GOVERNANCE- WELFARE SCHEMES, E-GOVERNANCE, SERVICES ETC.

Suo-Motu Powers of National Green Tribunal

Recently, the Supreme Court has declared the National Green Tribunal's (NGT) position as a "unique" forum endowed with suo motu (on its own motion) powers to take up environmental issues across the country.

Key Points

Highlights of the Judgement:

- Not limited to Adjudicating Role: The role of the NGT is not simply adjudicatory in nature. The Tribunal has to perform equally vital roles that are preventative, ameliorative or remedial in nature.
- The functional capacity of the NGT is intended to leverage wide powers to do full justice in its environmental mandate.
- Article 21 rights cannot stand on a narrow compass of interpretation. Article 21 of the constitution protects the right to life and personal liberty.
- Multidisciplinary Role: NGT, as a complimentary, competent, specialised forum, to deal with all environmental multidisciplinary issues both as original and also as an appellate authority.
- International Commitment: The NGT embodied the international obligation India owed to the environment.
- The NGT has been recognised as one of the most progressive Tribunals in the world.
- This jurisprudential leap has allowed India to enter a rather exclusive group of nations which have set up such institutions with broad powers.

About National Green Tribunal:

- It is a specialised body set up under the National Green Tribunal Act (2010) for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.
- With the establishment of the NGT, India became the third country in the world to set up a specialised environmental tribunal, only after Australia and New Zealand, and the first developing country to do so.
- The NGT Act provided a specialized role to the tribunal to act on issues where a dispute arose under seven specified laws (mentioned in Schedule I of the Act): The Water Act, The Water Cess Act, The Forest Conservation Act, Air Act, Environment Protection Act, Public Liability Insurance Act and the Biological Diversity Act.
- NGT is mandated to make disposal of applications or appeals finally within 6 months of filing the same.
- The NGT has five places of sittings, New Delhi is the Principal place of sitting and Bhopal, Pune, Kolkata and Chennai are the other four.
- The Tribunal is headed by the Chairperson who sits in the Principal Bench and has at least ten but not more than twenty judicial members and at least ten but not more than twenty expert members.
- Decisions of the Tribunal are binding. The Tribunal has powers to review its own decisions. If this fails, the decision can be challenged before the Supreme Court within ninety days.

Associated Challenges:

- Persistent Vacancies: In the last nine years, the NGT has never got the minimum strength of ten judicial and ten expert members to address the increasing number of environmental litigations across the country.
- Implementation of Orders: There are also serious challenges as far as implementation of the NGT's orders is concerned.
- The NGT Act specifies that the compensation amount as ordered by the tribunal should be remitted to the authority of the Environmental Relief Fund within a period of 30 days from the date of order.
- However, it is observed that the polluters don't abide by this rule.
- Further, there is no institutional mechanism to ensure that the environmental regulatory authorities comply with the orders of the tribunal.

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- Appeals to Supreme Court: The NGT orders are increasingly challenged in the Supreme Court, where a heavy penalty has been imposed by the tribunal.

Way Forward

- There is a need for more autonomy and to widen NGT's scope for effective protection of the environment in balance with human developmental activities.
- The government needs to provide adequate financial and human resources — if it does not want the NGT to wither away.
- NGT offers a path for the evolution of environmental jurisprudence by setting up an alternative dispute resolution mechanism. It helps reduce the burden of litigation in the higher courts on environmental matters.

SOCIENCE AND TECHNOLOGY

Quantum Key Distribution

- Recently, the government has inaugurated C-DOT's (Centre for Development of Telematics) Quantum Communication Lab and unveiled the indigenously developed Quantum Key Distribution (QKD) solution.
- The government has also allocated USD 1 billion for the National Mission on Quantum Technologies and Applications spanning over a period of 8 years.

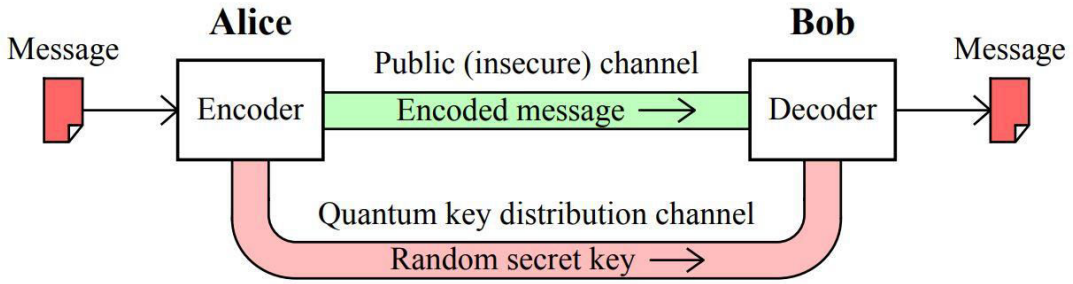
Key Points

About:

- QKD, also called Quantum Cryptography, is a mechanism to develop secure communication.
- It provides a way of distributing and sharing secret keys that are necessary for cryptographic protocols.
- Cryptography is the study of secure communications techniques that allow only the sender and intended recipient of a message to view its contents.
- Cryptographic algorithms and protocols are necessary to keep a system secure, particularly when communicating through an untrusted network such as the Internet.
- The conventional cryptosystems used for data-encryption rely on the complexity of mathematical algorithms, whereas the security offered by quantum communication is based on the laws of Physics.

Mechanism:

- In the QKD, encryption keys are sent as 'qubits' (or quantum bits) in an optical fibre.
- Optical fibers are capable of transmitting more data over longer distances and faster than other mediums. It works on the principle of total internal Reflections.
- QKD implementation requires interactions between the legitimate users. These interactions need to be authenticated. This can be achieved through various cryptographic means.
- QKD allows two distant users, who do not share a long secret key initially, to produce a common, random string of secret bits, called a secret key.
- The end-result is that QKD can utilize an authenticated communication channel and transform it into a secure communication channel.
- It is designed in a way that if an illegitimate entity tries to read the transmission, it will disturb the qubits – which are encoded on photons.
- This will generate transmission errors, leading to legitimate end-users being immediately informed.



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Qubits:

- Conventional computers process information in 'bits' or 1s and 0s, following classical physics under which our computers can process a '1' or a '0' at a time.
- Quantum computers compute in qubits. They exploit the properties of quantum mechanics, the science that governs how matter behaves on the atomic scale.
- In this scheme of things, processors can be a 1 and a 0 simultaneously, a state called quantum superposition.
- Because of quantum superposition, a quantum computer — if it works to plan — can mimic several classical computers working in parallel.

Need:

- QKD is essential to address the threat that rapid advancement in Quantum Computing poses to the security of the data being transported by various critical sectors through the current communication networks.

Benefits:

- The technology would be useful in enabling various start-ups and small and medium enterprises in the domain of quantum information.
- It is expected to create a definition of standards and formulate crypto technology-related policies.

Significance:

Detection of Leak:

- It allows the detection of data leak or hacking because it can detect any such attempt.

Predetermined Error Levels:

- It also allows the process of setting the error level between the intercepted data.

Unbreakable Encryption:

- The encryption is unbreakable and that's mainly because of the way data is carried via the photon.
- A photon cannot be perfectly copied and any attempt to measure it will disturb it. This means that a person trying to intercept the data will leave a trace.

NATIONAL DEVELOPMENTS

Indian Space Association (ISpA)

Recently, the Prime Minister has launched the Indian Space Association (ISpA) via video conferencing. ISpA will act as a single-window and independent agency on matters related to space technology.

The PM also remarked that the Government's approach to space reforms is based on 4 pillars.

Key Points

About ISpA:

- ISpA aspires to be the collective voice of the Indian Space industry. ISpA will be represented by leading domestic and global corporations that have advanced capabilities in space and satellite technologies.
- ISpA will undertake Policy Advocacy and engage with all stakeholders in the Indian Space domain, including the Government and its Agencies, to make India self-reliant, technologically advanced and a leading player in the space arena.
- ISpA will also work towards building global linkages for the Indian space industry to bring in critical technology and investments into the country to create more high skill jobs.

Significance of ISpA:

- One of the main goals of the organisation is to supplement the government's efforts towards making India a global leader in commercial space-based excursions.
- Of late, ISRO's rockets have been carrying the payload and communication satellites of various countries; now, private players will also look to touch on this space with the new organisation.
- Several private sector companies have shown an interest in India's space domain, with space-based communication networks coming to the fore.

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Other Related Organisations:

- **IN-SPACE:** Indian National Space Promotion and Authorization Centre (IN-SPACe) was approved in 2020 to provide a level playing field for private companies to use Indian space infrastructure.
- **NSIL:** In the 2019 Budget, the government had announced the setting up of a New Space India Limited (NSIL), a public sector company that would serve as a marketing arm of ISRO (Indian Space Research Organisation).
- Its main purpose is to market the technologies developed by ISRO and bring it more clients that need space-based services.
- That role, incidentally, was already being performed by Antrix Corporation, another public sector undertaking working under the Department of Space, and which still exists.

Four Pillars of Space Reforms:

- Allowing the private sector freedom of innovation.
- Government playing the enabler's role.
- Preparing youngsters for the future.

Recently, ATL Space Challenge 2021 has been launched. This is to ensure that students of classes 6 to 12 are given an open platform where they can innovate and enable themselves to solve digital age space technology problems.

Treating the space sector as a resource for the progress of the common man.

Development projects are being monitored by satellite imaging, space technology is being used in settlement of Fasal Bima Yojna claims and disaster management planning, and the NAVIC system is helping fishermen.

SOCIAL JUSTICE

Global Girlhood Report 2021: Girls Right in Crisis

Recently, an Non-Governmental Organization (NGO), Save the Children released the Global Girlhood Report 2021: Girls Right in Crisis.

International Day of the Girl Child

- It is observed annually on 11th October. It was declared by the United Nations (UN), which was first observed in 2012.
- A resolution to declare 11th October as the International Day of the Girl Child was adopted by the UN General Assembly on 19th December 2011.
- The day is dedicated to raising awareness on gender equality while assuring rights and improving opportunities for girls.

Theme for 2021:

- Digital generation. Our generation.

Key Points

Rate of Child Marriage:

- West and Central Africa has the highest rate of child marriage in the world.

Death Due to Child Marriage:

- Child marriage kills more than 60 girls a day globally, 26 girls a day in West and Central Africa and six girls a day in South Asia.
- South Asia is followed by East Asia and the Pacific and Latin American and the Caribbean.
- The deaths are majorly caused from pregnancy and childbirth resulting from child marriage.

Effect of Covid on Child Marriage:

- With school closures, health services under strain or closed, and more families being pushed into poverty, women and girls face an increased risk of violence during lengthy lockdowns.
- A further 10 million girls are now expected to marry by 2030, leaving more girls at risk of dying.
- Earlier, according to a report published by ChildLine India the pandemic and the subsequent lockdown have proved to be new drivers of child marriages in rural Madhya Pradesh.
- Also some activists and organisations of Karnataka have raised the issue of increased child marriages in Lockdown with the Ministry of Women and Child Development.

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Suggestions: The report called on the governments to:

- Help Girls Raising Voices:
- Raise girls' voices by supporting their right to safe and meaningful participation in all public decision-making.

Focus on Gender Equality:

- Address immediate and ongoing risks of gender-based violence, including child marriage, by putting girls' rights and gender equality at the center of Covid-19 and humanitarian responses, development policy, and broader efforts to build forward better.

Guarantee Girls Their Rights:

- Guarantee the rights of all girls, including those impacted by different forms of inequality and discrimination by developing inclusive policies and programs. Safe and ethical data collection must also be improved to better understand and respond in real-time to Covid-19's impact on existing economic, climate, and conflict-related crises.

Ensure Participation of Female Staffs:

- Ensure the safe and unrestricted participation of female humanitarian staff in all humanitarian response efforts, including needs assessments and the design, implementation, and monitoring, and evaluation of all humanitarian services at every level.

Join the Generation Equality Movement:

- The movement is working to deliver on the Global Acceleration Plan for Gender Equality (launched by Generation Equality Forum), which set a target to prevent nine million child marriages in five years.

Related Indian Initiatives:

- The Child Marriage Restraint Act of 1929 restricts the practice of child marriage.
- The Special Marriage Act, 1954 and the Prohibition of Child Marriage Act, 2006 prescribe 18 and 21 years as the minimum age of consent for marriage for women and men respectively.
- The Prohibition of Child Marriage Act, 2006 was enacted to address and fix the shortcomings of the Child Marriage Restraint Act.

The Union Ministry for Women and Child Development has set up a committee to examine matters pertaining to age of motherhood, imperatives of lowering Maternal Mortality Ratio and the improvement of nutritional levels among women. The Committee is headed by Jaya Jaitely.

The Committee was proposed in the Union Budget 2020-21.

Prevention of Child Marriage is a part of SDG 5 which deals with gender equality and empowerment of all women and girls.

ENVIRONMENT AND BIODIVERSITY

New Cicada Species: Nagaland

Recently, a new cicada species (Platyomia kohimaensis) was found in the Naga Hills of Nagaland.

Earlier, two species of Cicadas Savazana mirabilis and Salvazana imperalis were discovered in Meghalaya.

Key Points

- Cicadas are hemipteran insects known for their loud, complex and species-specific acoustic signals or songs.
- Hemipteran insects, also called true bugs, have mouthparts used for piercing and sucking and have two pairs of wings.
- The new cicada species belongs to the Platylomia radha group described from the Naga Hills in the eastern Himalayas.
- It is a dusk singing, large-sized cicada that calls for a short window during the evening twilight hours. It timbalises in the form of a continuous and regular cackling.
- Timbal is a sound producing membrane in various insects.
- Significance of Cicadas:
- They are mostly beneficial. They prune mature trees, aerate the soil, and once they die, their bodies serve as an important source of nitrogen for growing trees.
- With their acoustic signatures, they act as indicators of a healthy forest ecosystem.

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Habitat:

- Most cicadas are canopy dwellers and are found in natural forests with large trees.
- The generic diversity of cicadas in India and Bangladesh ranks the highest in the world, followed by China.

Threat:

Large-scale clearing of natural forest land into human settlement and agricultural fields, along with burning of forests is behind the shrinking distribution of Cicada.

Since it is considered a delicacy and fetches a good price, its unabated capturing and killing during its mass emergence poses a great threat to its survival.

IMPORTANT FACTS FOR PRELIM

Indian Sandalwood

Recently, as a part of the ongoing 'Azaadi ka Amrit Mahotsav' initiative, the government of India inaugurated a training program on Indian Sandalwood Farming & Management.

The programme aims at establishing Sandalwood Technology Innovation centres in the growing states, value addition in training & skill development as well as introducing new methods of cultivation among farmers & young entrepreneurs.

Key Points

- Santalum album, commonly known as Indian Sandalwood, is a dry deciduous forest species native to China, India, Indonesia, Australia, and the Philippines.
- Sandalwood has been long associated with the Indian heritage & culture, as the country contributed 85% of the world' sandalwood trade erstwhile. However, lately this has been declining at a fast rate.
- This small tropical tree grows to 20m high with red wood and a variety of dark colors of bark (dark brown, reddish and dark grey).
- Because it is strong and durable, S. album is mostly harvested for its timber.
- **IUCN Red List Status**: Vulnerable

Uses:

- In India, it is also called "Chandan" and "Srigandha". Sandalwood has a special place in Indian tradition where it is being used from cradle to cremation.
- Sandalwood heartwood, which is close-grained, is used for fine furniture and carving. The heartwood and roots also contain 'sandal oil' which is valued for use in perfumes, incense, cosmetics, soaps, and medicines. The bark contains tannin, which is used for dye.
- Sandalwood essential oil has antiseptic, anti inflammatory, antispasmodic and astringent properties.
- It is used in aromatherapy to reduce stress, hypertension and heals wounds and treats skin blemishes.
- Major Growing Areas: In India, sandalwood is mostly grown in Andhra Pradesh, Telangana, Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, and Tamil Nadu.

DAILY ANSWER WRITING PRACTICE

Qns. What do you understand by Environmental Impact Assessment (EIA)? What are the associated challenges and significance of EIA in India? (250 words)

Ans.

Environmental Impact Assessment (EIA) is the study to evaluate and identify the predictable environmental consequences of a proposed developmental project.

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The EIA notification 2006 establishes four stages for obtaining Environmental Clearance.

- **Screening:** to categorize a project by State Level Expert Appraisal Committees (SLEAC) and assess whether a project requires EIA or is exempted from EIA.
- **Scoping:** by the central Expert Appraisal Committee (EAC) and SLEAC to determine comprehensive terms of reference for preparation of EIA report. At this stage NOC is granted by assessing the report on compliance with the prescribed effluent and emission standards.
- **Public Hearing:** Done to address the objections or suggestions of the local people. It is conducted by a committee with District Collector as the Chairperson and other members like officials of State Pollution Control Board (SPCB), representatives of Taluka and Gram Sabha, etc.
- **Appraisal**: The EAC and SLEAC scrutinize the final EIA report and, NOCs and then it is presented to MoEFCC.

Significance of EIA

- EIA reports are a critical component of India's environmental decision-making process. Based on these reports, the Environment Ministry or other relevant regulatory bodies may or may not grant approval to a project.
- The EIA reports are also important to define measures that the project could take in order to contain or offset project impacts.
- For scientific assessment, the law mandates engagement of an accredited independent EIA consultant to undertake the study to ensure objectivity and transparency.
- The public hearing stage gives chance to the locals to raise their concerns thus helps in grassroots governance.

Challenges associated with EIA in India

- Though it seems a very simplified process, but the whole process of EIA encompasses numerous structural and procedural challenges like:

- Lack of awareness among the local people, about the EIA process, their own rights and responsibilities.
- Unavailability of EIA in local languages, which helps in misleading the people.
- Ignorance and corruption among the officials involved in the EIA committee.
- Loopholes: Big MNCs circumvent EIA process by exploiting exemption provisions and loopholes in the law. Also, there is a lack of clarity in overall conductance of the Screening and Scoping processes.
- Lack of Professionals: Lack of availability of quality EIA professionals which lead to errors and omissions in the assessment.

Conclusion

Thus EIA is critical for the environmental decision making process in India. To achieve the Sustainable Development Goals, our policy decisions should be based on scientific analytical assessments keeping a synergy between people and planet.

DAILY QUIZ

1.Consider the following statements:

1. The National Green Tribunal (NGT) is a statutory body.
2. The NGT also contains non-judicial members.
3. The NGT is mandated to dispose of applications or appeals finally within 6 months of filing the same.

Which of the above statements is/are correct?

A. 1 and 2 only
B. 2 only
C. 2 and 3 only
D. 1, 2 and 3

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2. Consider the following statements:
   1. An intermediate black hole is formed by the merger of two black holes.
   2. Gravitational Waves are created when two black holes orbit each other and merge.

Which of the statements given above is/are correct?
   A. 1 only
   B. 2 only
   C. Both 1 and 2
   D. Neither 1 nor 2

3. Consider the following statements:
   1. The Graded Response Action Plan (GRAP) is implemented by the Commission for Air Quality Management (CAQM).
   2. The GRAP is a set of emergency measures to be taken to reduce air pollution.
   3. CAQM is a statutory mechanism to coordinate and oversee diverse efforts to improve air quality in the National Capital Region of Delhi.

Which of the statements given above is/are correct?
   A. 1 only
   B. 2 and 3 only
   C. 3 only
   D. 1, 2 and 3

4. Consider the following statement with respect to Indian Space Association (ISpA):
   1. ISpA will act as a single-window and independent agency on matters related to space technology.
   2. ISpA has been created to protect Indian Space Research Organisation (ISRO) from private competitors in the future.
   3. ISpa will also act as the marketing arm of ISRO.

Which of the statements given above is/are correct?
   A. 1 only
   B. 1 and 3 only
   C. 2 and 3 only
   D. 1, 2 and 3

5. Consider the following statements with respect to Quantum Key Distribution (QKD):
   1. QKD provides a way of distributing and sharing secret keys that are necessary for cryptographic protocols.
   2. In QKD, encryption keys are sent as quantum bits in an optical fibre.
   3. The encryption in QKD will be unbreakable because the data is carried by electrons and it cannot be perfectly copied.

Which of the statements given above is/are correct?
   A. 1 only
   B. 1 and 2 only
   C. 3 only
   D. 1, 2 and 3

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