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Current Affairs

Prepared by: Maharana Sibasankar

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27. Weak El Nino conditions is going to develop in the Pacific this winter

News

According to an India Meteorological Department (IMD) forecast there is a strong possibility of weak El Nino conditions developing during the current winter season.

- **IMD Observations:**
 - Equatorial sea surface temperatures across most the Pacific Ocean show an increasing trend. There is a mild El Nino -above 0.5 degree warming – in the western Pacific Ocean
 - The IMD forecasts that the ongoing winter season would be slightly warmer than usual in most parts of India
- **Concerns over warm winter**

Higher warmer weather conditions during winter months is a concern as it may adversely affect wheat crop which is the principal crop of the Rabi season

- **What is El Nino?**
 - The term El Niño refers to the large-scale ocean-atmosphere climate interaction associated to a periodic warming in sea surface temperatures across the central and east-central Equatorial Pacific.
 - El Nino during winter results in development of warm conditions in India. During the summer season, it leads to dry conditions and deficient monsoon

28. Beyond Binaries

Article:

The article analyses the plight of transgender community in India

- **Who are transgenders?**
 - Transgenders are people whose gender identity or expression does not match the sex they were assigned at birth.

- They are referred to as transsexuals if they desire medical assistance in order to make the transition from one biological sex to another.
- ***Transgender community in India:***
 - As per the Census of 2011, the total population of Transgender in India is 4.9lakh
 - There are various types of transgender communities in India- Hijras, Eunuchs, Kothis, Aravanis, Jogappas, Shiv-Shakthis etc.
- ***Problems faced by transgender communities in India:***
 - Forced to leave parental home: Boys who do not conform to the societal gender construct are unaccepted and forced to leave home live in vulnerable conditions
 - Lack of educational facilities: Transgender children are forced to drop out of schools as Indian schools remain unequipped to handle children with alternative sexual identities.
 - Discrimination: Transgenders are socially excluded, mistreated and discriminated in terms of employment, justice, health etc.
 - Economic hardships: They are economically marginalised and forced into professions like prostitution and begging for livelihood.
 - Gender-based violence: Transgenders are often subjected to sexual abuse and rape
 - Health issues: The community remain highly vulnerable to sexually transmitted diseases like HIV AIDS. According to a recent UNAIDS report, the HIV prevalence among transgenders in India is 3.1% (2017).
- ***Steps taken:***
 - In 2009, in a move to improve voter registration of transgender people, the Election Commission issued directions to all provinces to amend the format of the registration forms to include an option of "others".
 - In 2014, the Supreme Court in National Legal Services Authority Vs. Union of India recognised the transgenders as the "Third Gender"
 - Transgender Persons (Protection of Rights) Bill, 2016: The bill seeks to bring social, educational and economic empowerment to the transgender community
 - Increasing HIV services to the community: The National Aids Control Organisation (NACO) reported that 2,40,000 hijras were provided with HIV prevention and treatment services in 2015, compared to 1,80,000 in 2014

Looking Ahead:

A multi-prolonged approach with focus on public awareness campaigns, generating avenues for dignified employment, gender sensitisation is needed for socio-economic empowerment of the transgender community in India

29. The boundaries of ethics

News:

In November 2018, Chinese researcher He Jankui claimed to have made world's first gene edited babies, a pair of twin girls, genetically edited with CRISPR/cas9

Facts

- Researcher He have used a gene-editing technique, known as CRISPR, to artificially induce a mutation in human cells and make them resistant to HIV.
- The research work has been subjected to wide criticism for being unethical, unnecessary and risky
- ***What is Gene Editing?***

Gene editing is a technique through which genes can be deleted or replaced from one's genome (the genetic material of an organism).

- ***What is CRISPR/Cas 9 technology?***
 - CRISPR (stands for "Clustered Regularly Interspaced Short Palindromic Repeat") is the most widely used technique of gene editing. It allows for genes to be deleted, modified, or inserted in such a way that the altered gene is always inherited in the offspring.
 - The CRISPR system has **two primary components**: The **Cas9 protein** and a molecule called a **guide RNA**.
- ***How does it work?***
 - The guide RNA directs Cas9 to a specific gene, where Cas9 then cuts DNA at the specified location.
 - Once the DNA is cut, a gene can be modified at that location. The cut is then repaired by enzymes already present in cells.
 - In the gene-edited baby case, the researcher had targeted a gene which produces a protein on the surface of cells called CCR5. The HIV virus utilizes this protein to attach to and infect the cell.
 - CCR5 was then genetically changed so that HIV can no longer infect cells, thus making the babies resistant to the virus.
- ***Health Concerns involved with embryo editing:***

- **Non-target effects:** When genetic modifications are made, other non-intended edits can occur at other locations of the genome. Modifications at wrong place can lead to developmental problems such as abnormal organ development, metabolic problems, cancer in later life etc.
- **Mosaicism:** Mosaicism is a condition in which cells within the same person have a different genetic makeup. For example, due to gene editing, a baby might have liver cells that contain edited gene and heart cells that have the normal version which may lead to dire complications.

Ethical Concerns involved:

1. Social Disparity: A major concern is that gene editing being an expensive technology, will be used only by the rich to genetically engineer a baby which will further aggravate social disparity.
2. Consent Process: Critics have raised concerns about undue inducement to parents to take part in embryo editing researches. Paying research participants, a large amount of money distorts their assessment of the risks and benefits and manipulates free and informed consent.
3. Super Humans: There have been concerns over intentional modification of the human genome so as to produce individuals or entire groups endowed with particular characteristics and required qualities.
4. Effect on next generation: Editing 'germ line' (or reproductive) cells of healthy humans is considered unethical as it could mean introducing unknown and potentially harmful changes in subsequent generations or even the entire population

30. Antibiotic colistin

News:

The government of India has proposed a ban on the use of antibiotic Colistin that is widely used in the meat and poultry industry in India to make animals grow faster.

Facts:

- Food Safety and Standards Authority of India, and Ministry of health and family welfare and the Drug Controller General of India recommended the ban on Colistin.
- The random use of Colistin in farming increases the chance that bacteria would develop resistance to the drug, making it useless when treating patients.
- The misuse of antibiotics in food-animal production is one of the key causes of antimicrobial resistance (AMR). It not only spreads resistant bacteria but is also carried into human food stream.

- The European Union banned Colistin in 2006, Malaysia and China joined the list this year in 2018 and do not permit the use of the antibiotic, both for therapeutic and growth promotion in animals.

About Colistin

- Colistin is a polypeptide antibiotic obtained from the group of polymyxins. This antimicrobial is mainly used in veterinary medicine in the treatment of intestinal diseases as well as other infections.
- Colistin was effective in treating infections caused by **Pseudomonas, Escherichia, and Klebsiella species**
- It's being used increasingly as a 'last-line' therapy to treat infections caused by multidrug-resistant **Gram-negative bacteria**, when essentially no other options are available.
- Antibiotics help the chickens remain disease free or gain weight quickly.

What Does Colistin resistant mean

- If an antimicrobial no longer works against certain bacteria, these bacteria develop resistance to the active ingredient.
- Colistin resistance comes into play if the minimum concentration of Colistin as the active ingredient for inhibiting the growth of a bacteria type is above the defined threshold value. **Escherichia (E.) coli and Salmonella** are considered resistant.

Additional Info:

- **National Programme on Containment of Antimicrobial Resistance**
- It was launched under the aegis of the National Centre for Disease Control (NCDC) under the 12th Five Year Plan (2012 – 2017).
- The objectives of this programme were to establish a laboratory-based AMR surveillance system of 30 network laboratories, generating quality data on AMR for pathogens of public health importance
- NCDC is the responsible for the implementation of the programme.
- **Seven priority bacterial pathogens** are – Klebsiella spp., Escherichia coli, Staphylococcus aureus, and Enterococcus species, Pseudomonas spp, Acinetobacter spp., Salmonella enterica serotypes Typhi and Paratyphi.

31. MHA releases booklet on cyberbullying

News:

Ministry of Home Affairs (MHA) releases booklet "Cyber Dost" on cyber bullying for teens

Facts:

- The English booklet deals with a variety of subjects like cyber threats, cyber bullying, cyber grooming, online gaming and email fraud among others
- It advises youngsters not to forward or share any message on social media or messaging App before confirming its authenticity from other sources, not to share any personal details, including date of birth, passwords, photos and other details as well as keeping a stranger at arms-length.
- Cyber Dost advises, “never install unwanted software and Apps like dating App, online games from unknown sources
- As per a report of the Indian Computer Emergency Response Team (CERT-In), there were over 53,000 such cases reported last year.
- **Cyber bullying** is defined as intentionally harassing someone with rude, mean and hurtful messages;
- **Cyber Grooming** means where someone builds an emotional bond with children through social media with an intention to gain their trust for sexually exploiting them.
- **Information Technology Act, 2000** was enacted to protect the citizens from cybercrime
Indian

About Computer Emergency Response Team (CERT-In)

- CERT-In is the national nodal agency for responding to computer security function under Ministry of Electronics and Information Technology.
- In the recent Information Technology Amendment Act 2008, CERT-In has been designated to serve as the national agency to perform the functions in the area of cyber security:

32. Soyuz is heading for ISS

News:

The Soyuz spacecraft (Russian) has taken off from Kazakhstan for a six-and-a-half-month mission to the International Space Station (ISS).

Facts:

- The Soyuz rocket carrying **Russian, American and Canadian** astronauts took off from Kazakhstan for six-and-a-half-month-long mission to the International Space Station
- Soyuz rocket carrying the **first Russian woman (Oleg Kononenko) is to fly in space.**
- The Soyuz became the only means of reaching the ISS since the United States retired the space shuttle in 2011

- The Soyuz is the first successful manned mission to the space lab ISS since an aborted Soyuz launch in October 2018.
- The **American female astronaut Karen Nyberg** remained in orbit for six months in 2013.

About Soyuz

- Soyuz is the only vehicle that can take crews to the ISS currently.
- Russia is going to lose that monopoly in the coming years when the **the SpaceX's Dragon and Boeing's Starliner crew capsules** will arrive.
- **About International Space Station**
 - The International Space Station(ISS) is a large spacecraft orbiting some 240 miles (390 kilometres) above Earth's surface.
 - The ISS is built by 15 different countries and overseen by 5 space agencies, among them NASA, Russia's Roscosmos agency, the European Space Agency, the Canadian Space Agency and the Japan Aerospace Exploration Agency
 - ISS is about four times as large as the **Russian space station Mir and five times as large as the U.S. Skylab.**

33. 5.8-tonne GSAT-11 is ready for launch

News:

GSAT-11 is ready for lift-off on a European Space Agency rocket from French Guiana.

Facts:

- Gsat-11 is a high-throughput communication satellite meant to provide **multi-spot beam broadband connectivity** over India's mainland and nearby islands
- **A spot beam** is a satellite signal that is especially concentrated so that it covers only a limited geographical area. The narrower the beam greater the power.
- There is another communication **satellite GSAT-20** which is to be launched next year
- Launch of four satellites (**GSATS 19, 29, 11, 20**) will provide the country **broadband connectivity** of over 100 gigabits per second by 2019." Of the four, two satellites **Gsat-19 and Gsat-29 have already been launched.**
- The HTSs will be the backbone of India's Internet-based programmes and services — such as Digital India, BharathNet for rural e-governance, and commercial and public sector VSAT Net service providers.
- Along with GSAT-11, **South Korea's GEO-KOMPSAT-2A**, a **meteorology satellite** is also launched.

Big push for communication

GSAT-11 will play a vital role in providing broadband services across the country. It will also provide a platform to demonstrate new generation applications

- Launching from French Guiana between **2 a.m. & 3 a.m.** IST on Dec. 5

- Will be lifted to space on a **European Ariane 5 rocket**

- Mass 5,854 kg, cost **₹1,200 crore**, including the foreign launch

- Will rest in over the 74°E longitude, nearly **36,000 km** away



- Will carry **40 transponders** in the Ku /Ka bands

- Built to provide throughput data rate of **16 gbps**

- Expected to work for **15 years**

APPLICATIONS:

To meet unprecedented data demands: Greater capacity and high data rates over regions due to use of the spot beam technology

Supporting Bharat Net connectivity: Substantial bandwidth coverage to gram panchayats for supporting e-governance and other platforms

VSAT terminals: Capacity platform to support a huge subscriber base

Unlock new applications: Reaching out to different strata of society through Digital India platform

34. Services agree on Permanent Chair

News:

According to Chief of the Naval Staff, the three services- Army, Navy and Air force have agreed on the appointment of a Permanent Chairman of the Chiefs of Staff Committee (CoSC)

What is CoSC?

1. The CoSC is like a forum where head of three services come together to discuss important matters related to any military issue or any task given by the defence ministry.
2. At present, the senior-most of three services acts as the ex-officio of CoSC till the time he retires.

About Permanent Chairman of the Chiefs of Staff Committee (CoSC)

The permanent chairman, CoSC will be a four-star officer, who will be equivalent to chiefs of army, air force and navy.

Role and functions of Permanent Chairman of the Chiefs of Staff Committee (PCCoSC)

1. The PCCoSC will be a single-point military adviser to the government.
2. The officer would look into joint issues of the services like training of troops, acquisition of weapon systems and joint operations of the services

3. He would also be in-charge of the tri-services command at Andaman and Nicobar Islands, the strategic command of nuclear weapons and the proposed cyber and space command.

Background:

The Naresh Chandra Task Force (2011) established to review the national security management system, had recommended the creation of permanent post of chairman, chiefs of staff committee (CoSC).

5th Dec 2018

35. Qatar to withdraw from OPEC

News: Qatar decides to withdraw from the Organization of the Petroleum Exporting Countries (OPEC) from January 2019

Reasons for withdrawal:

- OPEC mainly governs oil production of its members and influences global oil prices, but oil plays a small role in Qatar's economy, which now wants to focus on liquefied natural gas (LNG) development, which is mainstay of Qatar's economy.
- Saudi Arabia is OPEC's largest oil exporter has imposed a land and air blockade on Qatar since 2017 accusing Qatar of supporting terrorist groups. This might be another reason behind Qatar's withdrawal from Saudi influenced OPEC.

Effect of Qatar's withdrawal from OPEC:

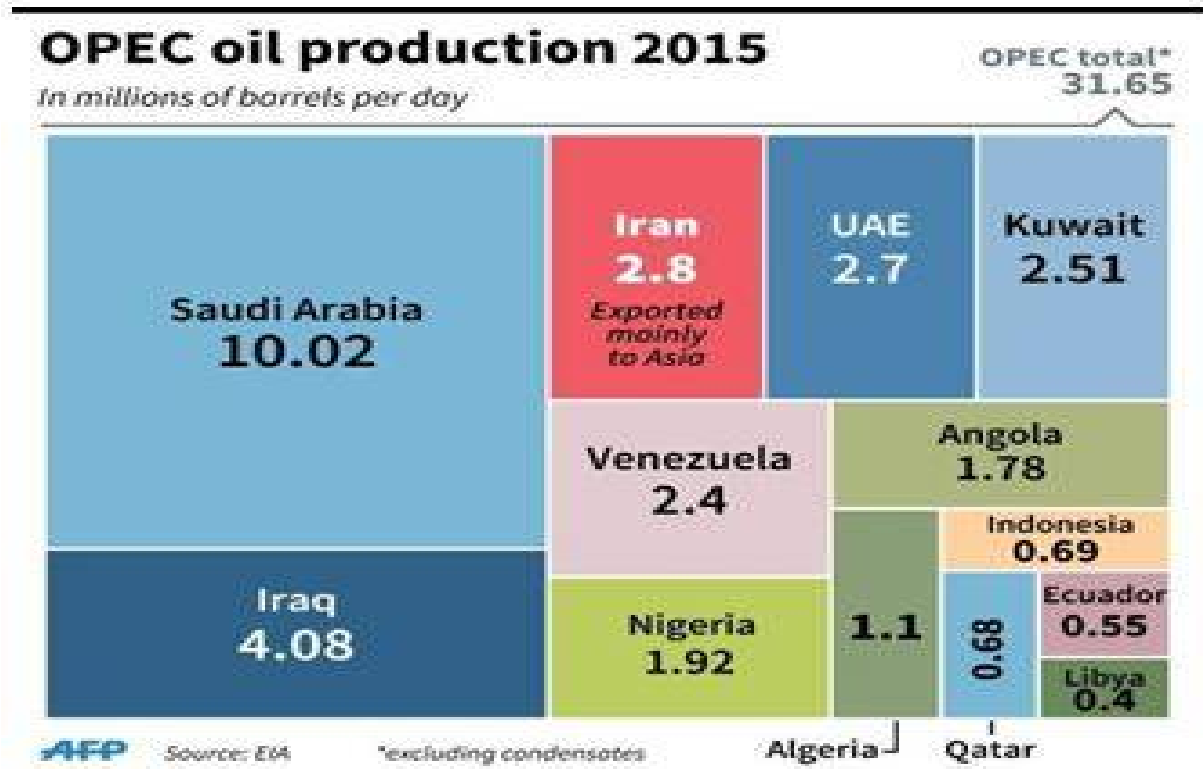
- The feud between Qatar and OPEC has been brewing since 2017 and Qatar's exit from OPEC **signals a continuation of the middle-east crisis.**
- Qatar's exit would have a psychological impact and **could prove an example to be followed by other members** in the wake of unilateral decisions of Saudi Arabia
- Qatar's withdrawal from OPEC might also **cripple the effectiveness of GCC** and its regional stability objective, which also has Saudi influence and may eventually trigger withdrawal of Qatar from GCC.

Gulf Cooperation Council (GCC) is a political and economic alliance of six Arabian countries Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE, which promotes regional security and development, an objective which coincides with OPEC.

OPEC:

- OPEC is a permanent intergovernmental organization and world's leading oil producing bloc of **15 oil-exporting developing nations**, founded in Baghdad, Iraq, in 1960

- Its members include Iran, Iraq, Kuwait, Saudi Arabia, Venezuela, Qatar, Libya, UAE, Algeria, Nigeria, Ecuador, Gabon, Angola, Equatorial Guinea and Congo
- Its objective is to **coordinate and unify the petroleum policies of its Member Countries and ensure the stabilization of oil markets** in order to secure an efficient, economic and regular supply of petroleum and a steady income to producers and a fair return to investors.



Importance of OPEC:

- OPEC members produce **more than a third of global oil supply** .
- By increasing or reducing oil production OPEC **influences prices of oil in the international market**.
- Other major non-OPEC oil producers, like Russia, also collaborate with OPEC in its decisions, which widens the influence of OPEC's policies

Issues with OPEC:

- **Monopolistic functioning:** OPEC is an oil producers cartel which creates monopoly in global oil supply to achieve lower production and yet higher revenue, thus affecting consumers like India.
- **Non-democratic in functioning:** Decisions of OPEC are largely unilateral as they are guided by Saudi Arabia, the de-facto head of OPEC, highlighting its non-consensual and non-democratic functioning.

- **Lack of uniformity among members:** Recently, Saudi Arabia pushed for reduced supply of oil by OPEC to increase oil prices but Iraq, Iran, Libya and Venezuela wanted increased oil production, to support their social sectors and capital investments financially.
- **Inability to control errant members:** OPEC was unable to stop Iran, who recently sold oil for as little as \$25 a barrel, thus highlighting the ineffectiveness of the bloc.
- **Single source of income:** Over-dependence on oil is the major problem of OPEC countries.
- **Fluctuating prices:** Untimely fluctuation in global oil prices affects incomes of OPEC countries which:
 - o Erodes investor confidence, further draining them of resources
 - o Threatens internal stability of other OPEC members like Nigeria, Venezuela and Indonesia face social unrest if prices go lower, thus endangering the cartel's cohesion and viability
 - **Social and political struggles:** OPEC's member countries are often embroiled in challenging social and political struggles; like civil war in Libya, ongoing conflicts in Iraq, and recession and humanitarian issues in Nigeria

Diminishing relevance of OPEC:

- **Withdrawal of western support to OPEC:** With the withdrawal of West's support to OPEC and its reduced dependence on OPEC, its relevance has decreased.
- **Oil inventories:** Many OPEC markets, like OECD countries and India, have created their own strategic oil reserves, which gives them cushion against OPEC's price manoeuvres, by delaying the effect of price rise, which is supplemented by non-OPEC countries' production.
- **Non-OPEC induced price fluctuations:** US oil production increases whenever global oil prices increase beyond certain level, thus offsetting OPEC's increment in oil prices as happened in 2015 when U.S. oil exports increased dramatically.
- **Technological advancement and discovery of other energy resources in the West:**
 - o **US shale production:** Historically, OPEC exerted strong influence on crude oil prices due to its monopoly but, of lately, there is oversupply of U.S. shale gas, which competes with OPEC oil
 - o Discovery of other resources of energy like gas hydrates, coal bed methane reduces the monopoly of oil
 - **Renewable sources of energy:** OPEC's relevance is further hampered by renewable energy sector, notably solar, wind power which is becoming increasingly important due to climate changes and advancements in "green" technology.

India and OPEC:

- **Inter-dependence:** About 85 per cent of Indian crude oil imports come from OPEC nations and by 2040, out of total increase in global oil demand, around 40% demand would be created by India, which highlights importance of OPEC and India for each other.
- **India's macro-economic stability:** Any change in oil prices by OPEC directly affects India's oil import bill and current account deficit thus affecting macro-economic stability of India.
- **Oil prices affect Indian expatriates:** Slowing OPEC economies and member country policies, like Saudi Arabia's nationalisation or 'Nitaqat' system (transition to a nearly all-Saudi workforce by 2030), hurt incomes and job security of Indian expatriates in gulf.
- **Integrated energy investment plan:** Stabilisation of oil prices is good for both India and OPEC for long term growth and planning. India should develop a long term integrated energy investment plan with OPEC countries, like between China and Saudi Arabia, to:
 - o Ensure stable and uninterrupted flow of oil during both peace and crises.
 - o Oil exporting countries would invest money in India's refinery sector, thus ploughing money back and generating employment.
 - **Oil buyer's club:** India and China, OPEC's major oil importers, are deliberating upon establishment of an 'oil buyer's club' that can negotiate better terms with OPEC sellers to cut dominance of the oil block

Implications:

- Withdrawal of Qatar will not make any major change in OPEC as Qatar produces less than 2% of OPEC's oil output, but it **might severely dent the reputation of OPEC**, at a time when it is facing criticism for being unable to control oil prices, and it may trigger other countries to also quit from the bloc.
- It also **signals growing divide between two Arab blocs**, one led by Saudi and its allies on one hand and independent regional players like Qatar on the other hand.
- OPEC should **insulate itself from being affected by larger geo-political schisms** and focus on the objective of stabilization of oil markets and regional development.
- **OPEC's membership should be widened** to include other major players like Russia, which has shown interest by aligning with OPEC's policies, and smaller countries like Azerbaijan, Kazakhstan, Malaysia, Mexico in order to ensure global balance in oil production and price volatility.

36. Disabilities Act: States going slow on roll-out, says study

News

A study conducted by the Disability Rights India Foundation (DRIF) on the implementation of the Rights of Persons with Disabilities (RPWD) Act, found that only 10 states have notified rules under the Act

About the study

1. The study was conducted in collaboration with the National Centre for Promotion of Employment for Disabled People (NCPEDP) and National Committee on the Rights of Persons with Disabilities (NCRPD)
2. The study was conducted across 24 states

Highlights of the study

1. 58.3% of the states have **not notified state rules** under the RPWD Act, 2016
2. Ten States including Bihar, Chandigarh, Manipur, Meghalaya, Odisha, Telangana, Tamil Nadu and West Bengal have notified the State rules
3. 79.2% of the States have **not constituted the funds for implementation** of the RPWD Act.
4. 62.5% of the States have **appointed Commissioners** for Persons with Disabilities
5. 58.3% of the States have **not notified Special Courts in the districts for trying offences** under the Act
6. 87.5% have **not appointed a Special Public Prosecutors** as mandated by the law
7. Only three States have constituted Advisory Committees, comprising of experts, to assist the State Commissioners
8. Out of 24 states, Madhya Pradesh ranked the highest, followed by Odisha, Meghalaya and Himachal Pradesh.
9. Andaman and Nicobar Islands and Jammu and Kashmir ranked the lowest

About Rights of Persons with Disabilities (RPWD) Act, 2016

1. The Act seeks to enhance the Rights and Entitlements of Divyangjan and provide effective mechanism for ensuring their empowerment and social inclusion
2. The Act brings Indian law on Disabled in line with the United National Convention on the Rights of Persons with Disabilities (UNCRPD), to which India is a signatory
3. 21 disabilities are covered under the Act
4. According to the Act, the state rules are to be notified by all States within six months of the Act coming into force

37. Accounting methods of climate fund questioned

News:

In a paper titled "3 Essential "S" of Climate Finance- Scope, Scale and Speed: A Reflection", submitted at the COP24, the Indian Finance Ministry has questioned climate finance values being reported by the developed countries as having being transferred to developing countries.

Various issues highlighted in the paper:

1. Inconsistency in definition: Definitions of climate change finance used in various reports by developed countries were not consistent with the provisions of the United Nations Framework Convention on Climate Change (UNFCCC)
2. Low Finance: The finance provided by the developed nations till date is far lower than that originally promised by developed nations. According to the paper, the growth in the reported climate specific finance slowed down from 24% between 2014 and 2015 to 14% between 2015 and 2016
3. Over reporting: The ministry paper has referred to an assessment by Oxfam (2018) which states that the value of loans is being over reported
4. Issue of moral responsibility: The developing nations have been demanding that the developed nations (particularly USA) take historical and moral responsibility for being among the largest greenhouse gas emitters. Moral responsibility includes transfer of funds and technology to aid developing nations in adapting to climate change. However, India has argued that this has not been taken care of.

38. Among Himalayan states, Assam and Mizoram face the biggest climate threat

News

According to a study presented by a team of Indian scientists at the COP 24 climate conference, Assam and Mizoram are the most vulnerable to climate change among the Himalayan states.

About the Study:

12 western and eastern Himalayan states were studied on various parameters crucial for adaptation to climate change such as irrigated area, per capita income (for 2014-15), area under crop insurance, forest cover and the extent of slopes

Highlights of the Study:

1. **Assam** has the **highest** vulnerability because:
 - It has one of the lowest areas under irrigation and lowest forest area per 1,000 rural households among the states assessed
 - It has lowest per capita income
 - Lowest area under crop insurance

- Relatively low participation in the Mahatma Gandhi National Rural Guarantee Scheme (The schemes provides 100 days of unskilled employment to at least one adult member of every poor rural household)
2. **Mizoram (ranked 2nd)** is highly vulnerable because of the same issues faced by Assam and because 30% of its geographical area is under slope.
 3. **Jammu and Kashmir** has **third highest** vulnerability primarily because:
 - has no area under crop insurance
 - least road density
 - low percentage of area under horticulture crops
 - low livestock to human ratio
 - lower percentage of women in the overall workforce
 4. **Sikkim** has performed the best with **lowest vulnerability** as
 - It has the highest per capita income among the 12 states assessed,
 - good coverage of dense forests
 - large area under orchards
 - low population density.

Significance of the study:

The study and vulnerability rankings will aid the government in detecting vulnerable states and districts within a state and take appropriate and targeted actions

39. Drones must serve a larger populace

News

Flying drones have become legal in India starting December 1 with the National Drones Policy drafted by the Ministry of Civil Aviation coming into effect.

What are drones?

1. Directorate General of Civil Aviation (DGCA) has defined Drone/remotely piloted aircraft (RPA) as an unmanned aircraft piloted from a remote pilot station.
2. The remotely piloted aircraft, its associated remote pilot station(s), command and control links and any other components form a Remotely Piloted Aircraft System (RPAS).

About Drone Regulations 1.0

1. As per the Civil Aviation Requirements issued under the provisions of Rule 15A and Rule 133A of the Aircraft Rules, 1937, the drones will need the following:
 - Registered Unique Identification Number (UIN), the fee for which is Rs 1000
 - Unmanned Aircraft Operator Permit (UAOP), the fee for which is Rs. 25000 and is valid for 5 years
 - Compliance to NPNT (No permission – No Take off), a software program to enable operators to obtain permissions prior to flying.
2. The DGCA has classified drones into five different categories in accordance with their maximum take-off weight as follows:
 - Nano drones— Less than or equal to 250 g (does not need registration or license)
 - Micro drones — From 250 g to 2 kg
 - Small drones — From 2 kg to 25 kg
 - Medium drones — From 25 kg to 150 kg
 - Large drones — Greater than 150 kg
3. Digital Sky – an online platform to be operational from December 1 has been developed for handling UIN, UAOP applications and permission to fly drones

Issues and Concerns

1. Surveillance: Surveillance by means of drones raises significant issues for privacy and civil liberties
2. Safety: Biggest safety threat from drones is potential collisions with airplanes. While most of the airports ban drones from flying near them, such rules would be hard to enforce and may cause serious damages.
3. Environmental: Irresponsible drone use could cause harm to birds by disrupting nests, provoking attacks and mid-air collisions
4. Societal:
 - Drone has wide applications in rural areas especially in the agricultural sector where it can be used to map vegetation stress, prevent crop-raiding by wild animals, precise spraying of pesticides etc.
 - However, the processes and fees involved in obtaining permission to fly a drone would make it difficult for rural people to use drones.
5. Technical/Implementation challenges: According to some recent reports, there are delays in the creation of the Digital Sky system which would unnecessarily delay the implementation of the Rules.

40. Kandhamal Haldi likely to get GI tag

News

Odisha's Kandhamal Haldi is likely to receive GI tag as the Geographical Indications Journal has advertised its application seeking objections.

Important Facts

About Kandhamal Haldi

1. Kandhamal Haldi is a member of the Curcuma botanical group, which is a part of the ginger family whose botanical name is Curcuma Longa. It is known for its medicinal values
2. The crop is cultivated in Kandhamal, a district in Odisha which is centrally located and whose geographical area is hilly and covered with forest.
3. Kandhamal Apex Spices Association for Marketing (KASAM) in its application had stated that turmeric is the main cash crop of the poor tribal farmers of the district.
4. Further Kandhamal turmeric is organically produced and is sustainable in adverse climate conditions

What is Geographical Indication (GI)?

The Geographical Indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin.

Geographical Indications of Goods (Registration and Protection) Act, 1999:

1. It was enacted after the ratification of the **Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)**.
2. The Act prescribes uniform standards for the protection of geographical indication and govern GI registrations and goods

Difference between GI and other Intellectual Property Rights

GIs	Other IPs
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Collective intellectual property right- owned by all

Owned by an individual or a business entity.

GIs	Other IPs
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the producers within the defined GI territory

Commercial use benefit all the producers in the GI territory	Commercial use (for e.g. patented product) benefit an innovator or a particular firm
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41. Tiger in the snow

News:

Wildlife Institute of India has found Royal Bengal Tiger in the snow-capped regions of the Eastern Himalaya.

Facts:

- **IUCN Red List status: Endangered**
- Tiger only have one species in the world but it is divided into six subspecies: **Bengal (Indian), Sumatran, Amur (Siberian), Malayan, Amoy (South China) and Indochinese.**
- Bengal tiger habitats usually are tropical rainforests, marshes, and tall grasses however recently they have also been traced in the snow-capped region of Eastern Himalaya in Arunachal Pradesh's Dibang Valley
- A large part of the Dibang Valley is home to the **Mishmi tribes** who have found to co-exist with the animals.
- Sundarban, which is shared between India and Bangladesh are the only mangrove forests where tigers are found.
- Smaller populations are also found in Bangladesh, Nepal, Bhutan, China and Myanmar.
- Bengal Tiger is the most numerous subspecies among all other tiger subspecies.

Threats and Conservation

- The main threats are: poaching and conflicts with humans
- India began to establish reserves through the **Tiger Project** that helped stabilize the Number of tigers since 1970.
- The Indian **Wildlife Protection Act of 1972** empowers the government to take conservation measures.
- The **Wildlife Protection Society of India** continues watching all allegations of tiger poaching

- **Wildlife Trust of India (WTI) and World Land Trust (WLT)** are working together to secure safe passage for elephants, tigers and other threatened species away from humans.
- **Namdapha National Park**
 - o It is located between the **Dapha bum range of the Mishmi Hills and the Patkai range.**
 - o **Noa-Dihing River, a tributary of the Brahmaputra** which flows westwards through the middle of Namdapha
 - o Country's only reserve to have four big cat species — **the tiger, leopard and the severely endangered clouded and snow leopards**
 - o Namdapha was originally declared a Wildlife Sanctuary in 1972, then a National Park in 1983 and became a Tiger Reserve under the Project Tiger scheme in the same year
 - o **Chakma, Tangsa and Singpho and Lisu tribal** settlement found around the park.
 - **Project Tiger:**
 - o Tiger conservation programme was **initiated in 1973 in the Corbett national park of Uttarakhand** by the government of India with the help of **World Wildlife Fund**
 - o The National Tiger Conservation Authority (NTCA) is a statutory body of the Ministry, with an overarching supervisory / coordination role, performing functions as provided in the Wildlife (Protection) Act, 1972.
 - o There are 50 tiger reserves in India which are governed by Project Tigers.
 - In 2005, The Prime Minister of India set up the **Tiger Task Force** to strengthen the conservation of Tigers in the country.
 - **About World Wide Fund for Nature**
 - o WWF is world's largest international non-governmental organization for conservation founded in 1961
 - o The **Living Planet Report** is published every two years by WWF since 1998; it is based on a Living Planet Index and ecological footprint calculation.
 - o Currently, their work is organized around these six areas: food, climate, freshwater, wildlife, forests, and oceans

42. Mumbai start up first Indian pvt firm to have satellite in space

News:

US space agency SpaceX has launched India's first private satellite.

Facts:

- SpaceX's Falcon 9 rocket placed **Exceed Sat-1 along with 63 other satellites** from 17 countries in orbit.
- Mumbai-based Exceed Space has become the **first private commercial organisation** in India to have a satellite in space.
- It is a **mini communication satellite** with an objective to serve Radio community in India and helps the country in time of disaster.
- Indian Space Kidz's **KalamSat-1** is the tiniest satellite launched by NASA on June 22, 2017.

5-6 passes over India daily To orbit Earth every **90 minutes**

Exceed Sat-1

- ▶ It's an open radio transponder, to serve amateur radio community
- ▶ Built by Santacruz-based startup Exceed Space
- ▶ People can receive signals at 145.90 Mhz with help of TV tuner, walkie-talkies with beam antenna

Size: 10 cm X 10 cm X 10 cm
height of a coffee mug

Biggest US 'rideshare'

- ▶ Falcon 9 rocket launch broke records for tech billionaire Elon Musk's SpaceX
- ▶ 19th launch of US private firm this year, breaking last year's record of 18
- ▶ Falcon 9 carried 15 microsats, 49 cubesats

- ▶ Payloads from 18 countries and 35 organisations
- ▶ Launch chartered by a company called Spaceflight, which specializes in space "rideshares"
- ▶ Two-stage rocket is reusable: landed after mission, to be dried out

- **About Falcon 9**

- o The Falcon Heavy is the most powerful cargo-lifting rocket developed by private spaceflight company SpaceX of U.S
- o It is a two-stage rocket powered by liquid oxygen and rocket grade kerosene to transport satellites to low Earth orbit and geosynchronous transfer orbit.
- o Falcon 9 is the first orbital class rocket capable of reflight/reuse.
- o Falcon Heavy was designed to carry humans into space and restores the possibility of flying missions with crew to the Moon or Mars.

6th Dec 2018