31 MARCH 2019

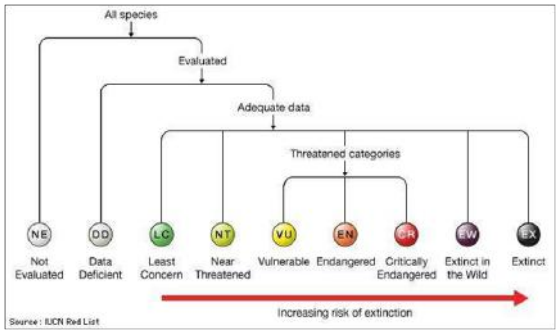
Poisoned cattle carcass kills 37 vultures

- At least 37 vultures belonging to three endangered species died after feeding on pesticide-laced cattle carcass.
- Most of the 37 vultures that died are Himalayan griffon. A few are oriental white-backed and slender-billed vultures
- It was a clear case of poisoning the carcass of a cow by the villagers, meant to killferal dogs. But, as is often the case, the vultures died. It is unfortunate that suchthings happen despite awareness campaigns being carried out
- A study by the Bombay Natural History Society and other organizations in the1990s found that the population of the Gyps group — Himalayan griffon, white-backed and slender-billed are among its members — in India and Nepal declined from about 40 million by 99.9% in just two decades
- In 2003, BNHS found that an increasing number of vultures were dying of kidney failure, which they traced back to the presence of diclofenac—a drug used to treat pain and inflammation in human and cattle—in animal carcasses

In Focus

- India has a vulture problem, and it's not the one you think. In the past 15 years, the country's vulture population has declined by a whopping 99%.The vulture die-off represents the fastest decline of any species in the world
- Vultures are an important part of the food chain. They feed on animal carcasses, preventing the spread of deadly bacteria and fungus into the ground and water
- Studies have shown that there is a direct relationship between the decline of vultures in India and the spread of deadly diseases like rabies. "The potential human health impact of rabies associated with the vulture decline is found to be significant".

IUCN CATEGORIES



Ocean heat hits a record high

- According to the United Nations, the Ocean heat hit a record high in 2018.
- The data from the State of the Climate overview issued by the World Meterological Organization clearly indicates the recent development.
- This thermal expansion - water swelling as it warms - is expected to raise sea levels 30cm.
- UN Secretary-General Antonio Guterres described the lastest findings as "another strong wake up call" for governments, cities and businesses to take action.

Note

- He urged world leaders to come to the Climate Action summit (will be held in September 23, 2019) with concrete plans to reduce greenhouse gas emissions by 45% over the next decade and to net zero by 2050.

Erode Turmeric got GI tag

Why in news?

Days just earlier the famous 'Erode turmeric' has received a prestigious GI tag from the Geographical Indication Registry of India.

In Brief :

Turmeric is one of the oldest spices used in India since time immemorial.

The earliest reference about turmeric can be seen in Atharvaveda in which turmeric was prescribed to cure jaundice.

During the Sangam era of Tamils, around 2000 BCE, the peasants grew turmeric plants in front of their houses.

Climate change may hit India's wind power

Why In News:

Increased warming in the Indian Ocean and the resultant weakening of the Indian summer monsoon may come in the way of India's goal of leading the world's wind power generation.

In Brief:

Summer winds

Summer winds in India are driven by the temperature contrast between the Indian subcontinent and the Indian Ocean, and the warming in the Indian Ocean reduced this contrast. Also, warming of the Equatorial Indian Ocean resulted in a decline in the wind speed.

The Indian government has set a target of 60 GW of cumulative wind power capacity by 2022. The researchers say that this goal can be beneficial only if planners in India take these historical reconstructions into account while setting up wind power installations in the future.

Note

Wind Energy in India

- The Union Government has set an ambitious target of achieving 175 Giga Watt (GW) power capacity from clean renewable energy resources by 2022.
- Out of this, 60 GW target is set for wind power. The present installed wind power capacity in the country is nearly 26.7 GW accounting for nearly9% of total installed capacity.
- Globally, India is at 4th position in term of installed wind power capacity after China, USA and Germany.

- The National Institute of Wind Energy (NIWE) under the MNRE assesses the wind power potential in the country at 100 meter above ground level.
- It has estimated it over 302 GW and there are 8 windy states namely Maharashtra, Gujarat, Andhra Pradesh Madhya Pradesh, Karnataka, Rajasthan, Tamil Nadu and Telangana
- India has achieved the largest-ever wind power capacity addition of 3,423 MW in 2015-16, exceeding the target by 44%.

Targets:

- Medium term target for Offshore wind power : 5 GW by 2022
- Long term target for Offshore wind power : 30 GW by 2030
- Target for Onshore wind power : 60 GW
- The offshore wind power will add new element to already existing basket of renewable energy of the country.

Analysis:

- The target set for offshore wind power is moderate in comparison to on-shore wind target of 60 GW and its achievement of 34 GW and solar target of 100 GW by 2022.
- This is mainly because of challenges considering difficulties in installing large wind power turbines in open seas.
- Moreover, offshore wind turbines are of much larger dimensions and capacities than onshore turbines.
- Globally the installation capacity of off-shore wind power is about 17 to 18 GW. It led by countries such as UK, Germany, Denmark, Netherlands & China. Recent years have witnessed fall in off-shore wind tariff in some of these markets.

Steps for Offshore Power :

- MNRE had notified National Offshore Wind Energy Policy in October 2015 for this sector.
- Under it, Chennai based National Institute of Wind Energy (NIWE) was designated nodal agency to carry out necessary studies and surveys before final bidding of offshore wind project sites.
- It also serves as single window for facilitating necessary clearances required for development of offshore wind projects.
- NIWE had identified southern tip of Indian peninsula and west coast with good potential for off-shore wind power.
- Moreover, preliminary studies were conducted are off coast of Gujarat and that of Tamil Nadu for development of offshore wind power projects.
- It had had installed India's first offshore LiDAR in Gulf of Khambhat for measurement of wind resource and is collecting wind speed data from November 2017.

IIT Madras converts petroleum waste toluene into useful product

Note

Why In News:

Using platinum nanocatalyst, the Indian Institute of Technology (IIT) Madras has successfully converted petroleum waste-product toluene into benzoic acid.

In Brief:

Uses of Benzoic Acid:

Benzoic acid is used as a food preservative (E210) and medicine for fungal/bacterial infection. Toluene is converted into benzoic acid through

selective and controlled oxidation in the presence of a catalyst binaphthyl-stabilised platinum nanoparticles (Pt-BNP).

Green oxidant

Organic reactions are carried out using organic solvents, which makes it expensive and also generates toxic waste.

A green oxidant (70% aqueous tert-butyl hydroperoxide or TBHP) is used for converting toluene into benzoic acid.

The Chemistry Involved:

- When toluene is oxidised, it gives four products. But when we use the catalyst that we developed, only benzoic acid is produced. No alcohol, aldehyde or ester is produced.
- The yield of benzoic acid varied from 68-96% depending on whether the toluene used is electron-deficient or electron-rich.
- Toluene when oxidised gets converted into benzoic acid.
- Molecular oxygen when used alone does not oxidise toluene and so no benzoic acid is generated. So the researchers used TBHP as an oxidiser.
- The catalyst reacts with TBHP to initiate the oxidisation reaction where toluene gets converted into benzoic acid through a series of reaction steps.

Iran seeks improved trade ties with India amid sanctions

Why In News:

Despite of sanctions from U.S. Iran is exploring ways to increase its bilateral trade with India, including expanding banking channels.

In Brief:

India – Iran Relations:

1.Energy:

- India can decrease the dependence on Saudi for oil and Iran oil is comparatively cheap
- Iran has the world's second-largest reserves of natural gas, yet it is not a major exporter.
- Iran has several challenges to overcome before it can become an energy supplier to Europe and Asia. Iran's energy infrastructure – long neglected as a result of Western sanctions – requires major upgrades to make it capable of sustained energy exports.
- This will require massive foreign investment and India can tremendously help here.

2. Chabahar port:

It is located on the Makran coast, Chabahar in southeastern Iran. Its location lies in the Gulf of Oman. This coast is a relatively underdeveloped free trade and industrial zone, especially when compared to the sprawling port of Bandar Abbas further west. Also, it is the only Iranian port with direct access to the ocean.

Note

Why this port is of interest to India?

- India believes the port is critical to its interests and wants to develop it as a counter to Pakistan's Gwadar port which was built with Chinese assistance
- The port will allow India to bypass Pakistan to transport goods to Afghanistan and Central Asia using a sea-land route
- Chabahar Port lies in the Persian Gulf in Iran and will help India in expanding its maritime commerce in the region
- It also provides opportunities to Indian companies to penetrate and enhance their footprint in the region
- It is located 76 nautical miles (less than 150km) west of the Pakistani port of Gwadar, being developed by China. This makes it ideal for keeping track of Chinese or Pakistani military activity based out of Gwadar
- The port will cut transport costs/time for Indian goods by a third
- From Chabahar, the existing Iranian road network can link up to Zaranj in Afghanistan, about 883 kms from the port. The Zaranj-Delaram road constructed by India in 2009 can give access to Afghanistan's Garland Highway, setting up road access to four major cities in Afghanistan — Herat, Kandahar, Kabul and Mazar-e-Sharif.

3. Role in Afghanistan:

- Iran-Afghan railway link:
- India is currently involved in constructing a 560 mile long railway line linking the Iranian port with the iron ore mines in Hajigak in southern Afghanistan.
- The railway link when completed will potentially afford India some strategic benefits including –
- Increasing India's position and leverage in Afghanistan and the central Asian region. This affords India an easier connection to Afghanistan after avoiding Pakistani blockages.
- Apart from the impact on security and regional politics this more importantly implies that Indian companies will have opportunities to start exploration over Afghanistan's mineral wealth which is estimated to be close to $3 trillion. (This alone is over double the size of India's economy.)
- Both Iran and India share the goal of a stable government in Kabul free of the Taliban's influence and not revert to the Taliban-controlled Pakistani client state that it was in the 1990s. To that end, India and Iran must engage each other to strengthen the hand of the government in Kabul.

4. Industries:

- Iran believes that India fulfils a substantial part of Iran's needs. For example, India is very capable in steel, in aluminium, in mines and metals, railroads, software, IT, technology and so on. There is a lot of demand in these sectors in Iran.
- One of the biggest advantages in recent times is that Indians are offering a credit line to the Iranians. That's a very substantial element in the hands of the Indians to offer for different projects to Iranians and this credit, which is in rupees, is beneficial to Indians. According to the financial structure, Indian companies will benefit from it, the rupee will benefit from it.

Note

5. Geopolitical:

- Iran would act as a gateway to Central Asia
- After removal of sanctions the significance of Iran geopolitically has increased.
- Central Asia is going to be the scene of renewed great power rivalry, and India must act, not as a mere spectator, but as a leading player.
- Notwithstanding Iran's growing bonhomie with Pakistan and China, India must stay in close contact with Iran and consciously and consistently pursue good diplomatic and economic relations with it.

6. Terrorism:

- Globally, New Delhi and Tehran are on the same page in their opposition towards groups like al-Qaeda and the Islamic State.
- Increasing hold of ISIS is a threat to Iran and with India effective efforts against terrorism India can be a attractive partner

7. Culture:

- India has the 2nd largest population of Shias in the world after Iran some of whom probably also have ancestral ties to Iran. This ties back to a complex political situation in India. Religion and national allegiances play a large part in Indian politics and this is magnified with the upcoming elections.

8. Other projects:

- India has been vigorously pursuing the Iran–Pakistan–India (IPI) gas pipeline project for the last decade. The operation of the IPI project would be reinforced by the trilateral "Framework Agreement," in which the three governments would be committed to the provisions of the Energy Charter Treaty
- With the Iran-Pakistan-India (IPI) pipeline still stuck and the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline yet to take off, India is very keen to kick-start an undersea pipeline project that would bring Iranian gas to India via the Arabian Sea bypassing Pakistan.
- This is a great opportunity for India to transport natural gas from Iran to Porbandar port in Gujarat
- Zaranj-Delaram Highway is being built with financial support from India.
- A strategic partnership between India, Iran and Russia is intended to establish a multi-modal transport link connecting Mumbai with St Petersburg, providing Europe and the former Soviet republics of Central Asia access to Asia and vice versa.
- Iran may also provide connectivity to Central Asia and Europe, via the International North South Transport Corridor(INSTC), which is estimated to be 40 percent shorter and 30 percent less expensive than trade via the Red Sea-Suez Canal-Mediterranean route.

GSP withdrawal by U.S. likely to affect India's plastics exports

In news:

According to Plastic Export Promotion Council (Plexconcil), the move by the United States to terminate India's designation as beneficiary developing country under the Generalized System of Preferences (GSP) programme is likely to affect plastic exports from India.

The GSP concessions extended by the U.S. amounted to a duty reduction of $30 million per annum on imports of plastic products worth $600 million for the period January to December 2018

Note

Generalized System of Preferences (GSP):

The Trade Act of 1974, which gives the US President the power to provide duty-free treatment under GSP to an eligible article from a designated beneficiary developing country. It also gives the President the power to withdraw, suspend or limit such duty-free treatment given to any beneficiary developing country.

It is considered to be an exception to the Most Favoured Nation (MFN) principle, which dictates that WTO member countries cannot normally discriminate between their trading partners.

Nearly 2,000 products including auto components and textile materials can enter the US duty-free if the beneficiary developing countries meet the eligibility criteria established by the Congress.

India was the largest beneficiary of the programme in 2017 with USD 5.7 billion.

- The GSP programme allows duty-free entry of 1,784 products from India into the US
- Exporters of textiles, engineering, gems and jewellery and chemical products benefit the most from this programme

Break in talks between N.Korea and US

In news:

U.S. President Donald Trump gave North Korean leader Kim Jong Un a list of demands when they met in Hanoi February 2019 for a second summit, which collapsed over conflicting demands by Pyongyang for sanctions relief and by Washington for North Korea to give up its nuclear weapons.

In brief:

The document called for fully dismantling North Korea's nuclear infrastructure, chemical and biological warfare programme and related dual-use capabilities, and ballistic missiles, launchers, and associated facilities and transfer of Pyongyang's nuclear weapons and bomb fuel.

It also called on North Korea to

- Provide a comprehensive declaration of its nuclear programme and full access to U.S. and international inspectors
- Halt all related activities and construction of any new facilities
- Eliminate all nuclear infrastructure
- Transition all nuclear programme scientists and technicians to commercial activities.

About North Korea:

The Korean Peninsula was first divided along the 38th parallel in 1945.

In 1953, The two sides agreed to create a four-kilometer-wide buffer zone between the states, known as the Korean Demilitarized Zone (DMZ). This new border, reflecting the territory held by each side at the end of the Korean war, crossed the 38th parallel diagonally.

- North Korea is located between Korea Bay and Sea of Japan.
- Capital: Pyongyang
- It is bordered by South Korea in South, China to the North and Russia to the North-east.

Note

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