Modern History

Guru Nanak Jayanti
Syllabus: GS 1/Personalities

In News
- The 552nd birth anniversary of Guru Nanak was celebrated across India.

About Guru Nanak Jayanti
- It is also known as Gurpurab and is the most important festival for the followers of the religion of Sikhism as the birth anniversary of the first Sikh Guru, Guru Nanak Dev.
- The festival is celebrated on the day of Kartik Poornima, which is the fifteenth lunar day in the month of Kartik according to the Hindu calendar, and usually falls in the month of November by the Gregorian calendar.

Guru Nanak Dev
- Early Life:
  - He was born on April 15, 1469, at Rai Bhoi Ki Talwand, near Lahore, which is in the Sheikhpura district of modern-day Pakistan.
  - He was born into a middle-class Hindu family and raised by his parents, Mehta Kalu and Mata Tripta.
- Founder of Sikhism:
  - He was the first of the 10 Sikh Gurus and the founder of Sikhism in the 15th century.
  - He started writing the Guru Granth Sahib and completed 974 hymns.
His Teachings:
- He advocated the 'Nirguna' (devotion to and worship of formless divine) form of bhakti.
- Advocated the existence of one God and taught to reach out God through meditation and other pious practices.
- He set up rules for congregational worship (Sangat) involving collective recitation.
- His verses also preach selfless service to humanity, prosperity and social justice for all, irrespective of differences.
- Guru Nanak travelled across South Asia and the Middle East to spread his teachings.

Steps in his honour:
- **Nankana Sahib**: A Gurudwara was built at his birthplace in the city now known as Nankana Sahib. It is located in the Punjab province of Pakistan.
- **Kartarpur corridor**: The corridor was built to commemorate the 550th birth anniversary celebrations of Guru Nanak Dev, founder of Sikhism on 12th November 2019.
  - It is one of the holiest places for Sikhs where Baba Guru Nanak Dev Ji settled and preached for the last 18 years of his life.

Source: PIB

Polity and Governance

25th year of PESA Act

Syllabus: GS 2/Government Policies & Interventions

In News
- Recently, the Union Minister of Tribal Affairs and the Union Minister for Rural Development & Panchayati Raj jointly inaugurated the one-day National Conference on provisions of the Panchayats Extension to Scheduled Areas (PESA) Act 1996 (PESA).
  - The conference aims to celebrate 75 years of progressive India and commemorate the 25th year of enactment of the PESA.

About Panchayat Extension to Scheduled Areas Act, 1996
- Background:
  - The 73rd and the 74th Amendments to the Indian Constitution passed in 1992 took the three-tier Panchayati Raj governance structure to rural and urban parts of the country and came into force in April 1993.
○ However, **scheduled areas**, predominantly inhabited by the tribal population, **were exempted from the new amendments**.

○ Given low human development indicators, there was a **huge demand to empower** local governance in the scheduled area as well.

○ Thus, the government of India constituted a **committee in 1994** to look into the need for such law and modalities and how it can be extended. Chaired by **Dilip Singh Bhuria**, a parliamentarian from Madhya Pradesh, the committee **highlighted the plight of the tribal communities** and the exploitation they faced and submitted its **recommendations** in **1995**.

- **Beginning:**
  - The Parliament enacted special legislation called **Panchayat (Extension to Scheduled Areas) Act** (PESA) in **1996** and came into force on **24th December 1996**.

- **Applicability:**
  - It is now applicable in the **Fifth Schedule areas**, which deals with the administration of the **districts dominated by the tribal communities**, and is in force in **10 states** of the country.
  - Six States namely Andhra Pradesh, Himachal Pradesh, Gujarat, Maharashtra, Rajasthan and Telangana have notified PESA Rules.
    ■ The remaining four States namely Chhattisgarh, Jharkhand, Madhya Pradesh and Odisha should also frame PESA Rules and start implementing them soon.

- The **Gram Sabhas under PESA Act** were entrusted with **wide-ranging powers** to:
  - Enforce prohibition or to regulate or restrict the sale and consumption of any intoxicant.
  - Ownership of minor forest produce.
  - Prevent alienation of land in the Scheduled Areas and to take appropriate action to restore any unlawfully alienated land of a Scheduled Tribe.
  - Manage village markets by whatever name is called.
  - Exercise control over money lending to the Scheduled Tribes.
  - Exercise control over institutions and functionaries in all social sectors.
  - Control over local plans and resources for such plans including tribal sub-plans.

- In **2013**, while hearing a case, the **Supreme Court** of India referred to the **PESA** and asked the **Odisha government to go to the Gram Sabha to get permission for bauxite mining** in **Kalahandi** and **Rayagada** districts.
  ○ Local forest dwellers were asked whether bauxite mining will affect their religious and cultural rights and they **decided against the mining on Niyamgiri hills** which led to the **cancellation** of a huge project.
The case is considered a milestone that shows the power of the Gram Sabhas but this is one of the rare achievements of PESA even as it underlines the possibilities the Act carries.

- **Objectives:**
  - To extend the provisions of Part IX of the Constitution relating to the Panchayats to the Scheduled Areas with certain modifications.
  - To provide self-rule for the bulk of the tribal population.
  - To have village governance with participatory democracy and to make the Gram Sabha a nucleus of all activities.
  - To evolve a suitable administrative framework consistent with traditional practices.
  - To safeguard and preserve the traditions and customs of tribal communities.

**Significance**

- It aimed to decentralise power and empower indigenous communities, paving the way for participatory democracy & envisaged that each tier of the local government is independent.
  - It is based on the cardinal principle of governance that human communities are the best agency to handle most of their survival challenges, manage their affairs and progress towards growing emancipation through the instrumentality of participatory deliberative democracy.
- It also calls for creating the appropriate levels of Panchayats similar to 6th Schedule Area, where the administrative boundaries are autonomous enough for self-rule.
- The act is constructed around the Gandhian concept of Gram Swaraj which was included in the Constitution as Article 40 (organisation of village panchayats) and came alive only when PESA was adopted.
- While the 73rd Amendment, which inserted Article 243, made the terms Gram (village) and Gram Sabha (village assembly) a part of the Constitution for the first time, PESA gave shape to the concept of self-governance, by devolving power and authority to them.
- Hence the first substantive section of PESA begins with the legal presumption that the ‘Gram Sabha’ is ‘competent’ and calls upon the state governments to ensure legal, procedural and administrative empowerment as a means of deepening democracy.
- The principle that underlies PESA has two corollaries in relation to development namely
○ Any community can best decipher advancement and modernity when it is grounded in the strength of its own culture and way of life.
○ Any community can negotiate both advancement and modernity only when it is founded on the bedrock of its own culture and way of life.

● Its provisions appeared to come as a saviour that is designed to erase the historical injustice done to the tribal community and was perceived as a restoration of their dignity and tradition of self-governance.

● PESA seeks to protect the principle of Jal, Jungle, Jameen (Water, forest and land) for the tribals and is the basis of Atma Nirbhar Bharat

**Challenges**

● The act has now been termed “toothless” with the erosion of its spirit.

● Till now 40 per cent of States have not formulated necessary rules regarding PESA which highlights the apathetic attitude of the state governments towards it.

  ○ Four states (Chhattisgarh, Jharkhand, Madhya Pradesh and Odisha) have not even framed the rules for the implementation of the act yet.

  ○ Not a single state has currently amended the Panchayat Raj Act as required as per PESA.

  ○ Even in the states where the rules were formulated, they performed quite poorly in ensuring their implementation.

● After enacting PESA, the Union Government brought several other legislations and included many provisions of PESA into these laws, shadowing its purpose and significance.

  ○ For instance, the Land Acquisition Act, 2013 empowered Gram Sabhas immensely.

  ○ Similarly, the Forest Right Act, 2006 has provisions of PESA and now when people need to protect their rights and resources, they look up to these laws.

● Violations of the self-governance aspects of the Gram Sabhas with respect to customary resources, minor forest produce, minor minerals, minor water bodies, selection of beneficiaries, sanction of projects and control over local institutions continue.

  ○ Currently, no Gram Sabha can function without going through revenue officers at various levels and in a majority of cases, required sanctions are denied by inordinate delays or outright refusals.

  ○ No stretch of common property can in any way be rightfully owned and controlled by any village, community, group, or people.

  ○ And the gram sabha’s power to accord such ownership is never recognised.
While the constitution of Gram Sabhas was made mandatory in states, the **powers and functions of the Gram Sabhas** have been left to the **discretion of the state legislatures**. As a result, different states have developed powers and functions for this body differently.

- From the land acquired and the clearing of villages for the **Statue of Unity in Gujarat**, where 121 villages were notified for the project in a blatant disregard for PESA.
- Another example was the **criminalisation of the Pathalgadi movement**, wherein Adivasis erected stone slabs to demarcate the area of their villages.

**PESA laws of maintenance of autonomy** and **tribal culture remained obscure**.

- The infringement of the provisions of PESA outlined with it a disregard for the rights of forest-dwellers, mostly **tribal communities** which constitute around **nine per cent** of India’s population.

Violations of the Act and its dilution highlights a pattern of developments that show the **Centre and states' lack of commitment** towards strengthening of gram sabhas.

- **Instead**, there has been a push for corporate entry and control of resources, making it **easier to surpass** gram Sabha consent.

The biggest challenge is the **degradation of the spirit** of PESA as the formulation of rules did not take place for varied reasons **giving rise to increased conflict**.

- The traditional **Gram Sabhas** and the State structured **Panchayats** are in conflict with one another.

**Way Forward**

- Structures above Gram Sabha should be patterned on the **Sixth Schedule**.
  
  - Scheduled areas should have had a structure where the **powers** of the State could be allocated in such a way that the **Gram Sabha is not overridden** but empowered.

- There is a need to **pledge plausible and time-bound actions** to implement PESA in letter and spirit.

- The **conflict and the inconsistencies** between the Gram Sabhas and the Panchayats need to be ironed out.

- **State governments need to change their laws** in order to comply with PESA and laws relating to land acquisition, excise, forest produce, mines and minerals, Agri produce market and money lending need to be amended.

- PESA is **good legislation** but it will only make sense only if taken seriously and implemented well.
● It is hoped that in its 25th year of implementation, serious efforts would be pledged to identify the pitfalls and promote policies that pave the environment for the establishment, prevalence and persistence of a system of tribal self-rule in the Fifth Schedule Areas.

● There is the need for involving civil society and NGOs doing good work in the area of tribals to ensure better implementation of PESA since they are better versed with the ground reality and issues faced by the tribal people.

Source: PIB

Polity and Governance

No consensus on limiting Speaker’s powers

Syllabus: GS 2/Governance

In News

● The All-India Presiding Officers’ Conference (AIPOC) ended with the delegates failing to reach a consensus on whether the Speaker’s powers under the anti-defection law should be limited.

Major Highlights

● C.P. Joshi committee: Report of the committee headed by Rajasthan Speaker C.P. Joshi to review the anti-defection law was placed before the presiding officers but there was no consensus on it.
  ○ The committee was formed in 2019 to examine the role of the Speaker in cases of disqualification on grounds of defection under the Tenth Schedule of the Constitution.

 ● The committee has advocated that the power to disqualify MPs and MLAs under the anti-defection law should also be given to political parties rather than limiting the power only for Lok Sabha and assembly speakers

 ● Other Recommendations: There is a need to increase the number of sittings of legislative bodies. It will provide maximum time and opportunities to the members so that the people’s representatives can discuss the major issues of their State and country extensively.
  ○ There is a need for drastic changes to the functioning of Standing Committees, including changes to their rules.
  ○ Tradition of Zero Hour should be started in all State legislatures to give members the chance to raise urgent matters pertaining to their constituencies.

 ● Need of a Single platform: the work of creating a single platform for all legislatures would be done by 2022.
  ○ PM’s vision of “one nation, one legislative platform” should be realised.
Anti Defection Law

● Origin:
  ○ Aaya Ram Gaya Ram was a phrase that became popular in Indian politics after a Haryana MLA Gaya Lal changed his party thrice within the same day in 1967.
  ○ The anti-defection law sought to prevent such political defections which may be due to reward of office or other similar considerations.

● 10th Schedule:
  ○ Constitutional basis:
    ■ The Tenth Schedule was inserted in the Constitution in by 52nd Amendment Act, 1985.
  ○ Lays down the Procedure:
    ■ It lays down the process by which legislators may be disqualified on grounds of defection by the Presiding Officer of a legislature based on a petition by any other member of the House.
  ○ Condition of Defection:
    ■ A legislator is deemed to have defected if he either voluntarily gives up the membership of his party or disobeys the directives of the party leadership on a vote.
    ■ This implies that a legislator defying (abstaining or voting against) the party whip on any issue can lose his membership of the House.
  ○ Applicable to:
    ■ The law applies to both Parliament and state assemblies.

● Exceptions in Law:
  ○ Legislators may change their party without the risk of disqualification in certain circumstances.
  ○ The law allows a party to merge with or into another party provided that at least two-thirds of its legislators are in favour of the merger.
    ■ In such a scenario, neither the members who decide to merge, nor the ones who stay with the original party will face disqualification.

● Interpretation by Courts: The Supreme Court has interpreted different provisions of the law.
  ○ The phrase ‘Voluntarily gives up his membership’ has a wider connotation than resignation
    ■ The law provides for a member to be disqualified if he ‘voluntarily gives up his membership’.
    ■ However, the Supreme Court has interpreted that in the absence of a formal resignation by the member, the giving up of membership can be inferred by his conduct.
In other judgments, members who have publicly expressed opposition to their party or support for another party were deemed to have resigned.

- **Decision of the Presiding Officer is subject to judicial review**
  - **Initially it was not subject to Judicial Review:**
    - The law initially stated that the decision of the Presiding Officer is not subject to judicial review.
    - This condition was struck down by the Supreme Court in 1992, thereby allowing appeals against the Presiding Officer’s decision in the High Court and Supreme Court.
    - However, it held that there may not be any judicial intervention until the Presiding Officer gives his order.

- **It affects the ability of legislators to make decisions:**
  - The anti-defection law seeks to provide a stable government by ensuring the legislators do not switch sides.
  - However, this law also restricts a legislator from voting in line with his conscience, judgement and interests of his electorate.
  - Such a situation impedes the oversight function of the legislature over the government, by ensuring that members vote based on the decisions taken by the party leadership, and not what their constituents would like them to vote for.

**Committees on Anti-Defection Law**

- **Dinesh Goswami Committee on Electoral Reforms (1990)**
  - Disqualification should be limited to cases where (a) a member voluntarily gives up the membership of his political party, (b) a member abstains from voting, or votes contrary to the party whip in a motion of vote of confidence or motion of no-confidence.
  - The issue of disqualification should be decided by the President/ Governor on the advice of the Election Commission.

- **Law Commission (170th Report, 1999)**
  - Provisions which exempt splits and mergers from disqualification to be deleted.
  - Pre-poll electoral fronts should be treated as political parties under anti-defection law.
  - Political parties should limit issuance of whips to instances only when the government is in danger.

- **Election Commission**
  - Decisions under the Tenth Schedule should be made by the President/ Governor on the binding advice of the Election Commission.
  ○ Defectors should be barred from holding public office or any remunerative political post for the duration of the remaining term.
  ○ The vote cast by a defector to topple a government should be treated as invalid.

SC directive on Anti-defection law
• Kihoto Hollohan (1992) case: In Kihoto Hollohan (1992) case, the SC had upheld the validity of the anti-defection law and had also made the Speaker’s order subject to judicial review on limited grounds.
  ○ It had made it clear that the court’s jurisdiction would not come into play unless the Speaker passes an order, leaving no room for intervention prior to adjudication.
• Rajendra Singh Rana case of 2007: In the Rajendra Singh Rana case of 2007, the constitution bench set aside the Uttar Pradesh Speaker’s order refusing to disqualify 13 BSP defectors on the grounds that he had failed to exercise his jurisdiction to decide whether they had attracted disqualification, while recognising a ‘split’ in the legislature party.
• Manipur assembly case: In the recent Manipur assembly case, the court gave a deadline of four weeks to the Manipur Assembly Speaker to decide the disqualification question in a legislator’s case.

Source: TH

Polity & Governance

Interpretation of the POCSO Act
Syllabus: GS2/ Judiciary

In News
• Recently, the Supreme Court quashed a Bombay High Court decision stating that sexual intent of the offender forms assault, not skin-to-skin contact.

About Bombay High Court decision
• The accused was sentenced to the minimum three years’ imprisonment under Section 8 of the POCSO Act.
• That was set aside by the HC and his sentence was reduced to one year under Section 354 (assault of a woman to outrage her modesty) of the Indian Penal Code.

Supreme Court’s Stand
• The act of touching a sexual part of the body with sexual intent will not be trivialised and not excluded under Section 7 of the POCSO Act.
• Limiting the ambit of “touch” to a narrow and pedantic” definition would lead to an “absurd interpretation.
When the legislature had clarified its intent, the court should not introduce ambiguity.

**Protection of Children from Sexual offences (POCSO) Act, 2012**

- It is a special law to protect children from sexual abuse and exploitation.
- **Section 7** mandates that:
  - “whoever with sexual intent touches the vagina, penis, anus or breast of the child or makes the child touch the vagina, penis, anus or breast of such person or any other person, or does any other act with sexual intent which involves physical contact without penetration is said to commit sexual assault”.
  - Most important ingredient in Section 7 is the **sexual intent of the offender** and not skin-to-skin contact.

- **Purpose of the law:**
  - To provide protection of children from the offences of sexual assault, sexual harassment and pornography while safeguarding the interests of the child at every stage of the judicial process by incorporating child-friendly mechanisms for reporting, recording of evidence, investigation and speedy trial of offences through designated special courts.

- **Definition of a child:**
  - The Act defines a child as any person below 18 years of age and defines different forms of sexual abuse including penetrative and non-penetrative assault as well as sexual harassment and pornography.

- **Sexual assault:**
  - It deems a sexual assault to be “aggravated” under certain circumstances such as when the abused child is mentally ill or when the abuse is committed by a person in a position of trust or authority vis-à-vis the child, like a family member, police officer, teacher, or doctor.
  - People who traffic children for sexual purposes are also punishable under the Act.

- **Punishment:**
  - POCSO prescribes stringent punishment graded as per the gravity of the offence, with a maximum term of rigorous imprisonment for life, and fine.
  - Section 44 (1) of POCSO Act, 2012 provides that the National Commission for Protection of Child Rights (NCPCR) and State Commission for Protection of Child Rights (SCPCR) shall monitor the implementation of the provisions of the Act.

- **Amendments made in 2019 to the POCSO Act, 2012**
  - The POCSO Act was amended in order to make it more effective in dealing with cases of child sex abuse in the country.
- The Act was notified on 6 August, 2019, and went into effect from 16 August, 2019.
- It addressed the need for stringent measures to deter the rising trend of child sex abuse in the country on one hand and the menace of relatively new kinds of crimes on the other hand.
- The following amendments were brought under POCSO Act, 2012, through POCSO (Amendment) Act, 2019:
  - **Section 2 (Definitions)** amended to incorporate definition of child pornography;
  - **Section 4** (Punishment for penetrative sexual assault) amended to increase the quantum of punishment from a minimum of seven years to minimum of 10 years, and a minimum of 20 years in case of a child below 16 years

**Significance**
- It safeguards the interests of the child at every stage of the judicial process by incorporating child-friendly mechanisms for reporting, recording of evidence, investigation and speedy trial of offences through designated special courts.
- The responsibility of maintaining law and order, protecting the life and property of the citizens including children, rests primarily with the respective state governments and UT administration.
- While the JJ Act, 2015 ensures the safety, security, dignity and well-being of children, the POCSO Act, 2012 is a comprehensive law that provides protection to children from the offences of sexual assault, sexual harassment and pornography.

**Challenges**
- **Burning Issue:**
  - According to a study Status of POCSO cases in India in March 2021 conducted by Kailash Satyarthi Children's Foundation, "Child sexual abuse is one of the most pressing concerns of the day.
- **Rising cases:**
  - The rising number of cases of children who are reported to have suffered some form of sexual abuse is indicative of the failure of the State and society to provide children with an environment conducive to growth, in accordance with the United Nations Convention on the Rights of the Child.
- **Low conviction rates:**
  - Madhya Pradesh, Maharashtra, Uttar Pradesh, Haryana and Delhi constitute 51 percent of the POCSO cases in the country but the rate of conviction in these states is between 30 percent and 64 percent.
More courts needed:
   ○ Of the 1,023 fast track courts to be set up, 612 are already functional but there is need to establish all the sanctioned courts quickly as 89 percent of child sexual abuse cases still await trial.

Implementation of the Act:
   ○ Though, the Act mentions Special Children courts to be established to hear the cases. Many states did not establish such courts. This is highlighted by Re: Exploitation of Children in Orphanages in the State of Tamil Nadu v. Union of India & Ors case.

Way Ahead
   ● It is an opportunity to take cognizance of the problem and strive towards getting justice for victims, and aim to prevent future instances of child sexual abuse.
   ● The rising public consciousness and media attention, along with the proactive measures taken by the judiciary in the last few years is proof that the right of children to live with dignity is finally getting the attention it requires.

Source: TH

Indian Economy

Shale and Its Potential in India
Syllabus: GS3/ Infrastructure

In News
   ● Recently, Cairn Oil & Gas has announced that it is partnering US-based Halliburton to start shale exploration in the Lower Barmer Hill formation, Western Rajasthan.

About
   ● The company is looking to increase the recoverable reserves at its offshore assets by 10 times via enhanced use of technology, in partnership with Halliburton.

Image Courtesy: Geology
Shale Oil

**Definition:**
- Shale gas is natural gas, one of several forms of unconventional gas (also known as methane or CH4).
- It is trapped within shale formations with low permeability, which is fine-grained sedimentary rock which acts as its source as well as reservoir.
- It is an unconventional oil produced from oil shale rock fragments by pyrolysis, hydrogenation, or thermal dissolution.
- These processes convert the organic matter within the rock into synthetic oil and gas.

**Difference from crude oil:**
- The key difference between shale oil and conventional crude is that the former, also called ‘tight oil’, is found in smaller batches, and deeper than conventional crude deposits.
- Its extraction requires creation of fractures in oil and gas rich shale to release hydrocarbons through a process called hydraulic fracking.

**Largest producers:**
- Russia and the US are among the largest shale oil producers in the world, with a surge in shale oil production in the US having played a key role in turning the country from an importer of crude to a net exporter in 2019.
- A number of US shale exploration firms, including Halliburton, have faced litigation from citizens living in areas adjacent to shale production sites who have claimed that hydraulic fracking has contributed to groundwater contamination.

**Shale oil extraction methods:**
- **Mined shale oils** are transported to the processing plants, heated to 500OC, and oil comes out from these rocks.
- **Situ technique:** Oil shale is broken by explosion and Kerogen comes out like crude oil from these rocks.

**Prospects of Shale oil exploration in India**

- Currently, there is no large-scale commercial production of shale oil and gas in India.
- **Limited success:** State-owned ONGC had, in 2013, started exploration and, by the end of FY21, assessed shale oil and gas potential in 25 nomination blocks, but has reduced investments over the past few years after only getting limited success in shale exploration efforts.
• **Basins:** While ONGC’s assessment found prospects of shale oil at the Cambay basin in Gujarat and the Krishna Godavari basin in Andhra Pradesh, the company concluded that the quantity of oil flow observed in these basins did not indicate “commerciality” and that the general characteristics of Indian shales are quite different from North American ones.

• **GoI Policy Guidelines:** As per the policy guidelines notified by Government of India (GoI) for exploration and exploitation of shale gas and oil in India by National Oil Companies (NOCs), ONGC has identified 50 nomination PML (Petroleum Mining Lease) blocks under Phase-I.

• The exploratory efforts so far have led to the discovery of 65 small-to-medium sized hydrocarbon fields with about 356 million tonnes (oil and oil equivalent gas) of initial in-place on-land reserves.

• The current production of oil and gas is 750-800 tonnes per day and 2.5-3 million cubic metres of gas, respectively.

**Policy Guidelines by Government of India**

• Exploration for assessing the Shale gas/oil prospectivity has been initiated in 4 basins of the country viz.,
  - Cambay,
  - KG,
  - Cauvery and
  - A&AA Basins.

• Since the KG basin holds significant promise for additional reserve accretion, the petroleum ministry is keen to continue the exploratory activity.

• In August 2018, the Central government approved a far-reaching policy that allows private and government players to explore and exploit unconventional hydrocarbons (including shale gas) in contract areas that were primarily allocated for extracting conventional hydrocarbons.

• Unlike conventional hydrocarbons that can be sponged out of permeable rocks easily, **shale gas is trapped under low permeable rocks**.

• Therefore, a mixture of ‘pressurised water, chemicals, and sand’ (shale fluid) is required to break low permeable rocks in order to unlock the shale gas reserves.

• The process requires around 5 to 9 million litres of water per extraction activity, posing a daunting challenge to India’s fresh water resources.

**Tight Oil**

• **Definition:**
  - Tight oil is light crude oil contained in petroleum-bearing formations of low permeability, often shale or tight sandstone.
• **Production:**
  - Economic production from tight oil formations requires the same hydraulic fracturing and often uses the same horizontal well technology used in the production of shale gas.

• **Found:**
  - It is found in impermeable shale and limestone rock deposits. Also known as “shale oil,” tight oil is processed into gasoline, diesel, and jet fuels—just like conventional oil—but is extracted using hydraulic fracturing, or “fracking.”

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**Challenges**

- Massive water requirements for fracking
- Potential for groundwater contamination.
- The fracking process poses another challenge of recycling and leakage issues associated with the flowback water which is usually methane-contaminated.
- Excessive methane emission
- Inadequate treatment of drill cuttings
● Waste water disposal techniques not up to the mark
● Relative to conventional sources, shale oil typically produces more pollution to extract, though the extent depends on whether or not the operators avoid wasteful and unnecessary emissions.

**Way Ahead**

● Using less oil—and transitioning to cleaner transportation technologies—would help decrease the need for unconventional energy sources like tight oil or tar sands.
● More efficient cars and trucks and clean fuel alternatives can cut our oil use, with huge benefits for drivers, the economy, and the country.
● As others make progress toward a cleaner transportation system, oil companies should ensure that the oil we do use doesn't get worse.
● Avoiding unnecessary flaring, reducing fugitive emissions, and avoiding the dirtiest sources altogether would help minimize shale oil's emissions.

*Source: IE*

**Environment and Ecology**

**India needs about $10 trillion to meet net zero targets: CEEW**

*Syllabus: GS 3/ Environment and Ecology, Climate Change*

**In News**

● To meet its goals of net zero, or being able to effectively eliminate carbon dioxide emissions by 2070, India will need close to $10 trillion according to an analysis by climate and energy research firm, CEEW Centre for Energy Finance (CEEW-CEF).

**Major Highlights**

● **Think tank**: CEEW is the Council for Energy, Environment and Water Research, a think tank in New Delhi.

● **Utilization of the funds**: Most of this money, around $8.4 trillion, would be needed to significantly scale up generation from **renewable energy** and bring together the necessary integration, distribution and transmission infrastructure.
  ○ Another $1.5 trillion would have to be invested in the **industrial sector** for setting up green hydrogen production capacity to advance the sector’s decarbonisation.
    ■ **Green hydrogen** is hydrogen gas made from renewable energy and can be used for many things, from heating to powering batteries as well as fuelling vehicles.
  ○ The study estimates that India would fall short by $3.5 trillion to achieve net-zero emissions by 2070 and hence, investment support of $1.4 trillion,
in the form of **concessional finance**, would be required from developed economies to mobilise foreign capital that bridges the gap.

- Concessional finance refers to loans at below-market interest rates.

**India’s goals**

- **Glasgow summit**: At the recently concluded summit in Glasgow, Scotland, Prime Minister announced India’s national goals to significantly improve the proportion of renewable energy in its installed capacity and be net zero by 2070.

- **Reaching net zero by 2050 is earth’s best chance**: to keep the globe’s average temperature from exceeding 1.5°C by the end of the century.

- **Near-term and long-term climate targets**: At COP26, India announced bold near-term and long-term climate targets.

- **Other targets**: The commitment of 500GW of renewable energy by 2030, which is more than twice the installed capacity of coal currently, should set the stage for a quick transformation of the energy sector.

- **Updated Nationally Determined Contribution (NDC)**: As per the new NDC, 50% of electricity generation will come from renewable energy sources by 2030 and the target of achieving 450 GW non-fossil energy capacity has been increased to 500 GW by 2030.
  
  - For the first time, India announced the target of achieving net zero emission by 2070 and that it will reduce carbon emissions by one billion tonnes by 2030. These were not a part of the 2015 NDCs.

**Challenges to be faced in future**

- **Injustice against developing nations**: there hasn't been as much focus on climate adaptation as much as mitigation and that is an injustice against developing nations.

- **Environmental shocks**: There are changes in cropping patterns; there are floods and a great need to make agriculture resilient to these shocks.

- **Global carbon budget**: limiting the increase in the world’s average temperature from pre-industrial levels to those agreed in the Paris Agreement requires global cumulative emissions of carbon dioxide to be capped at the global carbon budget.

- **The top three emitters of the world**: China, the U.S. and the European Union even after taking account of their net zero commitments and their enhanced emission reduction commitments for 2030; will emit more than 500 billion tonnes of carbon dioxide before net zero.

- **Non-effective**: Neither the Paris Agreement nor climate science requires that net zero be reached individually by countries by 2050.

**Steps to be taken for its effective implementation**

- **Investment support**: Analysis finds that a transition to net zero emissions would require mammoth investment support from developed countries.
• **Targets for Developed countries to be upped:** Developed countries must ramp up hard targets for climate finance over the coming years.

• **Domestic front:** Also, on the domestic front, financial regulators such as the RBI and SEBI need to create an enabling ecosystem for financing India’s transition to a green economy.

• **Investments in existing and emerging clean technologies:** Finally, given the size of the investments required, private capital, from both domestic and international institutions, should form the bulk of investment, while public funds should play a catalytic role by de-risking investments in existing and emerging clean technologies.

• **Solar power:** to achieve net zero by 2070, India’s total installed solar power capacity would need to increase to 5,630 GW by 2070.
  - The usage of coal, especially for power generation, would need to peak by 2040 and drop by 99% between 2040 and 2060.

• **Crude oil consumption:** Crude oil consumption across sectors would need to peak by 2050 and fall substantially by 90% between 2050 and 2070. Green hydrogen could contribute 19% of the total energy needs of the industrial sector.

• **Change in lifestyles:** If we cannot fix how we live, we cannot fix the planet on which we live.

• **Lessons from India:** sustainable modes of living being practised in certain traditional communities ought to be made part of school curricula and the lessons from India’s efforts at adaptation in programmes such as Jal Jeevan mission, Swachh Bharat mission and mission ujwala ought to be popularized globally.

  Source: TH

### Facts In News

#### Indian Economy

**Langtang Microhydro Electricity Project**

Syllabus: GS 3/Mobilisation of Resources/ Growth & Development/Infrastructure

**Energy**

**In Context**

- The *Langtang Microhydro Electricity Project* was built three years after the 2015 earthquake-avalanche with help from the *Hong Kong-based Kadoorie Charitable Foundation*.

**About Langtang Microhydro Project.**

- It costs $530,000 and has a *weir and spillway* at the moraine, and the water is taken through a fibre glass-insulated penstock pipe to a powerhouse that generates 100kW of electricity.
• It will be providing 24 hours of electricity to 120 households and tourist lodges in Kyanjin and Langtang.

• **Benefits:**
  ○ The project is the *first-of-its-kind* in Nepal to power a village and holds *promise for other remote Himalayan valleys* where the risk posed by expanding glacial lakes can be mitigated, while at the same time providing electricity to *tourism-dependent families*.

• **Risk:**
  ○ The only downside would be that most glacial lakes are at **very high elevations** where there are few settlements, and also *the greater cost of transporting equipment by helicopter.*
    ■ But if the risk-reduction from glacial lake outburst floods is factored in, these multi-purpose projects would be cost-effective.

### Glacial Lake
- **A glacial lake is a body of water** with origins from glacier activity.
- They are formed when a glacier erodes the land, and then melts, filling the depression created by the glacier.
- Glacial lakes have been used to generate power in the Peruvian Andes, and in the Swiss Alps, existing reservoirs filled with glacial melt have been generating 4% more electricity because of accelerated melting.

Source: DTE

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**Science and Technology**

**Zircon Hypersonic Cruise Missile**

*Syllabus: GS 3/Defence*

**In News**
- Recently, Russia had carried out another successful test of its **Zircon hypersonic cruise missile** from the Severodvinsk submarine and hit a designated mock target in the Barents Sea.

**About Zircon hypersonic cruise missile**
- Zircon’s tests are to be completed later this year and they will be commissioned by the Russian navy in 2022.
- It could hit targets at **sea and on land with a range of 1,000 kilometres (620 miles)**.
- It would be capable of flying at nine times the speed of sound.
- Zircon is intended to arm Russian cruisers, frigates and submarines.
- It is one of several hypersonic missiles under development in Russia.
Developments in India

- India has collaborated with Russia on the development of BrahMos II, a Mach 7 hypersonic cruise missile.
  - BrahMos II was initially intended to be fielded in 2017 but the programme faces significant delays and is now scheduled to achieve initial operational capability between 2025 and 2028.
- India is also developing an indigenous, dual-capable hypersonic cruise missile as part of its Hypersonic Technology Demonstrator Vehicle programme and successfully tested a Mach 6 scramjet in June 2019 and September 2020.
- India operates approximately 12 hypersonic wind tunnels and is capable of testing speeds of up to Mach 13.

What is Hypersonics?

- Hypersonics can travel more than five times the speed of sound and manoeuvre in mid-flight, making them much harder to track and intercept than traditional projectiles.
- The combination of speed, manoeuvrability and altitude of hypersonic missiles, capable of travelling at more than five times the speed of sound, makes them difficult to track and intercept.

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Source: NDTV
Modern History

Rani Lakshmibai
Syllabus: GS 1/Personalities

In News
- Recently, the Prime Minister of India has paid tributes to Rani Lakshmibai on her Jayanti.

About Rani Lakshmi Bai
- Lakshmi Bai was born on November 19, 1835, in Kashi, India.
- **Early Life:** Brought up in the household of the Peshwa (ruler) Baji Rao II.
  - She grew up with the boys in the Peshwa’s court and was trained in **martial arts and became proficient** in sword fighting and riding.
- **Marriage:** She married the Maharaja of Jhansi, Gangadhar Rao, but was widowed without bearing a surviving heir to the throne.
  - The Maharaja adopted a boy as his heir just before his death,
  - Lord Dalhousie, the British governor-general of India, refused to **recognize the adopted heir and annexed Jhansi** in accordance with the **Doctrine of Lapse**.

**Doctrine of Lapse**
- It was an **annexation policy** followed widely by Lord Dalhousie when he was India's Governor-General from 1848 to 1856.
- According to this, any princely state that was under the direct or indirect control of the East India Company where the ruler did not have a legal male heir would be annexed by the company.
- It was enforced in the cases of Satara (1848), Jaitpur and Sambalpur (1849), Baghat (1850), Chota Udaipur (1852), Jhansi (1853), and Nagpur (1854).
- **Uprising against the British:**
  - She refused to cede Jhansi to the British. Shortly after the beginning of the mutiny in 1857, which broke out in Meerut.
  - She was proclaimed the **regent of Jhansi**, and she ruled on behalf of the minor heir.
○ Under **Gen. Hugh Rose**, the East India Company’s forces had begun their counteroffensive in **Bundelkhand by January 1858**.
  ■ Advancing from Mhow, Rose captured Saugor (now Sagar) in February and then turned toward Jhansi in March.
○ She offered stiff resistance to the invading forces and the rescuing army of Tantia Tope, another rebel leader, was defeated at the **Battle of Betwa**.
○ Tantia Tope and Lakshmi Bai then mounted a successful assault on the **city-fortress of Gwalior**.
  ■ The treasury and the arsenal were seized, and Nana Sahib, a prominent leader, was proclaimed as the **Peshwa (ruler)**.

**Death:** After taking Gwalior, Lakshmi Bai marched east to Morar to confront a British counterattack led by Rose.
  ○ She fought a fierce battle and was killed in combat on June 17, 1858, near Gwalior.

Source: PIB

### Indian Economy

**India world’s largest recipient of remittances: World Bank**

**Syllabus:** GS3/ Indian Economy & related issue

**In News**

○ According to the World Bank, India is the world’s largest recipient of remittances in the year 2021.

**Key Points**

○ **India received $87 billion in 2021** with the **United States being the biggest source**, accounting for over 20 per cent of these funds.
  ○ India had received over **$83 billion in remittances in 2020**.
○ India is **followed by China, Mexico, the Philippines, and Egypt**.
○ In India, remittances are **projected to grow three per cent in 2022 to USD 89.6 billion**, reflecting a drop in overall migrant stock, as a large proportion of returnees from the Arab countries await return.
○ Remittances to low- and middle-income countries are projected to have **grown a strong 7.3 per cent** to reach USD 589 billion in 2021.
○ Remittance flows from migrants have greatly **complemented government cash transfer programs** to support families suffering economic hardships during the COVID-19 crisis.
Remittance

- **About:**
  - Remittance refers to **money that is sent or transferred to another party (country), usually overseas.**
  - Remittances represent one of the largest sources of income for people in **low-income and developing nations.** It often exceeds the amount of direct investment and official development assistance.
  - Remittances help **families afford food, healthcare, and basic needs.**

- **Rise in remittances:**
  - **Migration among people** who choose to live abroad for jobs or studies is increasing. Therefore, many remittances are made by people who want to send money back home.
  - **Businesses have increasingly relied on the internet** as it makes connecting and collaborating with suppliers, employees and clients easier. This has resulted in overseas remittances paying for business invoices.

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**World Bank**

- It traces its origin to the **Bretton Woods Conference,** officially known as the **United Nations Monetary and Financial Conference,** was a gathering of delegates from 44 nations that met from July 1 to 22, 1944 in Bretton Woods, New Hampshire (USA), to agree upon a series of new rules for international financial and monetary order after the conclusion of World War II.

- The **two major accomplishments** of the conference were the creation of the **International Bank for Reconstruction and Development (IBRD)** and the **International Monetary Fund (IMF).**

- The World Bank Group is an **international partnership** comprising 189 countries and five constituent institutions that works towards eradicating poverty and creating prosperity.

- **The five development institutions under the World Bank Group** are:
  - International Bank for Reconstruction and Development (IBRD)
  - International Development Association (IDA)
  - International Finance Corporation (IFC)
  - Multilateral Guarantee Agency (MIGA)
  - International Centre for the Settlement of Investment Disputes (ICSID)

- **Reports and Publication:**
  - Ease of Doing Business
  - World Development Report
  - Global Economic Prospects

Source: ET
Global Bribery Risk Rankings

Source: GS2| Governance

In News

- India stands at 82 in global bribery risk rankings, dips by five spots.

Major Highlights

- **Rankings**: India has slipped to **82nd position in 2021**, five places down from 77th rank last year, in a global list that measures business bribery risks.

- **TRACE**: The list by TRACE, an **anti-bribery standard setting organisation**, measures business bribery risk in 194 countries, territories, and autonomous and semi-autonomous regions.
  - It was **originally published in 2014** to meet a need in the business community for more reliable and nuanced information about the risks of commercial bribery worldwide.
  - The **TRACE Bribery Risk Matrix aggregates** relevant data obtained from leading public interest and international organisations, including the United Nations, World Bank, V-Dem Institute at the University of Gothenburg and World Economic Forum.

- **Highest and lowest ranking countries**: According to this year’s data, North Korea, Turkmenistan, Venezuela and Eritrea pose the highest commercial bribery risk, while Denmark, Norway, Finland, Sweden and New Zealand present the lowest.
● **Four factors:** This score is based on four factors:
  ○ business interactions with the government,
  ○ anti-bribery deterrence and enforcement,
  ○ government and civil service transparency, and
  ○ Capacity for civil society oversight which includes the role of the media.

● **Rankings of the neighbours:** India fared better than its neighbours – Pakistan, China, Nepal and Bangladesh. Bhutan, meanwhile, secured 62nd rank.

● **Overall analysis:** Over the past five years, the business bribery risk environment in the United States worsened significantly when compared with global trends.
  ○ From 2020 to 2021, all of the Gulf Cooperation Council (GCC) countries saw an increase in commercial bribery risk.
  ○ Over the past five years, the countries that have shown the greatest trend toward improvement in the factors underlying commercial bribery risk are Uzbekistan, the Gambia, Armenia, Malaysia and Angola.

● **Significance of the index:** This data helps companies to assess the likely risk of bribe demands in each country and to design compliance and due diligence programs tailored to that risk.

  **Source:** IE