Prelim Bits 06-03-2022 & 07-03-2022| Daily UPSC Current Affairs

Silicosis

Silicosis is ravaging mine and factory workers in several villages of Jharkhand.

- Silicosis is a type of **pulmonary fibrosis**, a lung disease caused by breathing in tiny bits of silica, a common mineral found in sand, quartz and many other types of rock.
- It usually happens in jobs where you breathe in dust that contains silica.
- [High-risk jobs are construction work, stone countertop fabrication, foundry work, ceramics manufacturing, mining and hydraulic fracturing (fracking).]
- Over time, exposure to silica particles causes scarring in the lungs, which can harm your ability to breathe.
- **Symptoms** of silicosis usually appear after many years of exposure.
- In early stages, symptoms are mild and include cough, sputum and progressive shortness of breath.
- As the scarring continues to worsen, the first real signs of a problem may be an abnormal chest X-ray and a slowly developing cough.
- **Complications** from silicosis can include tuberculosis, lung cancer, chronic bronchitis, autoimmune disorders and kidney disease.
- **Treatment** - There is no cure for silicosis, but treatment is available, and employers and workers can take steps to prevent it.
- Medications (Inhaled steroids reduce lung mucus; Bronchodilators help relax your breathing passages; Oxygen therapy)
- Lung transplant surgery
- Cigarette smoking adds to the lung damage caused by silicosis. Quitting smoking is an important part of managing the disease.

Reference

1. https://www.thehindu.com/society/theres-a-scourge-of-silicosis-among-mine-and-factory-workers-in-jharkhand/article65092384.ece
2. https://www.lung.org/lung-health-diseases/lung-disease-lookup/silicosis/learn-about-silicosis
3. https://www.lung.org/lung-health-diseases/lung-disease-lookup/silicosis/symptoms-diagnosis
4. https://www.webmd.com/lung/what-is-silicosis

Black-necked Cranes

Recently, a pair of black-necked cranes was seen in eastern Ladakh.

- Black-necked cranes (*Grus nigricollis*) are the **only cranes to live in mountains**.
- This alphine crane inhabits remote areas of the Tibetan plateau.
- Black-necked Crane is the only crane species to migrate between winter and summer grounds.
- **Courtship** - Its breeding range includes the Himalayan Mountains, as well as parts of central

China and northern India.
- A pair claims ownership over a large tract of wetland, chasing away rival claimants. Then courtship begins when they dance together.
- When the time comes, both adults choose an islet on which they pile aquatic vegetation and mud into mounds.
- They nest in the same spot every year.

Protection Status	
IUCN Red List	Endangered
Wildlife (Protection) Act 1972	Schedule I

- **Threats** - Habitat loss and degradation related to climate change, changes in agriculture practices, pollution and environmental contamination.

Reference

1. https://www.thehindu.com/sci-tech/energy-and-environment/the-crane-chase/article65093047.ece
2. https://www.wwfindia.org/about_wwf/priority_species/threatened_species/black_necked_crane/
3. https://savingcranes.org/species-field-guide/black-necked-crane/

Van Gujjars

- Van Gujjars are **forest-dwelling, nomadic and transhumant** community.
- Vangujjars are said to be migrated from Northwest India about 300 years ago and during the period of King Aurangazeb rule they have been converted to Muslims.
- They inhabit the foothills of Himalayan States such as Uttarakhand, Himachal Pradesh and Jammu and Kashmir.
- They are **pastoralists** who let their **buffalo herds** graze in the forest areas for their livelihoods.
- They adopted nomadism along with their buffalo herds in Tarai and Bhabhar region of Himalayas.
- **Seasonal Movements** - Buffalo grazing is adapted by seasonal movements in keeping with climatic variations prevailing between different altitudes of the mountain region of the Himalayas.
- They spend autumn (October – April) in the lower ranges of Chillarveli in the Shiwaliks.
- Then, they move up in the summer and rainy season (May to Sept) to the **bugyals (grasslands)** in the higher alpine regions of the Himalayas viz., Uttarkasi, Badrinath, Kedarnath and Gangotri areas.
- This highly ecologically sensitized movement is disturbed by the eviction of Van Gujjar families by the forest department which enclosed the forest area by declaring it as the Rajaji National Park in 1983.

Forests Rights Act 2006 has ensured that even pastoralists possess rights to access grazing pastures in lieu of the Community Forest Resource right they are eligible for.

Reference

1. https://www.downtoearth.org.in/blog/forests/how-the-van-gujjars-perceive-the-wildlife-protection-amendment-act-2021-81830

2. https://www.iucn.org/downloads/india_van_gujars.doc

Fusobacterium

Several groups have corroborated the finding that oral tumours among Indian patients are not driven by HPV infection but by the Fusobacterium.

> Since the beginning of the 20th Century, *Fusobacterium* is known that infections could play a role in cancer, with 18-20% of cancers associated with infectious agents.
>
> This could be relatively higher in developing countries like India, than in the developed countries where the incidence of human papillomavirus (HPV) genome is more.

- Fusobacterium species is a genus of anaerobic, elongated, Gram-negative, non-sporeforming bacteria, similar to Bacteroides.
- They are common obligately anaerobic bacteria of the oral cavity that may act as a bridge between early and late colonizing bacteria in dental plaque and have a role in oral and extra-oral infections.
- There are multiple species of Fusobacterium, but the one most associated with human disease is F. Necrophorum.
- F. Necrophorum is a cause of periodontal disease, tonsillitis, peritonsillar abscess, and thrombophlebitis of the jugular vein (Lemierre syndrome).
- *Fusobacterium nucleatum* has a crucial role in oral biofilm structure and ecology, as revealed in experimental and clinical biofilm models.

Reference

1. https://www.thehindu.com/sci-tech/health/the-role-fusobacterium-plays-in-oral-cancer-patients-in-india/article65192892.ece
2. https://www.sciencedirect.com/topics/medicine-and-dentistry/fusobacterium#:~:text=Fusobacterium%20species%20are%20anaerobic%2C%20elongated,jugular%20vein%20(Lemierre%20syndrome).
3. https://www.frontiersin.org/articles/10.3389/fmicb.2019.01716/full

Global Treaty on Plastic Pollution

The United Nations Environment Assembly (UNEA) is going to start writing a global treaty on plastic pollution.

- The final resolution will take into account the “full life cycle of plastics” - Production, Design, Recycling and Management of plastic waste.
- The final resolution, which will be arrived by the members of the UNEA who held talks in Nairobi, is heavily influenced by the Rwanda-Peru joint draft resolution.
- It recognizes the significant contribution made by workers under informal and cooperative settings to collecting, sorting and recycling plastics in many countries.
- This resolution urged the UN Environment Programme to convene an Intergovernmental Negotiating Committee (INC) to complete its work by end of 2024.

Provisions of Resolution

- The treaty on plastic pollution, which includes both microplastics and marine litter, will have both binding and voluntary approaches.
- The proposed INC has to include provisions of promoting national and international co-operative measures and national action plans to work towards the prevention, reduction and elimination of plastic pollution.
- The treaty will also specify arrangements for capacity building, technical assistance, technology transfer and financial assistance.
- It also indicated the possibility of a global dedicated fund and invited governments and other stakeholders to provide budgetary resources.

The blueprint for the plastic pollution resolution is being compared to the Montreal protocol to prevent ozone layer depletion and the Paris accord in terms of their **open endedness.**

Full life Cycle of Plastic

Stage of lifecycle of plastic	**Facts**	
Extraction	Almost two billion tonnes of GHG emissions per year. At least 10,000 additive chemicals used, of which 25% are hazardous.	
Production	Over 460 million tonnes of plastic produced annually. 2,30,000 tonnes of plastic pellets enter the environment every year.	
Use	Per capita use of plastic is as high as 221 kilogram for some countries. Half of all the plastics used is single-use plastic (SUP).	
End of life	Managed (in some parts of the world) • Only 9% of all plastics produced have been recycled • Over 90% of plastic waste goes to landfills, is dumped or incinerated • 8 million tonnes of plastics are exported annually	Mismanaged (in other parts of the world) • 12 million tonnes leak into the ocean every year • Land pollution is upto 23 times worse than ocean pollution

- The extraction phase of the fossil fuels by the oil, gas and coal companies is the source of around 99% of plastics.

Green Washing

- Greenwashing is the process of conveying a false impression or providing misleading information about how a company's products are more environmentally sound.
- It is considered an unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly.

Reference

1. https://www.downtoearth.org.in/blog/waste/false-solutions-green-washing-may-put-dampner-on-historic-global-plastic-treaty-81822
2. https://www.investopedia.com/terms/g/greenwashing.asp#:~:text=Greenwashing%20is%20th

e%20process%20of,company's%20products%20are%20environmentally%20friendly.

