complete withdrawal of U.S. troops from Syria would still leave a sizeable U.S. military presence in the region, including about 5,200 troops across the border in Iraq.

#### How did the war in Syria start?

- In March 2011, peaceful protests broke out in the country as part of the Arab Spring uprisings.
- Organizers called on Assad to undertake democratic reforms, but his government responded with violence. Some of the protesters then teamed up with military defectors to form the Free Syrian Army, which sought to overthrow the government.
- By 2012, this armed struggle had devolved into a full-blown civil war.

#### How was United States involved into the war?

- The United States has been reluctant to become too entangled in Syria, but it has acted for two main reasons.
  - First, the Islamic State militant group began gaining a foothold in the country in 2013. The next year, the United States launched airstrikes against the group.
  - It eventually sent ground troops into the fight, and about 2,000 U.S. forces are now deployed there.
- Second, the United States has acted to punish the Assad government for using chemical weapons such as sarin and chlorine gas on civilians.

#### What is the role of Russia in Syria war?

- Russia has long supported Assad's government. According to scholar, Russia helped build the modern Syrian military, and Assad is one of Russia's strongest allies in the Middle East.

- Russia has often blocked meaningful international action on Syria by vetoing proposals in the U.N. Security Council, and Moscow changed the course of the war in Assad's favor by beginning a military intervention in 2015.

### **Who are the key regional players helping Assad?**

- One of Assad's key allies is Iran. Iran needs Syria to move its weapons and proxy militias across the Middle East. So when Assad seemed threatened, Iran stepped in to support him.
- That upset Iran's rivals in the region, including Saudi Arabia and Turkey. So they began sending arms and money to anti-Assad rebels, including extremist militias.
- Today, many wars are being fought inside Syria. The Syrian government is still at war with the rebels. Israel is at war with Iranian-backed forces. And the United States is trying to kill off the Islamic State.
- There is another conflict, too. Syria is home to a significant number of Kurds, a key U.S. ally. Turkey fears that the Kurds aim to establish a separate state and has been bombing Syrian cities under Kurdish control.

### **Concern Remain:**

- Syrian families do not have basic necessities, such as food, shelter and medical care. Children cannot go to school. The war is being fought in towns and on the streets.
- The move plunged U.S. allies into uncertainty and created the potential for greater regional instability
- There are also fears a US withdrawal will cede influence in Syria and the wider region to Russia and Iran.
- Meanwhile, Israel has been carrying out strikes on Syrian military bases and other facilities on its own.

## **9. India-Maldives Relations**

### **Why in news?**

- India on Monday declared a financial package of \$1.4 billion for the Maldives. The plan was being prepared over the last month and was formally declared at the press conference attended by President Ibrahim Mohamed Solih of the Maldives and Prime Minister Narendra Modi.
- Both sides also agreed to coordinate maritime policing activities in the Indian Ocean region.
- The package comes as Maldives is facing a debt of \$3.2 billion with China.

### **Recent developments**

- Maldives immigration authority has not been issuing work visas to Indians since March this year.

- This is retaliation from the Maldives for India's condemnation of Maldivian President Abdulla Yameen's declaration of emergency in February after the country's Supreme Court reversed the conviction of opposition leader, Mohammed Nasheed, and others.
- The Maldives has also asked India to take back its gift of two Dhruv Advanced Light Helicopters, one manned by the Indian Coast Guard and another by the Indian Navy, by the end of June. Though the Maldivian government has said that these were not the helicopters it wanted, the real worry seems to be the presence of Indian defence personnel who are maintaining and operating the aircraft.
- In retaliation, it is learnt that Delhi voted against Malé and in favour of Indonesia for a non-permanent seat at the UN Security Council last week.

### **Weakening ties between India and the Maldives**

- There has been a series of setbacks in India-Maldives ties, starting from March 2015 when Prime Minister Narendra Modi cancelled a visit
- Recent moves by Abdulla Yameen, President of the Maldives, have put Malé on a collision course with New Delhi
- India criticised the government for its incarceration of former President Maumoon Abdul Gayoom and Chief Justice Abdulla Saeed, sentenced to 19 months in prison for an alleged plot to unseat Mr. Yameen
- The Maldives in December 2017 also signed a free trade agreement with China
- The Maldives, under Yameen, is also wooing Pakistan, China's closest friend and ally. Soon after Pakistani army chief General Qamar Javed Bajwa paid a visit to Malé, Islamabad offered a \$10 million loan to finance the purchase of two Super Mushak aircraft from Pakistan's Aeronautical Complex.
- The strain is now evident in two areas where India-Maldives ties had been the strongest: strategic relations and people-to-people engagement

### **Internal developments in the Maldives which concerned India in recent past**

#### **Islamist radicalisation**

1. In the past decade or so, the number of Maldivians drawn towards terrorist groups like the Islamic State (IS) and Pakistan-based madrassas and jihadist groups has been increasing.
2. In terms of proportion to population, this number of Maldivian nationals (200) joining IS, is quite high compared to other South Asian countries, irrespective of whether they are Muslim-majority countries.
3. Political instability and socio-economic uncertainty are the main drivers fuelling the rise of Islamist radicalism in the island nation.

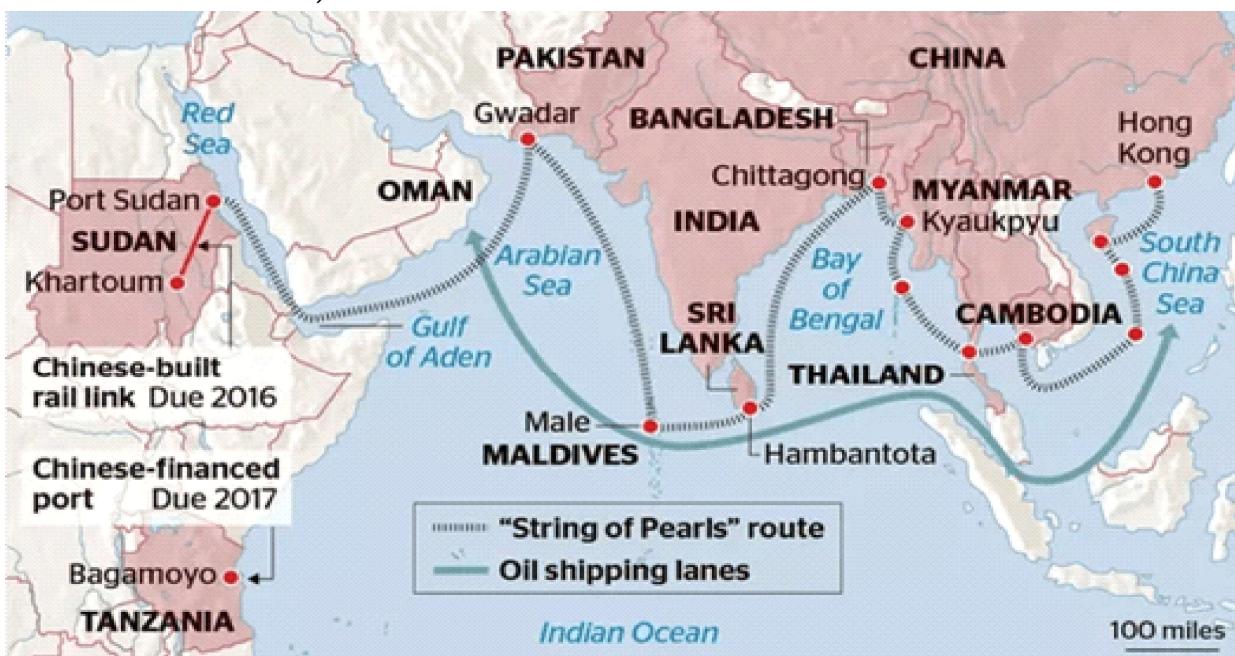
#### 4. India has two worries in this regard:

- The exfiltration of members of Indian terror groups like the Students Islamic Movement of India (SIMI) and the Indian Mujahideen (IM) to the Maldives after their crackdown in India
- The possibility of LeT using remote Maldivian islands as a launch pad for terror attacks against India and Indian interests.

Overall, India's concern is regarding how radical Islamist forces have been gaining political influence in the neighbourhood.

#### Role of China

- China's strategic footprint in India's neighbourhood has increased.
- The Maldives has emerged as an important 'pearl' in China's "String of Pearls" for ensuring the security of its sea lanes, especially the unhindered flow of critically-needed energy supplies from Africa and West Asia through the Indian Ocean.
- Chinese have remained among the top visitors to the Maldives. Beijing has evinced a keen interest in developing infrastructure in the Ihavandhoo, Marao and Maaranthoo Islands.



- During Chinese President Xi Jinping's visit in 2014, the Maldives agreed to become a partner in China's Maritime Silk Route.
- China has provided grant and loan assistance to the Maldives to build a bridge between the capital and the airport (called the China-Maldives friendship bridge).
- Amendments to the Maldivian Constitution in July 2015 allowed foreigners to own land, including investments of over US\$ 1 billion for projects where 70 per cent of the land has been reclaimed. Looking at the parameters, China will be the obvious beneficiary.
- Chinese nationals now account for the largest tourist arrivals in the islands.

- India views the growing Chinese footprint in the Maldives with concern. India's concern stems from the increasing Chinese strategic presence in the Indian Ocean region.
- Though the Maldivian government under Yameen has reassured India that the Chinese presence is purely economic, the concern of 'places turning into bases' is genuine
- In December 2017, China signed the Free Trade Agreement with the Maldives.
- It paves the way for a tighter embrace between Beijing and Maldives and it will also open the Maldives to Chinese goods and tourists in unprecedented numbers.
- Delhi saw this as a betrayal of the Maldives' publicly stated "India First" policy
- The Yameen government must reconsider these policies.

### **Way forward**

- India too must pause to consider why relations have soured so badly.
- India cannot take its predominant power in South Asia for granted.
- Whether it is Nepal, where the people recently elected the pro-Chinese and moderate Communist, K.P. Oli, to power, or the Maldives, Delhi must abandon their perceived arrogance towards its smaller neighbours.
- India needs to separate ground reality from its desires — whatever its discomfort with Yameen, it has to learn to deal with him.
- Elections are due in the Maldives later this year and Delhi must realistically assess the pros and cons, including its policy towards exiled former president Mohamed Nasheed, before taking sides.
- China is here to stay in the Maldives, as well as across the rest of South Asia. Delhi needs to learn to deal with issues realistically.

## **10. As Brexit vote approaches, here are four possible scenarios for UK and the deal**

British Prime Minister Theresa May faces a dwindling number of options over Brexit after EU leaders at a summit last week rebuffed her attempts to tweak a Brexit deal she struck with them.

Here are the four main scenarios facing Britain while the clock ticks down to March 29, 2019 — the day it is scheduled to depart the European project after 46 years:

### **Deal**

- This is the Brexit that the British government and EU leaders want — and one which the British parliament refuses to accept.
- The deal has been rejected from opposing wings of parliament for

either keeping Britain tied too closely or remotely to the European Union.

- May aborted a vote on the deal set for last week because of its certain defeat.
- Brexit backers in her party then plotted an ultimately unsuccessful coup that saw more than a third back a motion to force May out.
- May promised them she would wring concessions from Brussels but apparently failed to do so at a summit last week.
- May's government intends to reintroduce the very same draft for a vote sometime between January 7 and January 21.
- It will hope that fear of the chaos that a no-deal exit might bring will force lawmakers to put aside their reservations.

### No-deal

- This is billed as the doomsday scenario that threatens to trigger a recession in Britain and markedly slow the European Union's economic growth.
- It is the default option if the British parliament votes against the deal and there are no other solutions.
- May's agreement was meant to keep trade rules between the world's fifth-biggest economy and largest single market almost unchanged for a transition period running through the end of 2020.
- A sudden shift to different standards would impact almost every economic sector — and possibly see the costs of everyday products in Britain soar.
- Both sides have been forced to ramp up their preparations for a disorderly Brexit over the past few weeks.
- UK businesses are stockpiling goods while Brussels is trying to find a way to maintain free-flowing operations involving London's massive financial services hub.

### Second referendum

- EU supporters have been calling for another vote ever since the first one backed Leave by a 52-48 margin in June 2016.
- There is no law keeping Britain from doing it all over again, but many question whether this would be democratic — and why a second attempt should take precedence over the first.
- It also threatens to be just as divisive with opinion polls showing the country still split over the issue.
- Calls for another vote have ramped up over the last few months, with former prime minister Tony Blair on Sunday saying "what seemed a few months ago unlikely is now I would say above a 50 percent likelihood."

- Proponents argue that the Brexit people were promised looks nothing like the deal on offer and that Britons never backed a no-deal scenario.
- Some members of May's cabinet are reported to be pushing for a second vote, but the prime minister is against the move, warning it "would do irreparable damage to the integrity of our politics."
- It is also unclear what options to give people in a second ballot — and what happens if Brexit wins again.

### **Parliament votes on options**

- Another possibility that has come to the fore in recent days is for several non-binding votes to be held in parliament on different Brexit options to effectively determine the government's strategy.
- The first would be on May's deal but others could include a no-deal Brexit, a second referendum or a "Norway deal" that would keep Britain much more closely anchored to the European single market and allow unfettered immigration.
- Business secretary Greg Clark appeared to hint at this on Monday, telling BBC radio that parliament should be "invited to say what it would agree with" if it votes against the draft Brexit agreement on the table.
- Other cabinet ministers including finance minister Philip Hammond are reportedly in favour of this solution as a democratic way to end the current limbo.

## Economy

### 11. Govt to set up panel to look into tax issues faced by startups

#### **Why in news?**

The government to setup an expert committee to look into all the taxation issues being faced by startups and angel investors

#### **Important Facts:**

- The move comes after Income Tax Department issued notices to over 150 startups over the last few weeks asking them to clear taxes on their angel funding, which in some cases were nearly 40 percent of the fundraise
- Central Board of Direct Tax recognizes that startups are going to bring a lot of innovation to the country and, therefore, no coercive action related to tax demands would be made till the time an expert panel resolved the issue of taxing startups.
- The 2012 budget speech prefaced the introduction of angel tax to curb the laundering of black money through private limited companies.

#### **Background of Angel Tax:**

- In May 2018, the tax department exempted angel investors from income tax on their investments in startups.

## Differences between Angels and VCs

<b>Characteristics</b>	<b>Angel Investors</b>	<b>Venture Capitalists</b>
<b>Background</b>	Former entrepreneurs	Finance, consulting, some from industry
<b>Investment approach</b>	Investing own money	Managing a fund and/or investing other people's money
<b>Investment stage</b>	Seed and early stage	Range of seed, early stage and later stage but increasingly later stage
<b>Investment instruments</b>	Common shares	Preferred shares
<b>Deal Flow</b>	Through social networks and/or angel groups/networks.	Through social networks as well as proactive outreach
<b>Due Diligence</b>	Conducted by angel investors based on their own experience. (more cost efficient)	Conducted by staff in VC firm sometimes with the assistance of outside firms (law firms, etc.) (more costly)
<b>Geographic proximity of investments</b>	Most investments are local (within a few hours drive).	Invest nationally and increasingly internationally with local partners
<b>Post investment role</b>	Active, hands-on	Board seat, strategic
<b>Return on Investment</b>	Important but not the main reason for angel investing.	Critical. The VC fund must provide decent returns to existing investors to enable them to raise a new fund (and therefore stay in business)



Source: OECD, adapted from EBAN 2006 referencing Wong 2002 and Ibrahim 2010

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- The decision to give investors in start-ups exemption from income tax was aimed at addressing a key issue faced by angel investors who put money during early growth stage, and would also provide level-playing field for all investors.
- According to the notification, an angel investor with a minimum net worth of Rs 2 crore or an average returned income of over Rs 25 lakh in the preceding three financial years would be eligible for 100 per cent tax exemption on investments made into startups above fair market value.
- However, recently several startups had raised concerns over taxation of angel funds under Section 56 of the Income Tax Act, which provides for taxation of funds received by an entity.

### **Function of Expert Committee**

- The committee will make suggestions for recognition of startups under the “Start Up India” programme and premium paid by investors while investing in such companies.
- The committee will make recommendations on individual cases of recognised startups to the DIPP on issues pertaining to tax exemptions for such ventures.
- Committee will make recommendations on individual cases of recognised startups to the DIPP on issues pertaining to tax exemptions for such ventures.
- Members of angel networks expressed fears that this could kill the startup ecosystem. Industry leaders and startup founders.

## **12. Recapitalisation of Banks**

### **Why in news?**

The Union government has sought Parliamentary approval to provide Rs 41,000 crore as a recapitalization fund to public sector banks during the current fiscal, 2018-19

### **Important Facts:**

- The amount will be used for the “recapitalization of Public Sector Banks through issue of Government Securities”, and the details were given in Supplementary Demands for Grants.
- Once the proposal will be approved this would take the total recapitalization package for the current financial year to <sup>1</sup> 1, 06,000 crores, of which the government plans to utilise <sup>1</sup> 83,000 crore over the remaining portion of the year.
- The government had announced a <sup>1</sup> 2.11 lakh crore capitalization plan in October 2017, of which <sup>1</sup> 1.35 lakh was to be raised through recapitalization bonds and the remaining was to be raised by the banks either through the market or the sale of non-core assets.

- So far, the banks have raised <sup>1</sup> 24,400 crores and have received all approvals to raise more from the market.

## **About Recapitalization**

- Recapitalization is restructuring a company's debt and equity mixture, often with the aim of making a company's capital structure more stable or optimal.
- Recapitalization of banks was necessary because the PSBs are facing financial problems and they need money in the context of rising bad debts.
- Similarly, they need funds to meet the higher capital requirements under Basel III norms. Altogether, there are following three sound reasons for recapitalization of PSBs.
  - Rising volume of bad assets has led to erosion of capital.
  - The Basel III capital norms require higher capital in banks.
  - Expanding credit needs in the economy can be made only with higher capital.

## **Four Broad conditions under which banks are eligible to receive capital:**

- To meet the regulatory capital norms.
- The second is aimed at helping banks currently under the Prompt Corrective Action (PCA) framework to come out of it by improving their capital to risk-weighted asset ratios (CRAR) to 9%, their capital conservation buffers to 1.875% and reduce their net NPAs to 6%.
- The third category of banks to receive capital would be the non-PCA banks that are in danger of crossing the threshold into the PCA framework.
- The fourth would be to provide regulatory and growth capital to banks that are undergoing mergers, such as Vijaya Bank, Dena Bank, and the Bank of Baroda, which are to be merged into a single entity.

The Finance Ministry says this expenditure will not have any impact on fiscal deficit and that the Union government will be able to keep the deficit at 3.3 percent of GDP.

In context of recent demand for recapitalization fund the state-run banks are showing tremendous improvements in terms of recognition, provisioning, recovery and reforms. Therefore, it is important that Government empower them and equip them with capital so that banks are ready to support growth of the fastest growing economy

## **Following are the three modes of fund mobilization under recapitalization effort.**

- **Budgetary allocations:** Government buy shares of public sector bank.
- **Market Borrowings:** PSBs mobilise fund from the market through borrowings.

- **Recapitalization Bonds:** Government will issue Bank Recapitalization Bonds

### Way Forward:

- It is time to re-evaluate the benefits of having a banking system dominated by public sector banks and the benefits that greater private ownership can bring about.
- Impact of recapitalisation could be bad on fiscal deficit of India as it may increase the fiscal deficit gap.
- The capital infusion will address the problem of stock of NPAs by cleaning up the balance sheet. It is equally important to ensure that the cycle of piling up of NPAs is not repeated
- Emphasizes must be laid upon the steps to be taken to ensure governance of banks to follow highest standards. There is also a need for institutional mechanism to ensure the past is not repeated
- Banks should not look for easy money like recapitalization. They need to earn and must adopt the differentiated business strategy and exit from non-core businesses and focus on their core competencies.
- According to the financial services secretary the government would come out with EASE (Enhanced Access & Service Excellence) Index for ranking of banks. This would increase public accountability of PSBs as independent agencies would evaluate and rank PSBs annually on reforms.

### Additional Facts:

The regulatory architecture is globally framed by the Basel Committee on Banking Supervision—a committee of bank supervisors consisting of members from representative countries. Its mandate is to strengthen the regulation, supervision and practices of banks and enhance financial stability.

### Category of Basel Norms:

- The Basel I norms were issued in 1988 to provide, for the first time, a global standard on the regulatory capital requirements for banks.
- The Basel II norms, introduced in 2004, further strengthened the guidelines for risk management and disclosure requirements.
- **Capital adequacy ratio (CAR)**—or, capital to risk-weighted assets ratio (CRAR) as it is the ratio of regulatory capital funds to risk-weighted assets—which all banks with an international presence were to maintain.
- These norms were revisited again in 2010—known as Basel III norms—are a comprehensive set of reform measures to strengthen the regulation, supervision, risks and capital management of the banking sector that evolved after the global financial crisis of 2008.

### 13. What to expect if your bank goes for a merger

#### What if your bank undergoes a merger?

- While “mergers and acquisitions” are fairly commonplace in the corporate world, they rarely impact you on a daily basis.
- The customers of Dena Bank, Vijaya Bank and Bank of Baroda are finding that out for themselves.
- On 10 September 2018, the government proposed to merge the three state-owned banks. The merged entity will be India’s third-largest lender and the second-largest in terms of deposits.
- The banks’ merger is not the first. In 2016, the government decided to merge State Bank of India (SBI) with its five associate banks and Bharatiya Mahila Bank.
- As a result of the consolidation, there was a significant rise in SBI’s bad loans portfolio, which impacted the bank’s profits.
- Bank mergers, however, may not be a bad thing for customers. “Bank mergers have become commonplace today.
- With institutions like banks falling in the ‘too big to fail’ category, one way to look at this is that your money is safer with a larger bank than a smaller one,” said Nikhil Kamath, co-founder, Zerodha.

#### For account holders

- Account holders are, perhaps, the ones who witness the most changes due to the merger of banks. Although you will remain an account holder in the merged entity, you will be issued new cheque books and debit or credit cards.
- As a result, you will have to update IFSC and other details with the income tax department, insurance providers and for your mutual fund investments. You will need to give fresh mandates for your SIPs and EMIs, and will have to give fresh standing instructions for automated bill payments etc. all over again.
- If you have fixed deposits, the name of your bank might change but there’s no need to worry about interest rate changing. “Fixed deposits are contracts, and it is not possible for banks to change the rate midway.



- If you are locked into a fixed deposit, you can continue till maturity on the same interest rate even if the deposit rates of the merged entity are higher or lower,” However, the rate of interest you receive on your savings bank account might change.
- There might also be branch closures. Dena Bank is already in the process of selling the properties housing its branches. The merged entity will only retain one of the head offices of the three banks, doing away with all regional offices and transferring the employees.
- A more immediate impact of the proposed merger is the inconvenience caused to customers owing to bank employees going on strike.
- Bank unions have called for a nationwide strike on 26 December to protest the merger, because it will result in employees being transferred or made redundant.

### **For borrowers**

- If you have taken a loan from a bank that is on its way to a merger, you don't need to worry about your interest rates shooting up. Like fixed deposits, loans qualify as contracts, so your interest rate will remain unchanged. “In case of MCLR-based loans, the interest would be reset at the end of the reset period selected by the borrower.
- If the loan is on base rate, the customers will get the option of switching to MCLR after the merger. Otherwise they will be reset to the base rate decided upon by the merged entity,” Your loan will simply be transferred to the merged entity and you will continue to pay EMIs as usual.
- However, at the end of the fixed rate tenure, your interest rate might be hiked, according to the rates fixed by the merged entity. In such a scenario, you could consider transferring your loan to a different lender. But keep in mind that doing so comes with its own expenses.
- For instance, if you want to port your home loan, the new lender might charge valuation fees, processing fees, etc. So, do your calculations beforehand, and if the refinanced loan counterbalances the extra charges, make the switch.

### **For shareholders**

- While technically shareholders don't have to worry much when it comes to a merger, they also might not have much of a say. Although mergers need clearance from shareholders, in the case of the SBI merger, for instance, minority shareholders were unable to object, even if they wished to. To object, one needed to own at least 1% of the share capital in one of the banks or have the support of 100 shareholders. Needless to say, there were no objections.
- But shareholders don't stand to lose much if the merger does happen. “Technically there should be no impact on the share value. However, there can be a brief or extended period of loss in valuation”.
- Indeed, following the announcement on 10 September, shares of Bank

of Baroda plunged 13%. However, those of Dena Bank jumped 20% and Vijaya Bank gained 6%. “Experience suggests that smaller entities generally get a better value out of merger”.

- The transition process itself should be fairly smooth for shareholders.
- “The Indian equity markets have evolved tremendously and protect retail investors in multiple ways. Whenever such corporate actions take place, the onus of fulfilling all the regulatory and legal requirements along with issuance or adjustment of shares lie with the company
- While it can be a confusing process, if handled well by the entities involved, a bank merger should not be too difficult for customers to navigate. Be prepared for small changes and trust your bank to communicate them to you when the time comes.

## **14. Will Goods and Services Tax help in the doubling of farm income?**

### **Context:**

With the introduction of Goods and Services Tax (GST) — India’s biggest reform in the tax structure — the government has succeeded in moving a step closer towards making the country a unified common market, leading the nation’s economy towards growth and sustainability.

### **Largest contributing sector to GDP:**

- The agricultural sector continues to remain the largest contributing sector to the GDP with a share of 16%.
- The onset of GST in the sector is encouraging industry players/stakeholders to go beyond the boundaries of cities and States and create one-of-a-kind national market for agricultural goods with a clear and hassle-free supply chain which would lead to the free movement of agri-commodities across India.
- Further, the promotion of the National Agriculture Market (NAM) by the Centre in accordance with the GST has created scope for increased transparency and impartial trade of agri-commodities without the restrictions of multiple taxation.

### **Agricultural produce**

- Considering the perishable nature of the agri-commodities, improved supply chain mechanism due to GST would re-write the scope of profitability for farmers.
- With the exemption on GST on storage and warehousing of agricultural produce, the new tax regime has reduced the tax burden on the farming sector and created an opportunity for farmers to sell the produce at the best available price in the Indian market without State barriers and reduce the imminent storage-related food loss, that goes a long

way in helping realize the government's vision to double farmer incomes.

## **Doubling tax burden**

- However, the application of GST to agri-commodities will have a significant impact on the population that lives under the subsistence level.
- While food, including grains and cereals, meat, fish and poultry, milk and dairy products, fruits and vegetables, candy and confectionery, snacks and restaurant meals currently come under the purview of GST, the earlier exemption of food from CENVAT and the 4% VAT on food items highlight the doubling of tax burden on the food sector due to GST.
- While large corporate in the agri-processing sector have begun to adapt to the new regime, the grassroots players are still adversely impacted. While most agri-warehousing companies rent warehouses from small owners of the property, a majority of such owners remain unregistered suppliers.
- However, such renting of warehouses by agencies engaged in providing storage and warehousing services is liable to GST under a reverse charge at the rate of 18%.
- Since the majority of warehouses managed by private companies are leased ones, the above situation implies an 18% increase in the cost of warehousing and defeats the very purpose of GST exemption for storage of agricultural produce.
- The tax burden will inevitably be passed on to farmers in the form of higher price for storing goods in the absence of any viable alternative for warehouse agencies, thereby increasing the cost of the food produce.
- The GST rates on food consumed by the common man should be subject to the lowest rates to ensure that there is reduced impact of inflation on the household budget of the common man.
- Another challenge lies ahead for companies engaged in the creation of modern agriculture storage infrastructure like silos and cold storages.
- Earlier, imports of project equipment used to create facilities to store agriculture commodities — like mechanised handling systems and pallet racking systems — attracted only a basic customs duty of 5% and were specifically exempt from countervailing duty and special additional duty.

## **Exemption denied**

- The same exemption has not been extended under GST. These imports now attract 18% IGST coupled with the existing 5% basic customs duty, resulting in a spike in the cost of imported machinery.
- This deters the creation of modern agri-infrastructure, thereby defeating the purpose of extending exemption to storage of agricultural produce.

Unless corrective measures are immediately enforced to address these issues, farmers will see a rise in storage costs and the burden on the supply chain will eventually increase, thereby affecting consumers.

## 15. Why expanding India's direct tax net is relevant

### **Context:**

Most citizens pay direct taxes in successful democracies, but not so in India—partly because of high levels of poverty but also because of rampant tax evasion. In this context, some recent trends on direct taxes are worthy of notice.

### **Recent trends in direct taxes:**

- The number of people filing income tax returns in the current assessment year is already at around 60 million, or 50% higher than the previous year. Central Board of Direct Taxes chairman Sushil Chandra believes this is the dividend from demonetization
- India has around 250 million families, more than half of whom will anyway be outside the tax net either because they are farmers or they are too poor to pay taxes. That leaves around 125 million families that can potentially pay income tax.
- However, it is important to remember that a tax filing is not the same as a tax payment, and many Indians who file returns do not actually report any tax liabilities.

### **Status of Tax collection regime in India:**

- One of the ironic economic facts today is that most of the poorest people in the world live in countries such as India that are classified as middle income countries based on average incomes.
- These countries are unlikely to get enough foreign aid but they do not have the deep fiscal resources to help their poor either directly through redistribution or indirectly through the provision of public goods that will raise their ability to earn extra income.
- Countries such as India are thus trapped between the very poor countries that get a lot of foreign aid and the wealthy ones with very strong tax collections.
- The Indian state has historically battled immense fiscal constraints. The economic historian Tirthankar Roy has showed that even in the colonial era, the tax collected for every unit of economic output in India was minuscule compared to not only colonists such as Great Britain or an Asian success story such as Japan but even colonized countries such as Malaysia or Sri Lanka.
- The government of what was then the Federated Malay States spent on average more than 10 times the money spent in British India per head between 1920 and 1930.

## **Cons of Increased Direct Tax collection:**

There are three important consequences of getting more people into the direct tax net.

1. The overall boost to tax collections means that the Indian state will be in a better position to perform its key duties without running into repeated fiscal crises.
2. Higher direct taxes could provide space for significant cuts in indirect taxes such as the goods and services tax, which in effect means a shift from a regressive to a progressive tax system.
3. A widening tax pool because of formalization means the current perverse system in which efficient firms are taxed at a high rate because inefficient firms manage to slip outside the tax system will end.

## **Way forward:**

The recent trends in direct taxes offer hope but are too preliminary to jump to any conclusion. What is not debatable is the profound effects—both economic and political—they can have in case reality matches expectations

## Geography and Environment

### 16. The Great Indian Bustard

#### Status:

- Listed in Schedule I of the Indian Wildlife (Protection) Act, 1972, in the CMS Convention and in Appendix I of CITES, as Critically Endangered on the IUCN Red List and the National Wildlife Action Plan (2002-2016).
- It has also been identified as one of the species for the recovery programme under the Integrated Development of Wildlife Habitats of the Ministry of Environment and Forests, Government of India

**“Great Indian Bustard is one of the largest flying birds found in the world”**

#### Characteristics:

- The great Indian bustard can easily be distinguished by its black crown on the forehead contrasting with the pale neck and head.
- The body is brownish and the wings are marked with black, brown and grey.
- Males and females generally grow to the same height and weight but males have larger black crowns and a black band across the breast.
- They breed mostly during the monsoon season when females lay a single egg on open ground. Males have a gular pouch, which helps produce a resonant booming mating call to attract females and can be heard up to a distance of 500 metres.
- Males play no role in the incubation and care of the young, which remain with the mother till



the next breeding season. These birds are opportunist eaters. Their diet ranges widely depending on the seasonal availability of food.

- They feed on grass seeds; insects like grasshoppers and beetles, and sometimes even small rodents and reptiles.

#### Habitat and Distribution:

- Historically, the great Indian bustard was distributed throughout Western India, spanning 11 states, as well as parts of Pakistan. Its

stronghold was once the Thar Desert in the north-west and the Deccan plateau of the peninsula. Today, its population is confined mostly to Rajasthan and Gujarat.

- Small population occurs in Maharashtra, Karnataka and Andhra Pradesh. Bustards generally favour flat open landscapes with minimal visual obstruction and disturbance, therefore adapt well in grasslands. In the non-breeding season they frequent wide agro-grass scrub landscapes.
- While in the breeding season (summers and monsoons) they congregate in traditional undisturbed grassland patches characterized by a mosaic of scantily grazed tall grass (below 50 cm). They avoid grasses taller than themselves and dense scrub like thickets.

### **Conservation Issues:**

- The biggest threat to this species is hunting, which is still prevalent in Pakistan. This is followed by occasional poaching outside Protected Areas, collisions with high tension electric wires, fast moving vehicles and free-ranging dogs in villages.
- Other threats include habitat loss and alteration as a result of widespread agricultural expansion and mechanized farming, infrastructural development such as irrigation, roads, electric poles, as well as mining and industrialization.

### **WWF-India's Initiatives**

- WWF-India has provided inputs in developing the 'Guidelines for the State Action Plan for Resident Bustard Recovery Programme'.
- It has played an important role in raising awareness about the declining populations and highlighting the importance of implementing a focused bustard conservation programme at the national level.
- WWF-India, is undertaking initiatives towards conservation of GIB in and around Desert National Park. In near future, WWF also plans to expand the work in Gujarat and is making efforts to raise funds towards this.

## **17. Captive jumbos in Kerala get genetic IDs**

### **Context:**

For the first time in India every Kerala captive elephants has a unique DNA-based genetic ID.

### **Captive elephants:**

Captive elephants are those that have been captured from the wild and used by humans.

### **Important facts:**

- M. Radhakrishna Pillai, Director of Rajiv Gandhi Centre for Biotechnology (RGCB) was given the task of DNA fingerprinting the



elephants which handed over the DNA database, prototypes of Unique Identification Cards, and a study report to the Forest Department.

- The Forest Department provided blood samples of captive elephants from across the State to the RGCB for DNA fingerprinting.
- The method is a forensic technique that makes it possible to identify individuals — people or animals — based on unique DNA characteristics called micro-satellites (DNA

portions that occur repeatedly), much like fingerprints.

### **DNA fingerprinting:**

- DNA profiling (also called DNA fingerprinting) is the process of determining an individual's DNA characteristics, which are as unique as fingerprints.
- DNA analysis intended to identify a species, rather than an individual, is called DNA bar-coding.
- DNA profiling is a forensic technique in criminal investigations, comparing criminal suspects' profiles to DNA evidence so as to assess the likelihood of their involvement in the crime.
- It is also used in parentage testing, to establish immigration eligibility, and in genealogical and medical research.
- DNA profiling has also been used in the study of animal and plant populations in the fields of zoology, botany, and agriculture.

### **How DNA finger profiling was done to elephants?**

- The RGCB's teams at the Regional Facility for DNA Fingerprinting (RFDF) in Thiruvananthapuram first removed duplicate samples after cross-verification and then isolated DNA from the samples.
- After tests, 11 micro-satellite markers (which help isolate specific micro-satellites) and one sex marker (for gender ID) were selected.
- The database covers all 519 captive elephants. This database is now accessible to the Forest Department.
- The RGCB also developed a protocol to DNA fingerprint elephants using dung and tusk samples.

## Conclusions:

The RGCB also developed a protocol to DNA fingerprint elephants using dung and tusk samples, which could help solve wildlife crimes, including poaching and illegal trade. Unlike the microchip-based ID used so far, DNA fingerprinting provides a unique identity and is more fool-proof.

## 18. Anthropocene period

### Context:

The Earth's surface temperatures varied significantly during the course of a year, the weather for most of the time that mankind has been around has been quite pleasant.

### Result of Earth's orbit around the sun:

The Earth's orbit around the sun has, for the last 12,000 years, been more circular than it has been at anytime in the past 400,000 years. As a result, even though it has, for most of its history, been a planet whose surface temperatures varied significantly during the course of a year, the weather for most of the time that mankind has been around has been quite pleasant.

It is due to this period of planetary warmth, a time anthropologists call the Holocene, that Homo sapiens were able to develop into a truly planetary species.

### Weather patterns:

- Due to the stability of the weather patterns, we were able to invent agriculture.
- This is why nearly all the great civilizations of the past—Indus Valley, Ancient Egypt and the Mayans—came into being
- Roughly at the same time, we have managed to evolve from hunter-gatherer tribes to agrarian societies and, finally, into the highly evolved planetary species

### Greenland ice core data:

- Data indicates that over the past 125,000 years, there have been just two interglacial periods when the planet warmed to current levels.
- Never before has a period of temperate warmth lasted for more than 10,000 years.
- This current interglacial has already gone on for 12,000 years and shows no signs of cooling down.
- Due to its unusual orbit, temperate conditions are expected to continue for at least another 50,000 years.
- It seems that humankind has, serendipitously, been born onto the one planet in the solar system that is at the exactly right distance from the sun, at the one time in history when its orbit has stabilised enough to make it capable of supporting a life form as fragile as ourselves.

## **Anthropocene:**

- The Anthropocene is a proposed epoch dating from the commencement of significant human impact on the Earth's geology and ecosystems, including, but not limited to, anthropogenic climate change.
- The most recent period of the Anthropocene has been referred to by several authors as the Great Acceleration during which the socioeconomic and earth system trends are increasing dramatically, especially after the Second World War. For instance, the Geological Society termed the year 1945 as The Great Acceleration.

## **COP24:**

COP24—the Paris Climate Accord—agreed to adopt uniform standards in measuring emissions and to prepare concrete national plans to cut down on emissions before the next round of talks in 2020.

## **Conclusions:**

- The current US administration seems to have every intention to pull out of the Paris Accord; also present for the negotiations in Poland was a second delegation from the US.
- A coalition comprising governors of 10 states, mayors from cities across the US, leaders of large corporations and heads of cultural institutions.
- This second group was there to reaffirm their personal commitment to sustainability despite the current stance of the US government.

If push comes to shove, the commitments made by each of the individual members of this coalition could well be all that is needed to drive the trajectory of US emissions close to its target. It is commitments like these that will get us back on track. As much as nations can do, it is not until organizations and individuals pledge their support that we will make a change.

## **19. Climate talks deliver ‘rule book’**

### **Context:**

196 countries at COP24, Katowice have agreed on rulebook to implement the 2015 Paris Agreement.

### **Paris Rulebook:**

- The Paris Agreement’s “rule book” establishes the rules and processes needed to provide the operational guidance for fulfilling the ambition of the Paris Agreement. It includes details on several fronts:
- How the emissions from every country should be measured and verified the manner in which financial flows should be accounted
- The information that every country needs to provide regarding their climate actions
- The mechanisms for diffusion of appropriate technologies to developing countries

- How collective efforts will be reviewed, leading to scaled-up actions and support every five years

### **Criticisms of Paris Rulebook**

- According to critics, the Paris Rulebook falls short of the radical action to address climate change and does not include firm commitments by countries to reduce carbon emissions despite the recent report of U.N. Intergovernmental Panel on Climate Change (IPCC)
- Critics have opined that the rulebook has adopted primarily a mitigation-centric approach and the urgent adaptation needs of the developing countries have not prioritized
- Egypt, Africa group and the association of small island states have alleged the principle of common but differentiated responsibilities has been compromised in the rulebook
- The key question of how countries will step up their targets on cutting emissions also remains unaddressed
- According to Centre for Science and Environment (CSE), Delhi the rulebook does not include provisions for assess the reporting of financial grants or review whether it is adequate
- A key element of the rulebook was supposed to be the governance framework for a new carbon market that is sought to be created under the Paris Agreement. However, consensus on carbon credit market could not be reached.
- Critics have raised doubts about effective implementation of the rulebook. This is because the UNFCCC has become primarily a platform to collect and synthesize information and a forum to discuss and debate but lacks tools to drive global collective action against climate change

### **India's stance:**

- India has welcomed the Paris Rulebook and stated that it addresses the concerns of all stakeholders and provides roadmap for effective implementation of the Paris Agreement.
- However, India also opined that provisions of global stock take did not adequately reflect the principles of equity and differentiated responsibilities.

### **IPCC report:**

- The Intergovernmental Panel on Climate Change (IPCC) has released a special report on the actions the world needs to take to prevent global average temperatures from rising beyond 1.5°C as compared to pre-industrial times.
- The 'Special Report on Global Warming of 1.5°C,' compares the impact of global warming of 1.5 degree C and 2 degree C. It provides details on how the global response to climate change needs to be strengthened

within the broader context of sustainable development and continuing efforts to eradicate poverty.

### Way Forward:

Climate negotiations should be viewed as environmental negotiations and not economic negotiation. To address climate change, all the countries need to cooperate and work together to reduce emissions

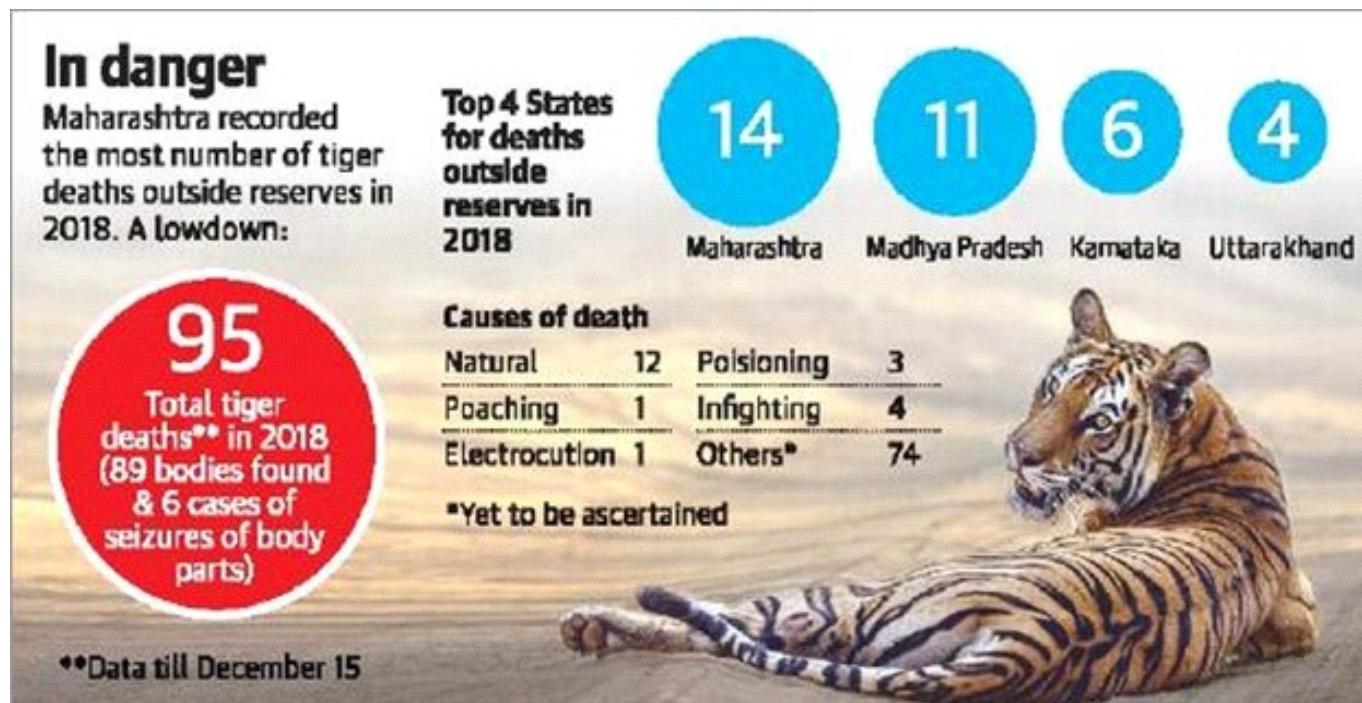
## 20. India recorded 95 tiger deaths in 2018, 41 outside reserves

### Context:

According to the National Tiger Conservation Authority's (NTCA) records till December 15, 2018, there were 95 cases of tiger deaths in India

### Major issue of contention:

- The NTCA maintains the official database of tiger mortality in the country, and compiles figures from reports sent by different States on the basis of recovery of bodies or seizure of body parts.
- Three States comprise 60% of tiger deaths. Maharashtra ranks first in number of tiger deaths, followed by Madhya Pradesh and Karnataka
- Out of 95, 41 cases of tiger deaths outside tiger reserves have been reported.
- Of them, 14 occurred in Maharashtra, which accounted for over 34% of all deaths outside tiger reserves in the country. A total of 19 tiger deaths were recorded in Maharashtra in 2018, so deaths outside tiger reserves comprise more than 70% of all tiger deaths in the State.
- A major reason for increasing tiger deaths in states like Maharashtra is because tigers have been venturing and living outside protected areas. This has raised probability of human-animal conflicts which often result in killing of tigers



## **National Tiger Conservation Authority's (NTCA):**

- The National Tiger Conservation Authority (NTCA) is a statutory body of the MoEFCC established in 2005 following a recommendation of the Tiger Task Force.
- It is mandated with supervisory role, performing functions as provided in the Wildlife (Protection) Act, 1972 and managing the tiger reserves
- The Authority will have eight experts or professionals having qualifications and experience in wildlife conservation and welfare of people including tribes, apart from three Members of Parliament of whom two will be elected by the House of the People and one by the Council of States.
- The Inspector General of Forests, in charge of project Tiger, will be ex-officio Member Secretary.

## **Objective of the NTCA:**

- Providing statutory authority to Project Tiger so that compliance of its directives becomes legal.
- Fostering accountability of Center-State in management of Tiger Reserves, by providing a basis for MoU with States within our federal structure.
- Providing for an oversight by Parliament.
- Addressing livelihood interests of local people in areas surrounding Tiger Reserves.

## **21. Artificial islands**

### **Context:**

The Dutch engineers created the archipelago of five islets build artificial islands to bring wildlife back. It has already attracted greylag goose, common tern, and several species of waders.

### **Artificial Island:**

An artificial island is an island constructed by man rather than created by natural means. They are constructed by expanding the existing islets and by construction on existing reefs or merging some natural islets into a bigger island. Artificial islands are usually constructed by land reclamation. Land reclamation is a process where new land is created from oceans, river beds and lake beds. The land which is reclaimed is called reclamation ground.

### **Construction of an artificial Island**

The construction process may slightly differ for all the islands depending upon the area in which they are created. It generally consists of 3 main stages:

1. Remediation of seabed

2. Placement of seawall

3. Fill

- **Remediation of seabed:** consists of reforming the seabed in case of any problem like settlement. As mentioned earlier, the process is different for different islands. For example, in the artificial island construction of the Kansai international airport in Osaka Japan, it was impossible to stop the settlement of the Holocene clay layer found in the seabed. However, the bad effects of the settlement were minimized by artificially speeding up the process by the sand drain method.



- **Placement of seawall:** It is a process where a seawall is constructed to protect the perimeter of the reclaimed area. The Seawall is a structure which reflects the incident wave energy back into the sea which helps in reducing the energy available to cause erosion.
- **Fill:** It is a material with which the body of the island is comprised. It normally consists of sand, gravel and rock.

### Why in news?

- The Markermeer, one of Europe's largest freshwater lakes, this vast 700-square-km expanse of water regulates the level of water in the rest of the Netherlands, had become until recently nothing more than a cloudy mass devoid of aquatic life.
- The hope is that a new artificial archipelago of five islands will bring nature back to the area via a typically ambitious engineering project for a low-lying country that has battled the sea for centuries.
- It is “one of the largest rewilding operations in Europe”.

### Background of Markermeer Lake:

- The lake was once part of the Zuiderzee, an engineering wonder of the world completed in 1932, which closed off a huge expanse of water to keep out the North Sea and combat flooding.
- Vital in a country where 26% of the land is below sea level, the scheme created an inland lake and polders, land reclaimed from the sea, but at a cost to the environment.

- Over the subsequent decades, sediment used to create a dyke separating the Markermeer from a neighboring body of water, the IJsselmeer, washed away and sunk to the bottom of the lake.
- That turned the water cloudy, negatively impacting fish and bird populations, plants and mollusks.

### **Outcomes:**

- The five islets were built in two and a half years and have already served as a resting place for 30,000 swallows this year.
- In the water there is an “explosion” of plankton that “guarantees a large amount of food for the birds”.
- Greylag goose, common tern, several species of waders such as the great egret and the night heron have also returned, testifying to the islands’ success.
- In the distance a dredger is helping to create the final dunes of the archipelago.

The project, initiated by Natuurmonumenten, a Dutch non-governmental organization, cost €60 million (\$68 million) — much of it donated by individuals.

True to their reputation as masters of water management, the Dutch used an innovative technique, forming the islets with silt, a sedimentary formation halfway between clay and sand.

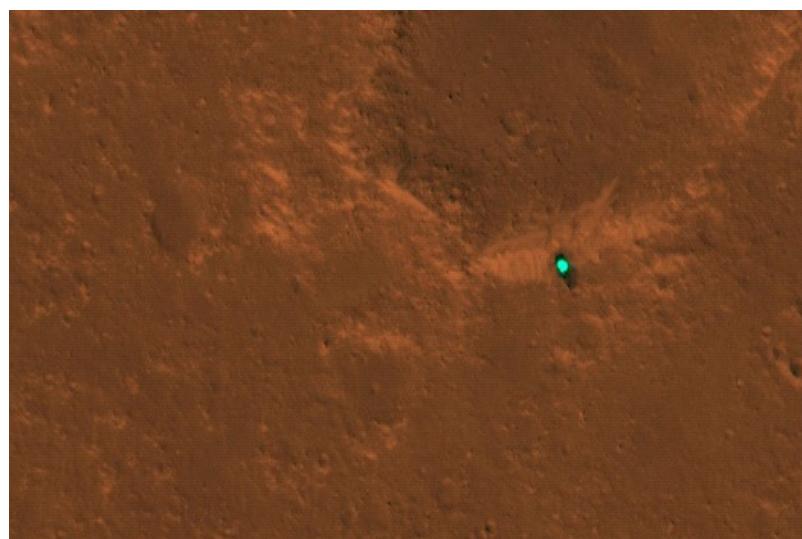
## **22. Mars InSight lander**

### **Context:**

High Resolution Imaging Science Experiment (HiRISE)- A camera aboard Nasa’s Mars Reconnaissance Orbiter (MRO) has captured the image of the InSight lander, which recently touched down on the Red Planet.

### **About InSight**

InSight is based largely on 2008’s Phoenix spacecraft, which the camera aboard MRO captured on the surface of Mars as well as descending on its parachute.



### **High Resolution Imaging Science Experiment (HiRISE):**

- The High Resolution Imaging Science Experiment (HiRISE) will photograph hundreds of targeted swaths of Mars’ surface in unprecedented detail.

- HiRISE operates in visible wavelengths, the same as human eyes, but with a telescopic lens that will produce images at resolutions never before seen in planetary exploration missions.
- HiRISE also makes observations at near-infrared wavelengths to obtain information on the mineral groups present.

These new, high-resolution images will provide unprecedented views of layered materials, gullies, channels, and other science targets, as well as characterize possible future landing sites.

## 23. Olive Ridley Turtles

### **Context:**

Recently, Thousands of olive ridleys, as part of their annual mating season, have assembled near the Rushikulya rookery on the Odisha coast. The forest department has stepped up its patrol in the area to safeguard the turtles.

### **About olive ridleys:**

- Olive Ridley turtle (*Lepidochelys olivacea*) is smallest and most abundant of all sea turtle found in world.



- Habitat — warm and tropical waters of primarily in the Pacific, Indian Ocean and Atlantic ocean.
- Gets name from its olive colored carapace, which is heart-shaped and rounded.
- They are mostly carnivorous, feeding on such creatures as jellyfish, snails, crabs, and shrimp. They will occasionally eat algae and seaweed

- Olive Ridley Turtles are best known for their behavior of synchronized nesting in mass numbers called ‘Arribada’
- **Arribadas** — synchronized nesting in mass numbers.

**Nesting period:** From October to early summer

In the Indian Ocean, the majority of olive ridleys nest in two or three large groups near Gahirmatha in Odisha. The coast of Odisha in India is the largest mass nesting site for the olive ridley, followed by the coasts of Mexico and Costa Rica. The sandy stretches of Hope Island of Coringa Wildlife Sanctuary also have turned into a breeding area.

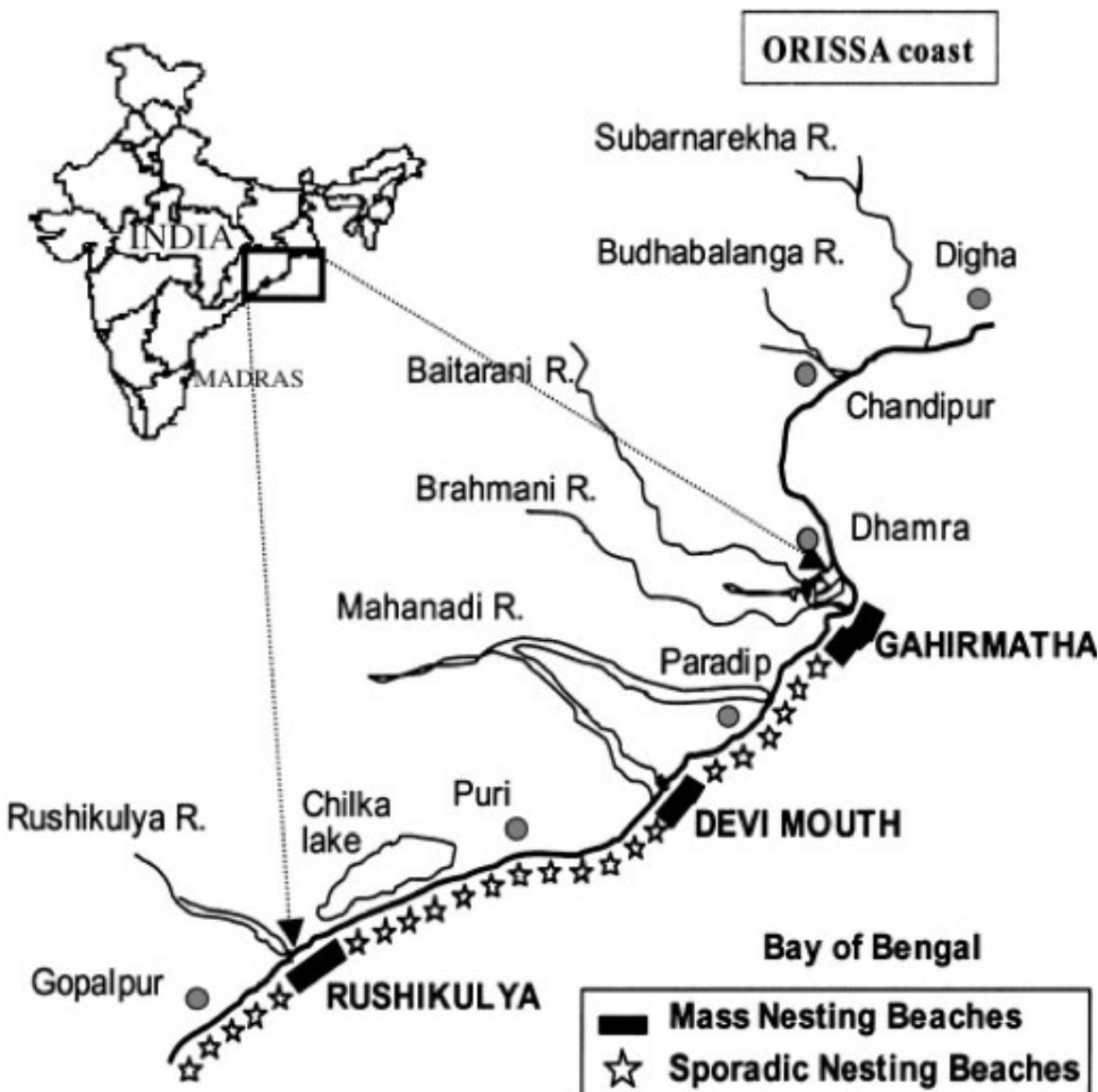
A single female Olive Ridley can lay upto 100 to 150 eggs in a pit dug on beaches. Six weeks later these eggs hatches and newly hatched turtles start journey to their Indian ocean habitat.

### Threats:

- Poaching for their meat, shell and leather, and their eggs
- Pet trading
- Accidental killing of adult turtles through entanglement in trawl nets and gill nets due to uncontrolled fishing during their mating season around nesting beaches
- Development and exploitation of nesting beaches for ports, and tourist centres
- Predators like feral dogs and pigs, ghost crabs, snakes etc
- Light pollution
- Ingestion of marine debris that causes perforation of the digestive system and exposure to chemicals and hence death.

### Nesting sites in India:

- Hope Island of Coringa Wildlife Sanctuary (Andra Pradesh)



- Gahirmatha beach (Odisha)
- Astaranga coast(Odisha)
- Beach of Rushikulya River
- Devi River mouth

**Conservation status:** Vulnerable according to the (IUCN) and is listed in Appendix I of CITES.

Protection under The Convention on Migratory Species (CMS) and the Inter-American Convention for the Protection and Conservation of Sea Turtles.

**SEE TURTLES:** It is a non-profit organization that protects sea turtles through conservation travel and volunteer tours, educational programs, and Billion Baby Turtles.

## 24. Cyclonic storm Phethai and How Cyclones get their names

Cyclonic Storm Phethai is the sixth named cyclone of 2018 North Indian Ocean Cyclone season. The previous five named cyclones are Sagar, Mekunu, Luban, Titli and Gaza.

- Phethai is the 77<sup>th</sup> Cyclone crossing Andhra Pradesh coast in the 127 year old history of the IMD. Phethai, the name of the cyclone is suggested by Thailand. It is pronounced as ‘Pay-ti’, which means vegetarian began in Thailand.
- Cyclones are named by various warning centres to provide ease of communication between forecasters and the general public. The names are intended to reduce confusion in the event of concurrent storms in the same basin.
- Generally once storms produce sustained wind speeds of more than 61 km/h names are assigned in order from predetermined lists depending on which basin they originate.

In South East Asia, cyclones are named by different countries. Titli was named by Pakistan and Gaja by Sri Lanka.

### How are cyclones named?

- During World War II, tropical cyclones were informally given women's names by US Army Air Corp and Navy meteorologists (after their girlfriends or wives) who were monitoring and forecasting tropical cyclones over the Pacific.
- From 1950 to 1952, tropical cyclones of the North Atlantic Ocean were identified by the phonetic alphabet (Able-Baker-Charlie-etc.), but in 1953 the US Weather Bureau switched to women's names.
- In 1979, the World Meteorological Organization and the US National Weather Service (NWS) switched to a list of names that also included men's names.

- The Northeast Pacific basin tropical cyclones were named using women's names starting in 1959 for storms near Hawaii and in 1960 for the remainder of the Northeast Pacific basin. In 1978, both men's and women's names were utilised.
- The Northwest Pacific basin tropical cyclones were given women's names officially starting in 1945 and men's names were also included beginning in 1979.
- The Southwest Indian Ocean tropical cyclones were first named during the 1960/1961 season.
- The Australian and South Pacific region (east of 90E, south of the equator) started giving women's names to the storms in 1964 and both men's and women's names in 1974/1975.
- The North Indian Ocean region tropical cyclones are being named since October 2004.

### **Names reused every six years**

- Atlantic and Pacific storm names are reused every six years, but are retired "if a storm is so deadly or costly that the future use of the name would be insensitive or confusing", according to forecasters at the US National Hurricane Center in Miami.
- Hurricane Sandy was the 77th name to be retired from the Atlantic list since 1954. It will be replaced with "Sara" beginning in 2018, when the list from 2012 is repeated. Hurricane Sandy was the deadliest and most destructive hurricane of the 2012 Atlantic hurricane season that hit the US last year.

### **Cyclone season**

India's cyclone season runs from April to December, with severe storms often causing dozens of deaths, evacuations of tens of thousands of people from low-lying villages and wide damage to crops and property.

## Science and Technology

### 25. Mental illness: Act before it's too late

#### **What is depression and clinical depression?**

1. Depression is a mood disorder. It is commonly defined as a state of mind when people experience grief, loss of interest in activities they once enjoyed, an all-pervading sense of futility and incompetence, and even suicidal thoughts.
2. Clinical depression is a medical condition which lasts for at least two weeks with certain symptoms, and in most cases can last for months or even years.
3. According to WHO guidelines, common symptoms of depression in professionals include difficulty in concentrating, making decisions, a visible change in performance, inconsistent productivity, increasing errors and diminished work quality, and overly sensitive reactions

#### **Status of Depression among private sector professionals in India**

1. A study conducted by Assocham, 42.5% of employees in the Indian private sector are afflicted with general anxiety disorder or depression, as compared to government employees
2. Surveys conclude that as much as 50% of India's workforce suffers from some form of stress and of these, and 8% of them show a high tendency to commit suicide.

#### **Causes and Challenges in addressing Depression in Indian Private Sector**

1. A major reason for depression among private sector employees is less pay and more working hours which contribute to an atmosphere of constant fatigue. This further leads to stress and frustration, thereby acutely affecting mental health.
2. Private companies seldom make any attempt to help employers address their mental health problems. Hardly any companies have formulated a policy to address employer's mental health issues
3. Seniors in supervisory roles are ill-equipped to cope with or respond to such scenarios
4. Further, there lies an inherent problem with the work culture in India. Indian workplace is highly competitive with very little or no sensitivity towards the mentally disturbed or those who have issues with performance

#### **Steps to be taken**

1. It is important to have a transparent, open culture which allows proper communication between employees and management
2. It is important to create an infrastructure including facilities for employees to relax, like recreational areas with various activities

3. Organization should formulate programmes for career development of employees
4. Corporate sector should formulate strategies for prevention, early identification, support and rehabilitation for employees with mental health issues

## 26. ISRO's GSAT-7A to add muscle to Air Force

### Context:

Military communication satellite GSAT-7A, due to be launched on December 19 evening from Sriharikota, is expected to add a new space-based dimension to the way Indian Air Force interlinks, operates and communicates with its aircraft.

### GSLV-F11:

The GSLV-F11 is ISRO's fourth generation launch vehicle with three stages. The launch vehicle, which is in its 13th flight, will inject GSAT-7A into a Geosynchronous Transfer Orbit (GTO).

### About GSAT-7A:

GSAT-7A would be placed in the **geostationary orbit** and this communication satellite is expected to help the IAF to interlink different ground radar stations, airbases and AWACS (Airborne Warning and Control System) aircraft. The idea is to improve the IAF's network-centric warfare capabilities.

The GSAT-7A is expected to have the **Ku-band transponders** and two deployable solar arrays onboard.

- The GSAT-7A is also expected to be a big push for drone operations as it will help the Navy reduce the reliance on on-ground control stations and take satellite-control of military unmanned aerial vehicles (UAV) which should help boost the range and endurance of the UAVs.
- In addition to GSAT-7A, the IAF would also be getting the GSAT-7C in a few years, to boost the network-centric operations.
- Although all Indian communication satellites offer capacity to the armed forces, GSAT-7A will be the first one built primarily for the IAF to qualitatively unify its assets and improve combined, common intelligence during operations. With integrated action being a buzzword it will also support aerial activities of the Army and the Navy where required.
- About 70% of it would be for the Air Force and the rest for the needs of the Army. The ground force's Army Aviation Corps operates many helicopters, uses UAVs and will acquire fixed wing aircraft in future — all for surveillance and rescue missions.
- Multiple sources said the satellite using Ku band will enable superior real time aircraft-to-aircraft communication; and between planes that are in flight and their commanders on the ground.

- It would enhance by many times the coverage now provided by ground communication systems such as radars and stations of the Army.
- Out-of-sight and remote areas where ground infrastructure and signals are difficult would get into the critical information loop.

### **Background- GSAT 7 series:**

- The GSAT 7 series was launched in 2013 as a dedicated communications satellite for the Indian Navy, which made the Navy completely independent of relying on foreign satellites for its blue water capabilities, thanks to GSAT 7 having a 2,000 nautical mile footprint.
- This helps in providing real-time inputs to Indian warships, submarines and maritime aircraft.

## **27. Indigenous Advanced Towed Artillery Gun System (ATAGS)**

### **Important Facts:**

- Indigenously-designed heavy artillery gun, the Advanced Towed Artillery Gun System (ATAGS), enters trial stage.
- The ATAGS is a 155mm, 52 calibre gun being developed by the Defence Research and Development Organisation on two parallel tracks: one prototype in partnership with Tata Power, and the other with Bharat Forge.

### **Firing on all cylinders**



▪ Advanced Towed Artillery Gun System (ATAGS) is a 155mm, 52 calibre gun, developed by Defence Research and Development Organisation (DRDO) in a consortium model

▪ One prototype has been built in partnership with Tata Power (Strategic Engineering Division) and another with Bharat Forge

▪ Two guns from each company

are undergoing trials; two more guns to join trials later

▪ There is a sanction for production of 10 guns as part of the development process

▪ The gun currently weighs about 18 tonnes while the ideal weight is 14-15 tonnes

▪ The defence Ministry has approved purchase of 150 guns at an approximate cost of ₹3,365 crore

▪ The Army is in the process of finalising the Preliminary Specifications Qualitative Requirements (PSQR) which details the essential parameters, which should be ready by July 2019

▪ The gun is presently undergoing development trials. User assisted trials will begin from May-June 2019

#### **KEY FEATURES**

- Electric drive
- High mobility
- Quick deployability
- Auxiliary power mode
- Advanced communication system
- Automated command control system
- Six round magazine instead of a standard three round magazine

- There is a sanction for production of 10 guns as part of the development process

## **28. Why Isro's Gsat-7A launch is important for the Indian Air Force**

### **What is the need to launch a dedicated satellite for IAF?**

Once GSLV-F11 (GSLV Mk II) rocket launches Gsat-7A satellite+ from the second launchpad at Sriharikota at 4.10 pm on Wednesday in the geo orbit, the communication satellite will enable the Indian Air Force (IAF) to

As Isro launches Gsat-7A today, U Tejonmayam and Surendra Singh tell you how it will make Indian Air Force more formidable

# A Satellite To Aid Air Power



**2** Satellite receives and amplifies signal from jet and changes the frequency



## Gsat-7A

Weight | 2,250 kg

Payload | Ku-band transponders

Mission life | 8 years

Cost | Rs 500–800 crore

**4** The same can be picked up by antennas on ground



**3** Satellite then transmits the signal to the receiver antenna in another aircraft where signals are converted into sound



Graphic: Franklin S

**1** To help fighter jets communicate, Gsat-7A relies on sound converted into signal, which the jet then transmits to the satellite

## WHAT IT DOES

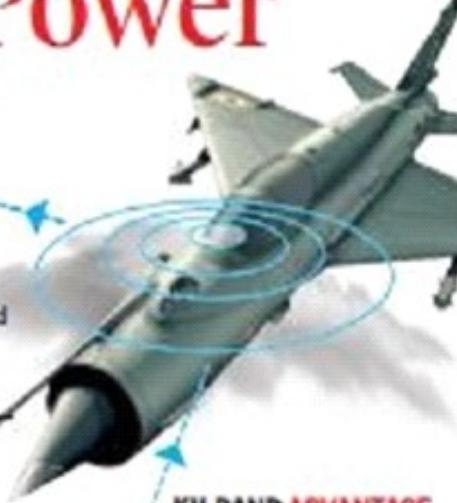
- Interlinks ground-based radars, airbase and airborne early warning and control (AWACS) aircraft; detecting aircraft, vessels, etc. in long range
- Enables real time air-to-air communication between planes in air and with the ground
- Helps drones conduct surveillance by capturing videos and images of a location and transmit them to ground stations
- Helps satellite-controlled unmanned aerial vehicles (UAVs), or drones, improve their range and endurance to strike at enemy targets from long distances

## SHOT IN THE ARM

- It boosts coverage by other satellites and ground systems like radars and stations in Indian Ocean Region

- Links the air force's assets and enhances network-centric warfare capability

- The Gsat-7A launch comes at a time when India is in the process of acquiring American Predator-B or Sea Guardian drones, which are high-altitude and long-endurance satellite-controlled UAVs that can fire at enemy targets from afar

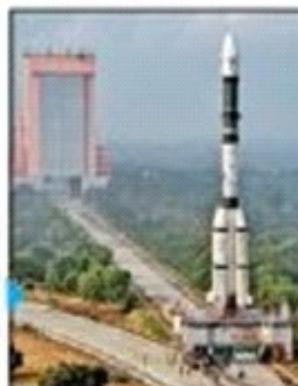


## KU-BAND ADVANTAGE

- Signals can be captured with smaller antenna
- Provides wide beam coverage compared to other bands
- Less vulnerable to rain and other atmospheric disturbances

## WHAT WE HAVE NOW

- India has 13 satellites with military applications
- Gsat-7 launched in 2013 for Indian Navy monitors 2,000 nautical miles of Indian Ocean Region and sends real time inputs to warships, submarines, aircraft



## THE ROCKET

GSLV-F11 will lift off at 4.10 pm on Wednesday. It will be the 13th flight of GSLV-Mk II, the seventh using an indigenous cryogenic engine

interlink different ground radar stations, airbases and AWACS aircraft. It will boost the air force's network-centric warfare capabilities and enhance its global operations.

## Why is Gsat-7A important for IAF?

Gsat-7A will not only interlink all airbases, but it will also boost drone

operations as it will help the force upgrade from existing ground control stations to satellite-control of military unmanned aerial vehicles (UAVs). The transition will boost the range, endurance and flexibility of UAVs. This comes at a time when India is in the process of acquiring American armed Predator-B or Sea Guardian drones, which are high-altitude and long endurance satellite-controlled UAVs that can fire at enemy targets from long distances.

### **What are the features of Gsat-7A?**

Costing around Rs 500-800 crore, the communication satellite is configured on the standard 1-2K Bus with bi-propellant chemical propulsion system for orbit rasing and in-orbit maintenance. Its four solar panels are capable of generating around 3.3 kilowatts of electrical power.

### **How many dedicated communication satellites Isro has launched for the military?**

Before the scheduled launch of Gsat-7A, Isro had launched Gsat-7, also called 'Rukmini', on September 29, 2013 exclusively for the Navy. 'Rukmini' has helped the Navy monitor the Indian Ocean Region (IOR) as the satellite has a nearly 2,000 nautical mile 'footprint' and provides real-time inputs to Indian warships, submarines and maritime aircraft. The IAF is also likely to get another satellite Gsat-7C, within a few years that will boost its network-centric operations.

### **What are the space assets of our Indian military?**

India currently possesses around 13 military satellites. Most of these remote-sensing satellites like Cartosat-series and Risat satellites are placed in the near-earth orbit which help in better scanning of the earth. However, some of these military satellites have also been put in the geo orbit. The forces use these satellites for surveillance, navigation and communication purpose. The remote sensing satellites had also helped the military in the surgical strike against Pakistan to destroy terror launchpads.

### **How many military satellites are there in the world?**

Currently, there are 320 military satellites orbiting the earth, with the US owning half of them, followed by Russia and China. Of late, China, considered to be India's biggest rival, has taken huge strides in developing military assets in space, testing even ASAT (anti-satellite) weapons against "low-earth satellites" in January 2017.

## Miscellaneous

### 29. BORI launched e-library of rare books, manuscripts

#### **Important facts:**

- e-library of rare books launched in Pune.
- The Bhandarkar Oriental Research Institute (BORI), which houses one of South Asia's largest and most invaluable agglomeration of rare manuscripts launched an e-library of ancient religious and historical works.
- Over 3,000 rare and near-extinct books and manuscripts, written in Sanskrit, Prakrit and Pali, will be housed in digital library
- The institute, named after legendary Indologist Ramkrishna Gopal Bhandarkar, was set up in 1917
- The National Mission for Manuscripts has recognised BORI as the Manuscript Resource Centre in the country. So far, as many as 12,000 of the total manuscripts have been scanned and preserved.

### 30. Packaging of foodgrain in jute bags made mandatory

#### **Important facts:**

- The Centre has mandated the packaging of 100% of food grain and 20% of sugar in jute bags for 2018-19.
- The order follows the Jute Packaging Materials (Compulsory Use in Packing Commodities) Act (JPM), which was enacted in 1987 to protect the jute sector from the plastic packaging segment.
- This is the first time since 2012-13 that 100% reservation had been announced for foodgrain. It was 90% last year.
- In case of sugar, the government has stipulated that diversified jute bags be used as traditional bags are not being preferred by the user-sector due to contaminants like jute fibre, batching oil moisture pick-up and sugar spillage.
- West Bengal and Andhra Pradesh are the two largest jute goods producers, Punjab is the largest procuring State.
- Gunny bags now account for about 63% of raw jute consumption.
- Initially there was reservation for sugar, cement, fertiliser and food grain packaging over time but certain sectors have been taken out of the ambit due seepage issue through materials.

### 31. India ranks 108th in WEF gender gap index 2018

#### **Why in news?**

India ranked 108th in World Economic Forum (WEF) Gender Gap Index, same as 2017

## **Important facts:**

- India fell 21 places on the World Economic Forum's Global Gender Gap index to 108 which is far below the global average and much behind its neighbors China and Bangladesh
- In Global Gender Gap Report 2018, India ranks 142nd out of 149 countries in the economic opportunity and participation subindex

## **Finding of World Economic Forum Report**

- In 2016, India's rank was 87. In 2006, when the World Economic Forum started measuring gender gap across the world, India's rank was 10 notches higher than it is in 2017.
- India needs to make improvements across the board, from women's participation to getting more women into senior and professional roles

## **Where India lost out**

- India's greatest challenges were in the economic participation and opportunities for women
- 66% of women's work in India is unpaid, compared to 12% of men's.
- India did not perform too well in the health and survival pillar either, where it is ranked 141 – the fourth-lowest in the world.
- The report said gender gaps in political empowerment, life expectancy and basic literacy also caused India's rank to slip

## **Positive Side**

- India has slightly improved in WEF's wage equality for similar work indicator, where it stood at 72nd place.
- The country has also closed its tertiary education enrolment gap for the first time in 2018 and has managed to keep its primary and secondary gaps closed for the third year running.
- India has the second-largest artificial intelligence (AI) workforce but one of the largest AI gender gaps, with only 22 percent of roles filled by women.
- India fully closed the gap in primary and secondary education enrolment for the second year in a row.

## **Around the world**

- The global gender gap widened this year, for the first time since the World Economic Forum's index started
- At the top of the Global Gender Gap Index is Iceland. The country has closed nearly 88% of its gap. It has been the world's most gender-equal country for nine years

## **Additional Facts:**

### **About The Global Gender Gap**

- Introduced by the World Economic Forum to examine four critical areas

of inequality between men and women:

- Economic participation and opportunity – outcomes on salaries, participation levels and access to high-skilled employment
- **Educational attainment** – outcomes on access to basic and higher level education
- **Political empowerment** – outcomes on representation in decision-making structures
- **Health and survival** – outcomes on life expectancy and sex ratio.
- In addition, this year's edition studies skills gender gaps related to Artificial Intelligence (AI).

### **Gender Inequality Index of UNDP**

- It measures gender inequalities in three important aspects of human development—
- Reproductive health – measured by maternal mortality ratio and adolescent birth rates
- Empowerment – Measured by proportion of parliamentary seats occupied by females and proportion of adult females and males aged 25 years and older with at least some secondary education
- Economic status – expressed as labour market participation and measured by labour force participation rate of female and male populations aged 15 years and older.
- Thus the higher the GII value the more disparities between females and males and the more loss to human development.

## **32. 10 monuments adopted under 'Adopt A Heritage' project**

### **Why in news?**

Ten monuments have been adopted under the central government's '**Adopt A Heritage' project**

### **About Adopt a Heritage: Apni Dharohar, Apni Pehchaan scheme**

- Launched in September, 2017, was a collaborative effort by the Ministry of Tourism, Ministry of Culture and Archaeological Survey of India (ASI), states and Union territories.
- No fund is given by Ministry of Tourism. The Project envisages involvement of Private/Public Companies / Organizations and Individuals to adopt Monuments, Natural Heritage Sites and in the country, primarily under CSR.
- Archaeological Survey of India has identified 100 monuments as 'Adarsh Smarak' for upgradation of existing facilities
- **Site Selection Procedure**
  - The sites/monument are selected on the basis of tourist footfall and visibility and can be adopted by private and public sector companies

- and individuals — known as Monument Mitras for an initial period of five years.
- The Monument Mitras are selected by the ‘oversight and vision committee,’ co-chaired by the Tourism Secretary and the Culture Secretary, on the basis of the bidder’s ‘vision’ for development of all amenities at the heritage site.
- There is no financial bid involved. The corporate sector is expected to use corporate social responsibility (CSR) funds for the upkeep of the site.
- The Monument Mitras, in turn, will get limited visibility on the site premises and on the Incredible India website.
- The oversight committee also has the power to terminate a memorandum of understanding in case of non-compliance or non-performance.
- The Adopt a Heritage is essentially a non-revenue generating project.
- The project primarily focuses on providing basic amenities that include cleanliness, public conveniences, safe drinking water, ease of access for tourists, illumination and Wi-Fi.

### **The priority areas of Programme are listed as under:**

- Developing basic tourism infrastructure.
- Promoting cultural and heritage value of the country to generate livelihoods in the identified regions;
- Enhancing the tourist attractiveness in a sustainable manner by developing world-class infrastructure at the heritage monument sites;
- Creating employment and economic development; through active involvement of local communities;

### **Additional Facts:**

- **About Archaeological Survey of India (ASI)**

- Under the Ministry of Culture, is the premier organization for the archaeological researches and protection of the cultural heritage of the nation
- It also regulates Antiquities and Art Treasure Act, 1972
- Established in 1861 by Alexander Cunningham.
- It regulates all archaeological activities as per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

### **Other Government projects to help maintain tourist sites and monuments**

- **National Cultural Fund:**

- The National Culture Fund (NCF) was created as a Trust in November 2011.
- Under the Ministry of Culture, aims at inviting the participation of the

Corporate Sector, Non-Government agencies, State Governments, Private/Public Sector and individuals in the task of promoting, protecting and preserving India's cultural heritage both tangible and intangible.

- **Campaign Clean India –**

- Under the scheme the government had identified 120 monuments/ destinations.
- The India Tourism Development Corporation had adopted Qutub Minar as a pilot project in 2012, while ONGC adopted six monuments — Ellora Caves, Elephanta Caves, Golkonda Fort, Mamallapuram , Red Fort and Taj Mahal — as part of its CSR.

### **Cultural Policy of India:**

- India has no cultural policy because of the disjointed manner in which the issue is addressed.
- For example, the intangible cultural heritage of acrobatic performance is perceived as a circus art is addressed by the Ministry of Sports.
- While tangible heritage such as monuments come under the Ministry of Culture,
- The very skills, processes and crafts that create the buildings come under the Ministry of Textiles.
- Another anomaly is that while heritage (monochrome as built monuments) is on the state list, tourism does not feature in the state, Union or concurrent list.

## **33. Nur Jahan, the empress who wielded power in the Mughal court and hunted tigers**

### **Context:**

Nur Jahan, the twentieth wife of Mughal emperor Jehangir, was a woman of remarkable strength and courage. She wielded such great power that she often presided the court alongside Jehangir and took part in matters of the state.

### **Early life**

- Born as Mehr-un-Nissa to a Persian noble family on 31 May, 1577 in Kandahar in present-day Afghanistan, Nur was the fourth child of Mirza Ghias Beg and Asmat Begam. Author Indu Sundaresan, in her book *The Twentieth Wife*, describes her as a child with captivating beauty:
- *"Azure blue eyes looked up at Asmat and dimpled smile broke out on her face, showing perfectly even, white teeth with one gap in the front where a permanent tooth was yet to come."*
- Nur mastered Arabic and Persian languages and studied arts, literature, music and dance.

- In 1594, at the age of 17, she married Sher Afghan Khan, a soldier in the Mughal army. The couple's daughter, Ladli Begum, was born in 1605. The tumultuous marriage, said to be arranged by Emperor Akbar himself, ended in 1607 with Sher Afghan's death.

### **Marriage to Jehangir**

- It is said that Jehangir, emperor Akbar's son, fell for Nur Jahan even before her marriage with Sher Afghan Khan ended. According to some accounts, he had a role in Nur's first husband's death, but there is no evidence to confirm these stories. After the death of her husband, Nur and Ladli Begum were summoned to the court in Agra to act as ladies-in-waiting to the dowager empress Ruqaiya Sultan Begum.
- In 1611, Jehangir met Nur Jahan, then 34, in the palace bazaar where he proposed marriage to her. After their wed, Jehangir gave her the title of Nur Jahan, meaning 'light of the world'. While Nur was devoted to Jehangir, he too held great affection for Nur and trusted her with the affairs of the state.

### **An empress who managed court affairs**

- According to historians, Nur Jahan was often seen in the *jharokhas* receiving the audience and issuing orders, sometimes without Jehangir. Due to his addiction to opium and alcohol, Jehangir was often missing from court proceedings, which made it easier for Nur to assert her authority. Such power in the hands of an empress at a time when women were kept under veil was a novelty.
- Nur Jahan was the only Mughal empress who had coins minted with her name on them. An ace marksman, she was also seen hunting tigers with her husband. Known for her shrewd planning and physical strength, Nur Jahan was able to rescue Jehangir from the clutches of rebel leader Mabahat Khan in 1626.
- After Jehangir's death in October 1627, his son from Rajput princess Jagat Gosaini, Prince Shah Jahan, took over the reins and Nur Jahan was forced to live in a mansion in Lahore along with her daughter. During this period, she oversaw the completion of Itmad-ud-daulah, a mausoleum which would later prove to be the inspiration for the Taj Mahal in Agra. Nur Jahan died on 17 December, 1645 at the age of 68.
- While the Taj Mahal is seen as an eternal symbol of love, made by Shah Jahan for his wife Mumtaz Mahal, their love story was, according to historians, tailored by none other than Nur Jahan herself. Mumtaz was Nur Jahan's niece and was married to Shah Jahan when she was 19.

## **34. AI can predict risk of infection after surgery**

### **Context:**

Scientists have developed an artificial intelligence (AI) tool that can successfully predict whether a patient is at risk of developing a serious and

possibly life-threatening infection after surgery.

**Key facts:**

- *Staphylococcus epidermidis* is an ubiquitous coloniser of healthy human skin, but it is also a notorious source of serious infections with indwelling devices and surgical procedures such as hip replacements.
- It has not been known whether all members of the *S epidermidis* population colonizing the skin asymptotically are capable of causing such infections, or if some of them have a heightened tendency to do so when they enter either the bloodstream or a deep tissue.
- Scientists from the Aalto University and the University of Helsinki in Finland combined large-scale population genomics and in vitro measurements of immunologically relevant features of these bacteria.
- They were then able to use machine learning to successfully predict the risk of developing a serious and possibly life-threatening infection from the genomic features of a bacterial isolate.
- The research, published in the journal Nature Communications, opens the door for future technology where high-risk genotypes are identified proactively when a person is to undergo a surgical procedure, which has high potential to reduce the burden of infections caused by *S epidermidis*.

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# OUR RESULTS - 2017

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83



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100



Mourya  
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105



Mishra  
HT No : 262146

144



149



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