Prelim Bits 08-11-2022 | UPSC Daily Current Affairs

Utah Salt Flats

The glistening white salt of the world famous Bonneville Salt Flats is shrinking near the Utah-Nevada line.

- The Bonneville Salt Flat is found west of the Great Salt Lake, in Western Utah.
- Both the Bonneville Salt Flats and the Great Salt Lake are remnants of the prehistoric lake - Lake Bonneville.

- The Salt Flat stretching over 30,000 acres, is located near the Utah-Nevada border.
- The salt surface contains potassium, magnesium lithium and sodium chloride (common table salt).
- **Environment** - The vegetation is sparse owing to the salty soil.
- Ponds and marshy areas can be found in spots near the edges of the flats and they provide critical habitat for plants and animals.

Threats

- The salt flat is growing thinner and the overall footprint has shrunk to about half of its peak size in 1994.
- **Racing** - The slat flat is perfectly flat and has a thick crust of salty soil.

- The crust keeps tires cool at high speeds and provides an ideal surface for racing.
- Bonneville Speedway is a part of the salt lake used as motor race ground.
- **Potash Mining** - Potash, a potassium-based salt is extracted from the salt lakebed.
- The briny water in the aquifer below the flats is depleting faster due to potash mining.
- **Drought** - The landscape relies on the seasonal flood to maintain its size and footprint.
- Fails in seasonal flooding leads to recede or leaves behind an unstable layer of salt.

References

1. The Hindu - Search for solutions drives race to save Utah salt flats
2. Bonneville Salt Flats - Utah

National Bio Energy Programme

The Ministry of New and Renewable Energy has notified to continue the National Bioenergy Programme for the period from FY 2021-22 to 2025-26.

- The National Bio Energy Programme will aid the use of huge surplus biomass, cattle dung, and industrial and urban bio-waste available in the country for energy recovery.
- The Programme has been recommended for implementation in **2 Phases** - Phase-I (budget outlay of Rs. 858 crore) and Phase-II.
- The National Bioenergy Programme will comprises of **3 sub-schemes:**
    1. Waste to Energy Programme
    2. Biomass Programme
    3. Biogas Programme
- **Waste to Energy Programme** - A programme on Energy production from Urban, Industrial and Agricultural Wastes /Residues.
- To support setting up of large Biogas, BioCNG and Power plants (excluding MSW to Power projects).
- **Biomass Programme** - A scheme to Support Manufacturing of Briquettes & Pellets and Promotion of Biomass (non-bagasse) based cogeneration in Industries.
- The pellets and briquettes produced can be used in power generation and non-bagasse based power generation projects.
- **Biogas Programme** - To support setting up of family and medium size Biogas in rural areas.
- The National Bio Energy Programme will also give an extra push in the form of a 20% higher standard Central Financial Aassistance pattern for the north-eastern region.

References

1. PIB - MNRE notifies National Bio Energy Programme
2. Live Mint - The Ministry of New and Renewable Energy
3. EconomicTimes - Renewable energy ministry to continue Bio Energy Programme till 2025-26

Guru Nanak Jayanti

Guru Nanak Jayanti or Gurpurab this year is observed as the 553rd birth anniversary of Guru Nanak Dev Ji.

- Guru Nanak Jayanti also known as Guru Nanak's Prakash Utsav and Guru Nanak Dev Ji Jayanti.
- The birth anniversary of Guru Nanak is celebrated on the Full Moon day of the Indian lunar month, Kartik.

Guru Nanak (1469-1539)

- Guru Nanak is the first Guru of Sikhs.
- Guru Nanak was born in a Hindu merchant family in **Nankana Sahib** Village near the river Ravi in Punjab (present day Pakistan).
- He travelled widely before establishing a centre at **Kartarpur** (Dera Baba Nanak on the river Ravi).
- **Ideology** - He rejected sacrifices, ritual baths, image worship, austerities and the scriptures of both Hindus and Muslims.
- For Baba Guru Nanak, the Absolute or 'Rab' had no gender or form. He emphasized the importance of the worship of one God.
- He proposed a simple way to connect to the Divine by remembering and repeating the Divine Name, expressing his ideas through hymns (shabad in Punjabi).
- **Gurdwara** - Baba Guru Nanak organised his followers into a community and set up rules for congregational worship (sangat) involving collective recitation.
- Irrespective of their former creed, caste or gender, his followers ate together in the common kitchen (**langar**).
- The sacred space thus created by Guru Nanak was known as Gurdwara.
- **Successor** - He appointed one of his disciples, **Angad** (2^{nd} Guru)**,** to succeed him as the guru.

Guru Granth Sahib

- The 5^{th} preceptor, Guru Arjan, compiled Guru Nanak's hymns along with those of his four successors in the **Adi Granth Sahib.**
- Adi Granth Sahib also has hymns written by other religious poets like Baba Farid, Ravidas and Kabir.

The Mughal emperor Jahangir ordered the execution of Guru Arjan in 1606.

- The 10^{th} preceptor, Guru Gobind Singh, included the compositions of the 9^{th} guru, Guru Tegh Bahadur, and this scripture was called the **Guru Granth Sahib.**
- Guru Granth Sahib is the holy scripture of the Sikhs written in **Gurmukhi** script.

Khalsa Panth

- Under Guru Gobind Singh, the Sikh community got consolidated as a socio-religious and military force.
- He laid the foundation of the Khalsa Panth (army of the pure).
- The Khalsa Panth is defined by its five symbols: *kes* (Uncut long hair), *kangha* (comb), *kachha* (a pair of shorts), *karha* (steel bangle), and *kirpan* (sword).

References

1. Live Mint - Guru Nanak Jayanti today: history, significance
2. PIB - PM greets people on Parkash Purab of Sri Guru Nanak Dev Ji

Make-2 project

Indian Army has approved project sanction orders for five Make -2 projects providing impetus to Atma Nirbhaarta.

- The Indian Army has 43 ongoing projects under the Make II procedure of Capital Acquisition.
- 17 out of 43 projects have been initiated through suo-moto proposals received from the industry.
- The 5 products ordered by Indian Army under Make-2 project are
    1. High-Frequency Man Packed Software Designed Radio,
    2. Drone Kill System,
    3. Infantry Training Weapon Simulator,
    4. 155mm Terminally Guided Munitions and
    5. Medium Range Precision Kill System.

MAKE Projects

- **Defence Acquisition Procedure 2020** encourages indigenous designing and manufacturing of defence items.
- The **Make category of capital acquisition** in Defence Procurement Procedure is a vital pillar for the **Make in India** initiative.
- It enables indigenisation of high end technology systems in the defence industry.
- The 'Make' Procedure aims to achieve the objective of self-reliance by involving greater participation of Indian industries including the private sector through the following mechanisms.

Make-I (Government Funded)	**Make-II (Industry Funded)**
This involves the design and development of equipment, systems, major platforms or upgrades thereof by the industry.	This includes design & development and innovative solutions by Indian vendor for development of prototypes.
The Government provides financial support up to 70% of prototype development cost or a maximum INR 250 crore per Development Agency.	No Government funding is provided for this but it has the assurance of procurement on successful prototype development.

References

1. Live Mint - Indian Army approves five Make-2 projects
2. India Today - Indian Army approves five Make II projects
3. Times Now - Indian Army approves Project Sanction Orders of five Make II projects
4. Make In India - Defence Manufacturing

Lycopene

Researchers have developed a Nano-biosensor for detecting lycopene.

> *The Nano-biosensor uses a portable smartphone-based upconverting reusable fluorescent paper strip to detect lycopene in tomatoes.*
>
> *Upconversion is a process where light can be emitted with photon energies higher than the light generating the excitation.*

- Lycopene is a **phytochemical** with high commercial value.
- It is a **type of carotenoid** found in high amounts in tomatoes and also present in pink grapefruit, watermelons and papaya.
- It is responsible for the **red to pink colours** seen in tomatoes, pink grapefruit, and other foods.
- It is also synthesised by plants and microorganisms but **cannot be synthesised by the human body** and can only be obtained via diet.
- It is a potent **antioxidant** that helps prevent cancer and heart diseases.
- High intake of lycopene-rich foods shows a reduced risk of several cancers, notably prostate cancer.

Carotenoids

- They are natural pigments present mainly in fruits and vegetables.
- They are responsible for colours from yellow to red that also have a role as non-nutrients.
- α-carotene, β-carotene, lycopene are few examples of carotenoids.

References

1. Down To Earth - Researchers develop reusable, paper-based lycopene sensors
2. ScienceDirect – Lycopene