

BIODIVERSITY AND ENVIRONMENT

Transition from coal to Renewables

CONTEXT: With inflation at unprecedented levels in many countries, concerns over energy security have gained centre stage.

Consumption pattern in India

- Coal is the most important and abundant fossil fuel in India. It accounts for 55% of the country's energy needs.
 - The country's industrial heritage was built upon indigenous coal.
- The India Energy Outlook 2021 report of the International Energy Agency (IEA) said energy use in India has doubled since 2000, with 80% of demand still being met by coal, oil and solid biomass.
- India has installed 162 GW (1 GW is a 1000 MW) of renewable energy capacity which is 41% of the 402 GW of electricity installed.
 - In 2015, India committed to ensuring that 40% of its energy would be from sources by 2030 as part of its Nationally determined contributions (NDCs) .
- **Recent Issues**
 - Pandemic-related disruptions, however, prevented the stock-up of coal.
 - Mining operations were halted to curb the spread of the virus.
 - It has resulted in a demand-supply mismatch.
 - The capacity of a plant does not necessarily translate into the actual power it generates for the grid, some of it is lost owing to external factors such as heat or transmission losses.
 - This applies for both renewable and conventional sources.
 - India's national infrastructure has not been designed to account for so much variability in energy generation.

Benefits Transition from coal to renewables

- **Low maintenance cost:** As compared to the traditional sources of energy like coal-based or oil-based thermal power plants, solar energy has the advantage of almost no requirement of procurement of fuel as well as lesser wear and tear due to lack of movement of parts.
 - Therefore, return on investment is higher in the long run.
- **Sustainable :** Solar energy is a **sustainable source of energy**.
 - Therefore, unlike thermal energy where the government policy is to penalise the usage, renewable energy will always be incentivised to invest additional resources and create more energy capacity.
- **Benefiting the environment :** Renewable energy is a cleaner source of pollution, thus, benefiting the environment in general and reducing pollution and the associated diseases in particular.
- **Atmanirbhar Bharat:** Investment by the private sector in renewable energy would also be helpful in fulfilling the Government's objective of self-reliance. It will also create employment opportunities in the country.
- **Economical**
 - This is also economical for the government and households as decentralised connectivity decreases the Transmission and distribution losses.

Hurdles

- Land acquisition is one of the major challenges in renewable power development. Identification of land with RE potential, its conversion (if needed), clearance from land ceiling act, decision on land lease rent, clearance from revenue department, and other such clearances take time.
- Technological Barriers: Renewable energy technologies are still evolving in terms of technological maturity and cost competitiveness, and face numerous market related, economic and social barriers.

Governments Policies in this direction

- **National Solar Mission (NSM)**
 - In January 2010, the NSM was launched with the objective of establishing India as a global leader in solar energy, by creating the policy conditions for solar technology diffusion across the country
- **Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM)**
 - An ambitious scheme for providing water and energy security to farmers and enhancing their income by making "Annadata also a Urjadata".
- **Solar Parks Scheme**
 - Solar parks provide solar power developers with a plug and play model, by facilitating necessary infrastructure like land, power evacuation facilities, road connectivity, water facility etc. along with all statutory clearances.

- **Green Energy Corridor (GEC)**
 - It aims to facilitate renewable power evacuation and reshaping the grid for future requirements.
- **National coal index (NCI)**
 - This index was created to provide a benchmark for revenue-sharing contracts being executed after the auctions for commercial mining of coal.
 - The NCI had to be introduced as the wholesale price index (WPI) for coal has no component of imported coal.
 - For the last six months, the WPI for Coal has been stable at around 131.
- Other schemes: Various National Schemes like National Action Plan on Climate Change, National Clean Air Programme (NCAP), National Biofuel Policy, etc.

What more needs to be done to make these measures more effective?

- The energy transition will be long and expensive. The fossil fuel-based economic system will have to be redesigned and, in parts, rebuilt for clean energy to achieve scale.
 - The process will take decades and require massive capital infusion.
- The financial community has to be sensitised to the need of increasing domestic coal production to meet the growing energy demand.
- There is a need to strengthen the steps to promote domestic manufacturing in the Renewable Energy sector (Atma Nirbhar Bharat Policy).
 - Procurement and use of domestically manufactured solar PV cells and modules have to be mandated for all entities.
- A single point executive should be appointed to align the interests of the multiple stakeholders (governments, regulators, farmers) involved in this process and to develop common rules and standards.
- Transition to renewable energy would depend a lot on inculcating energy-efficient behaviour such as operating ACs, both for commercial and domestic usage, more flexibly through the day and opting for energy-efficient products.
- The path to achieving 500 GW of renewables needs to be gradual, ensuring an orderly transition as coal is unavoidable in the near future.
 - Reducing coal imports and increasing domestic production of coal needs focused attention.

PRELIMS

1. National Institutional Ranking Framework (NIRF), 2022

CONTEXT: The National Institutional Ranking Framework (NIRF) of universities and colleges for the year 2022 was recently released by the Ministry of Education (MoE).

More about the news

Key Findings

- Overall Rankings:
 - IIT-Madras topped the overall category for the fourth consecutive year, and in engineering for the seventh straight year.
 - The Indian Institute of Science (IISc), which topped the latest round of QS rankings among Indian institutes, was placed second in the NIRF rankings like last year.
 - The slots from third to seventh have been secured by IIT-Bombay, IIT-Delhi, IIT-Kanpur, IIT-Kharagpur, IIT-Roorkee and IIT-Guwahati, in a repeat of 202 followed by AIIMS and Jawaharlal Nehru University (JNU).
- University Category:
 - The Indian Institute of Science (IISc) Bengaluru has topped the nation in the University category.
 - JNU is ranked second this year.
 - Jamia Millia Islamia has improved its position from rank 6 last year to rank 3 by replacing Banaras Hindu University which has now slipped to rank 6.
- New IITs:
 - Apart from the dominance of older institutes, the performance of newer IITs stands out in the latest round of the rankings, which has entered its seventh year.
 - IIT-Jodhpur improved its rankings from 43 to 30,
 - IIT-Mandi rose to 20 from 41,
 - The Palakkad and Tirupati campuses broke into the top 100 categories (overall), managing 68th and 56th spots.
- Private institutions:

- The top-ranked private institutions are Amrita Vishwa Vidyapeetham (16), Manipal Academy of Higher Education (17), Vellore Institute of Technology (18), Birla Institute of Technology & Science-Pilani (32), Kalinga Institute of Industrial Technology (34), S.R.M. Institute of Science and Technology (36), Amity University (42).
- Medical education:
 - AIIMs occupied the top slot in the medical education category for the fifth straight year.
 - PGIMER Chandigarh and Christian Medical College, Vellore have retained the second and third positions, respectively.
- Management:
 - IIM-Ahmedabad remained the best institute in the management segment.

2. Expansion of SCO

CONTEXT: Iran and Belarus are likely to be the two newest additions to the Shanghai Cooperation Organisation (SCO) grouping. And, Varanasi will be declared the “Cultural and Tourism Capital” of SCO.

More about the news

- **Iran and Belarus:**
 - 2021 SCO summit in Dushanbe agreed for Iran to join.
 - Belarus has also begun the membership process for SCO.
 - i. The legal process regarding Belarus' application for SCO membership will soon start, and the accession of Belarus will require the consensus of all member states.
 - The upcoming SCO Summit will be held in Samarkand, Uzbekistan where the issues with the expansion of the group will be discussed among other issues.
 - India will host the SCO summit in 2023.
- **Varanasi - Cultural and Tourism Capital of SCO:**
 - The holy city of Varanasi, showcasing India's culture and traditions over the ages, will be declared the first “Cultural and Tourism Capital” of the Shanghai Cooperation Organisation for 2022-23.
 - The new initiative will come into force after the Samarkand summit.
 - It is a new initiative by the eight-member organisation to promote people-to-people contacts and tourism among the member states.
 - The title of ‘Cultural and Tourism Capital’ will be rotated among the member states.

3. Diphtheria, Tetanus and Pertussis (DTP3) Vaccine

CONTEXT: Recently, UNICEF in a study said that three million children in India have missed DPT doses in 2020 because of a pandemic.

About Diphtheria, Tetanus and Pertussis (DTP3) vaccine

- The DPT vaccine or DTP vaccine is a class of combination vaccines against three infectious diseases in humans: diphtheria, pertussis (whooping cough), and tetanus.
- The vaccine components include diphtheria and tetanus toxoids and either kill whole cells of the bacterium that causes pertussis or pertussis antigens.
- Immunisation is an essential component for reducing under-five mortality: Immunisation coverage estimates are used to monitor coverage of immunisation services and to guide disease eradication and elimination efforts. It is a good indicator of health system performance.

Major findings of the study

- The DPT vaccine is considered a marker for immunisation coverage across countries.
 - At 81 per cent now it represents the largest sustained decline in childhood vaccinations in 30 years.
- **Downfall:** The percentage of children who globally received three doses of the vaccine against diphtheria, tetanus and pertussis (DTP3) fell five percentage points between 2019 and 2021 owing to conflict and the pandemic.
- **Measles vaccine:** The coverage of the first dose of the measles vaccine dropped to 81 per cent in 2021, the lowest since 2008.
 - Over 24 million children missed out on their first measles vaccine dose in 2021 over five million more than in 2019.
 - A further 14.7 million did not receive their second doses.
- **Polio vaccine:** compared with 2019, 6.7 million more children missed out on the third dose of the polio vaccine.
- **HPV vaccine:** 3.5 million missed the first dose of the HPV vaccine which protects girls against cervical cancer later in life.

- East Asia and Pacific region: Vaccine coverage dropped in every region, with the east Asia and Pacific region recording the steepest reversal in DTP3 coverage, falling nine percentage points in just two years.
- Low- and middle-income countries: UNICEF said that 18 million of the 25 million children who did not receive a single DTP dose in 2021 belong to low- and middle-income countries with India, Nigeria, Indonesia, Ethiopia and the Philippines recording the highest numbers.
 - Uganda and Pakistan fared well where Uganda maintained high levels of routine coverage while rolling out targeted Covid-19 vaccination programmes.
 - Pakistan returned to pre-pandemic levels of coverage thanks to government interventions such as catch-up efforts.
- Poorest performers: Among countries with the largest relative increases in the number of children who did not receive a single vaccine between 2019 and 2021 are Myanmar and Mozambique.
- Globally: 25 million children missed out on one or more doses of the DTP vaccine through routine immunisation services in 2021 alone.
 - This is two million more than those who missed out on them in 2020 and six million more than in 2019.

4. Female Labour Force Participation

CONTEXT: Recently, the Vice President of India expressed concern over low female participation in the formal labour force in India.

Key Points about Female Labour Force Participation

- It is a driver of growth and therefore, participation rates indicate the potential for a country to grow more rapidly.
- The relationship between women's engagement in the labour market and broader development outcomes is complex.
- Status in Developing Countries:
 - The participation of women in the labour force varies considerably across developing countries and emerging economies, far more than in the case of men.
 - In the Middle East, North Africa and South Asia, less than one-third of women of working age participate, while the proportion reaches around two-thirds in East Asia and sub-Saharan Africa.
 - This variation is driven by a wide variety of economic and social factors including economic growth, increasing educational attainment, falling fertility rates and social norms.
 - Besides the labour market gender gaps are more pronounced in developing countries, and the disparity is highest in South Asian countries.

5. Mission Shakti

CONTEXT: Recently, the Ministry of Women and Child Development has issued detailed guidelines for the 'Mission Shakti' scheme.

Mission Shakti

- **About:**
 - It is an integrated women empowerment programme as an umbrella scheme for the safety, security and empowerment of women for implementation during the 15th Finance Commission period 2021-22 to 2025-26.
 - The norms of 'Mission Shakti' will be applicable with effect from 01.04.2022.
- **Aim & Objectives:**
 - Strengthening interventions for women's safety, security and empowerment.
 - Realise the Government's commitment to "women-led development" by addressing issues affecting women on a life-cycle continuum basis and by making them equal partners in nation-building through convergence and citizen-ownership.
 - Make women economically empowered, exercising free choice over their minds and bodies in an atmosphere free from violence and threat.
 - Reduce the care burden on women and increase female labour force participation by promoting skill development, capacity building, financial literacy, access to microcredit etc.
 - Making people aware about Government schemes and programmes as well as legal provisions to fight social evils like dowry, domestic violence, Sexual Harassment at Workplace and to promote gender equality etc.
 - Create awareness among masses for inducing positive behavioural change towards women and girls.

- To prevent gender-biased sex selective elimination; to ensure survival, protection, education and development of the girl child.

ANSWER WRITTING

Q. Analyse the distinguishing features of the notion of Right to Equality in the Constitution of India and the USA. (150 words)

Introduction

Both the United States and India are the largest democratic countries in the world, based on federalism, in their political structure. Democracy can only thrive and flourish where the individuals in society are treated equally and without discrimination. Thus, it was necessary to incorporate provisions in the Constitution to remove the hurdle of existing social and economic inequalities and enable the diverse communities to enjoy the rights and liberties guaranteed under the Constitution.

Body

The right to equality means the absence of legal discrimination on grounds of caste, race, religion, sex, and place of birth and ensures equal rights to all citizens.

- **Right to Equality in India:** In India, Chapter III named as “Fundamental Rights” was added in the Constitution by the Constituent Assembly. The Constitution follows both the British model of ‘Equality before Law’ and American model of ‘equal protection of law’ (Article 14). It also provides for both civil-legal as well as socio-economic equality. It also highlights substantive equality. The Constitution also provides for affirmative action to ensure equality (Article 16). It focuses on ensuring equality of outcomes along with equality of opportunity. The right also prevents discrimination and abolishes untouchability (Article 17).
- **Right to Equality in the US:** The original Constitution did not prevent discrimination. The US derived Right to Equality from Declaration of Rights and the Bill of Rights. It was inserted in the Bill of Rights through fourteenth Amendment in year 1868. The US follows the concept of ‘equal protection of law’ which highlights the equal treatment under equal circumstances. The right majorly emphasises on civil and legal equality.

Conclusion

The Right to Equality is considered a basic feature of both the Constitutions and plays a key role in achieving social and economic justice in our society where upliftment of certain classes is considered necessary for our country to flourish. The emphasis is on the fundamental unity of individuals by providing equal opportunities and treatment to all.

MCQs

- 1) The National Institutional Ranking Framework (NIRF) has been launched by which ministry?
 - a. Ministry of Finance
 - b. Ministry of Housing and Urban Affairs
 - c. **Ministry of Education**
 - d. Ministry of Rural Development
- 2) Consider the following statements regarding Shanghai Cooperation Organisation:
 1. It was launched as Shanghai Five in 1996.
 2. Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan were members of the Shanghai Five
 Which of the above statement(s) is/are correct?
 - a. 1 only
 - b. 2 only
 - c. **Both 1 and 2**
 - d. Neither 1 nor 2
- 3) Consider the following statements regarding Mission Indradhanush:
 1. Mission Indradhanush was launched in 2014 as a special drive to expand full immunisation coverage in India.
 2. Also pregnant women are administered the tetanus vaccine, ORS packets and zinc tablets
 3. Children across socio-economic, cultural and geographical spectrums in India are being immunised under this program.
 Which of the above statement(s) is/are correct?
 - a. 1 and 2 only
 - b. 2 and 3 only
 - c. 1 and 3 only
 - d. **1, 2 and 3**
- 4) Consider the following statements about Mission Shakti:
 1. It is an integrated women empowerment programme as an umbrella scheme for the safety, security and empowerment of women
 2. Recently, the Ministry of Women and Child Development has issued detailed guidelines for the ‘Mission Shakti’ scheme.
 3. ‘Mission Shakti’ was launched during the 15th Finance Commission period.
 Which of the above statement(s) is/are correct?
 - a. 1 and 2 only
 - b. 1 and 3 only
 - c. 3 only
 - d. **All are correct.**
- 5) Consider the following statements about Asiatic Black Bears:
 1. The Asiatic black bear is omnivorous
 2. It has been categorised as Near Threatened under the IUCN Red List.

Which of the above statement(s) is/are correct?

- a. **1 only** b. 2 only c. Both 1 and 2 d. Neither 1 nor 2

6) With reference to the Lake Urmia, consider the following statements:

1. It is located in between Azerbaijan and Armenia and acts as the boundary between the two countries.
2. It is the world's largest hypersaline lake and is home to the humpback angler fish, an endangered species.

Which of the above statement(s) is/are correct?

- a. 1 only
b. 2 only
c. Both 1 and 2
d. **Neither 1 nor 2**

7) With reference to Kala Azar, consider the following statements:

1. Leishmaniasis is caused by protozoan parasites which are transmitted by the bite of infected female phlebotomine sandflies.
2. Leishmaniasis is also linked to environmental changes such as deforestation, building of dams, irrigation schemes and urbanization.

Which of the above statement(s) is/are correct?

- a. 1 only
b. 2 only
c. **Both 1 and 2**
d. Neither 1 nor 2

8) With reference to economy, consider the following statements:

1. A soft landing is a cyclical slowdown in economic growth that avoids recession of a country.
2. Reverse Currency War occurs between two trading partners are deliberately pursuing policies to strengthen the values of their currencies.

Which of the above statements is/are **incorrect**?

- a. 1 only
b. 2 only
c. **Both 1 and 2**
d. Neither 1 nor 2

9) With reference to the revised Companies Auditors Report Order, consider the following statements:

1. The new order focuses on property, plants, equipment and intangible assets.
2. Reporting of proceedings under the Benami Transactions (Prohibition) Act, 1988 is also included in the order.
3. Auditors are required to report on compliance with RBI directives and the provisions of the Companies Act, 2013, to deemed deposits.

Which of the above statements is/are correct?

- a. 1 and 2 only
b. 2 and 3 only
c. 1 and 3 only
d. **1, 2 and 3**

10) With reference to Green Open Access Rules 2022, consider the following statements:

1. Industrial and corporate customers with a demand of less than 100 kilowatts can set up their own solar plants and wheel power to their establishment.
2. Cross subsidy surcharge and additional surcharge shall not be applicable, if green energy is utilized for production of green hydrogen and green ammonia.

Which of the above statements is/are correct?

- a. 1 only
b. **2 only**
c. Both 1 and 2
d. Neither 1 nor 2