

18 February, 2022

Umbilical Cord Transplant

❖ **Context**

- A woman of mixed race in New York City, who also had leukaemia, appears to be the **third person and the first woman ever to be cured of an HIV infection** following a new **stem cell transplant treatment** involving umbilical cord blood.

❖ **Key Highlights**

- The treatment seems to have **benefit HIV patients who also have other diseases such as cancer**.
- She received a **stem cell transplant in the form of two blood transfusions**: one from an **adult relative** and the other of umbilical blood from an **unrelated newborn**.
- The **newborn**, who was a **partially matched donor**, had a mutation in a gene called **CCR5**, which hinders HIV's ability to invade host cells.
- The woman and her doctors discontinued her HIV treatment in 2020, three years after her transplant, and she has yet to show any detectable signs of the virus in the months since.
- Roughly **38 million people live with HIV worldwide and about 73 percent of them are receiving treatment in the form of antiretroviral therapy**, but **only three have been cured**.
- The **two other patients** who beat HIV - also cancer patients - **received bone marrow stem cell transplants that also carried a CCR5 mutation**.
- However, both developed **graft versus host disease**, a debilitating condition where the donor's cells attack the recipient's body. One patient nearly died; the other lost almost 70 pounds and developed hearing loss.
- **Umbilical cord blood transplants usually don't serve as a treatment for cancer** since they can take up to six weeks to engraft and because **there are typically few stem cells in the cord**. That's why her doctors implanted the adult stem cells, which gave her body temporary immune defences while the umbilical cord blood cells replicated and eventually replaced the adult stem cells.
- Since **umbilical blood is more readily available than bone marrow**, researchers say the treatment could likely help other patients as well.
- The umbilical cord cells **don't need to be genetically matched as closely to the recipient as bone marrow cells do** and could potentially improve treatment options for people with both cancer and HIV.
- **Stem cells** are **special cells** that can make copies of themselves and change into the many different kinds of cells that our body needs.
- There are several kinds of stem cells and they are found in different parts of the body at different times.
- **Hematopoietic stem cells** are stem cells that turn into blood cells.
- **Bone marrow** is soft, spongy tissue in the body that contains hematopoietic stem cells. It is **found in the centre of most bones**. Hematopoietic stem cells are also found in the blood that is moving throughout your body.
- A **bone marrow/stem cell transplant** is a medical procedure by which healthy stem cells are transplanted into the bone marrow or blood. This restores the body's ability to create the red blood cells, white blood cells, and platelets it needs.

Organisation of the Islamic Cooperation(OIC)

❖ **Context**

- India lashed out at the Organisation of the Islamic Cooperation (OIC) for being “communal minded” and “hijacked by vested interests” – a thinly veiled reference to Pakistan – after the grouping called on the UN Human Rights Council to take “necessary measures” on the issue of Muslim girl students being told not to wear the hijab in Karnataka schools.

❖ **Key Highlights**

- The Organisation of the Islamic Cooperation is the **world's second largest multilateral body** after the UN. It counts **57 members**, all of which are Islamic countries or Muslim majority members.
- The OIC's stated objective is “to safeguard and protect the interests of the Muslim world in the spirit of promoting international peace and harmony among various people of the world”.
- The **Central African Republic, Russia, Thailand, Bosnia & Herzegovina**, and the **unrecognised Turkish Cypriot “state”**, have Observer status.
- The OIC was established by the **First Islamic Summit Conference held in Morocco** in September **1969**, to marshal the Islamic world after an act of arson at the Al-Aqsa Mosque in Jerusalem by a 28-year-old Australian in 1969.
- It plunged the Middle East into its worst crisis after the 1967 Arab-Israeli war.
- It was known as the Organisation of Islamic Conference until 2011.
- The OIC is mainly controlled by Saudi Arabia, but Pakistan, as the only Islamic country with nuclear weapons, has had a large say since its inception.

Face to Face Centres

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❖ India & OIC

- As a country with the **world's second largest Muslim Community**, India had been invited to the founding conference at Rabat in 1969.
- But at Pakistan's behest, the then Agriculture Minister Fakhruddin Ali Ahmed was dis-invited upon arrival.
- In 2019, India made its maiden appearance at the OIC Foreign Ministers' meeting, as a "guest of honour".
- Then External Affairs Minister addressed the Inaugural Plenary in Abu Dhabi, after having been invited by the UAE Foreign Minister.

Solar Waste

❖ Context

- Recently, the **International Renewable Energy Agency (IRENA)** has estimated that the Global Photovoltaic waste will touch **78 million tonnes by 2050**.
- India** is expected to be **one of the top five generators** of such waste.

❖ Key Highlights

- India currently considers **solar waste a part of electronic waste** and does not account for it separately.
- There was **no commercial raw material recovery facility** for solar e-waste operational in India.
- A pilot facility for solar panel recycling and material recovery had been set up by a private company in **Gummidipoondi in Tamil Nadu**.
- India has set a **target of producing 100 GW of solar energy by 2022**.
 - The **Ministry of New and Renewable energy is the nodal agency** to tackle India's renewable energy issues.
- The cumulative capacity of grid-connected solar photovoltaic (PV) installations is around 40 GW.
 - Of the current capacity, about 35.6 GW, is generated from ground-mounted plants and 4.4 GW from rooftop solar.

❖ Solar Waste in India

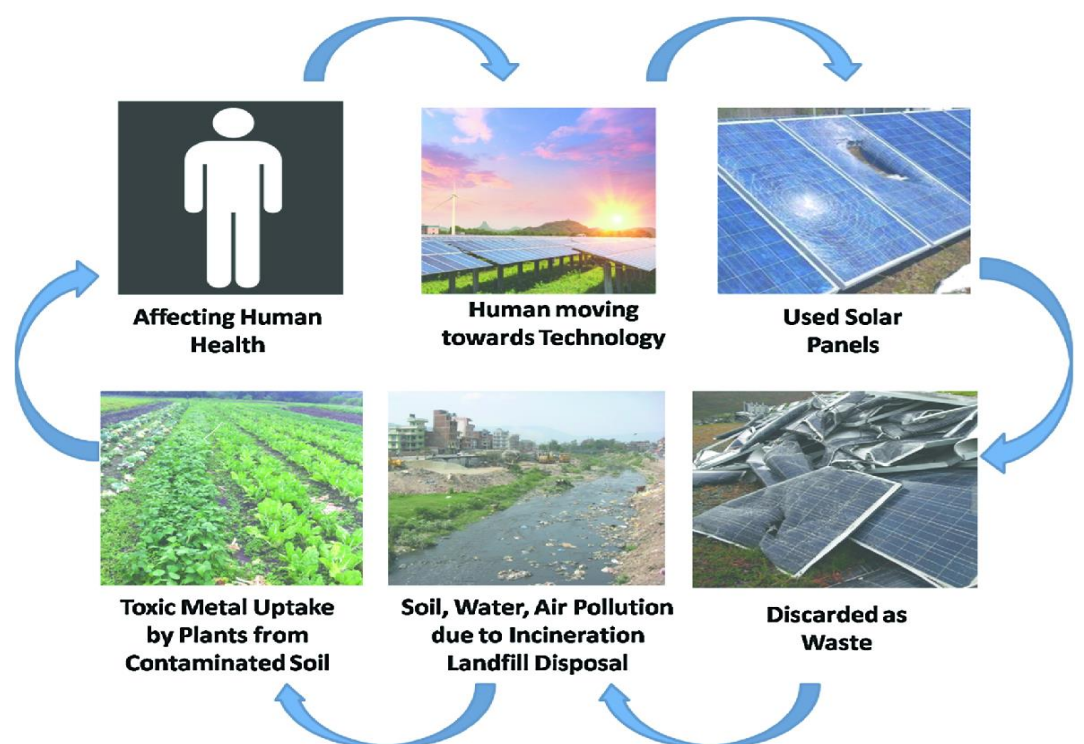
- Solar panels have an **estimated life of 25 years**, and given that India's solar manufacturing industry took off around 2010, **most of the installed systems were new** and early in their calendar lifecycle and therefore **unlikely to generate a large quantity of solar waste**.
- However, **modules could develop defects during the plant operations** and be discarded even before their scheduled life span.

❖ Way Forwards

- Devising **Sustainable end-of-life Management** policies for PV panels,
- Expand waste management **infrastructure**,
- Environmental disposal and recycling of solar waste** to be part of power purchase agreement.
- Ban on Landfills** as solar waste is harmful to the environment.

❖ About IRENA

- IRENA is an **Intergovernmental Organization** mandated to facilitate cooperation, advance knowledge, and **promote the adoption and sustainable use of renewable energy**.
- It is the **first international organization** to focus exclusively on renewable energy.
- It was **founded in 2009** and its statute entered into force in 2010.
- It **headquartered** in Masdar City, Abu Dhabi.
- IRENA is an **official United Nations observer**.
- Currently it has 164 members, India is the 77th Founding Member of IRENA.



Madhubani painting

❖ Context

- These days, the **JCDecaux bus shelters in New York, Chicago and Boston** are playing host to a unique public art exhibition, **Global Positioning**.
- The gamut of artists includes **Pushpa Kumari**, incidentally the **only Indian artist in the exhibition**, who has contributed a Madhubani painting, titled Joy Of Living.

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❖ Key Highlights

- Joy Of Living has been inspired by the **idea of Vasudeva Kutumbakam** (the world is one family).



❖ About Madhubani Painting

- Madhubani means ‘**forest of honey**’.
- It is a **style of folk painting** old enough to find mention in some of the **ancient Indian texts** like the **holy Ramayana**.
- It is **also known as Mithila**, for its origin, is said to be the **Mithila region in Bihar**.
- Traditionally, the Madhubani paintings were **created using fingers and twigs**, and items like matchsticks have come to be used in their creation in recent times.
- Traditionally the women of the village **drew these paintings on the walls of their dwelling**, as a demonstration of their feelings, hopes, and ideas..
- These paintings are **popular because of their tribal motifs and use of bright earthy colors**.
- It is **based on the mythological characters** which depict the life of Hindu deities like Krishna, Rama, Lakshmi, Shiva, Durga, and Saraswati.
- Renowned Artists:** Karpuri Devi, Mahalaxmi and Dulari.

News in Between the Lines

Agriculture Center of Excellence



❖ Context

- Recently, **Israel has sent an Agriculture Expert in Tripura** in pursuance to the assurance made by its envoy to India.
- Ron Malka to **help introduce modern technology** in the agriculture sector of the State.

❖ Key Highlights

- Israel has **already set up 29 such** centers to help farmers gain higher yield and generate more income through value added technology.
 - The center in **Tripura will be the 30th**.
- The envoy who visited the State a year ago had commented that the **farmlands were full of potential**.
- The State is making progress to implement Dr. Ron Malka’s commitment to set up an “**Agriculture Center of Excellence**”
- Yair Eshel**, senior agriculture attache at the Embassy of Israel in New Delhi, has completed his three-day visit.
 - He is known as a garlic breeder and cocoa expert.
- Mr. Eshel** toured some agriculture and horticulture sites managed by the Department of Agriculture and Farmers Welfare of the Tripura government.
 - He enquired about irrigation and orchard management, fertilizer application and maintenance from the officials.
- They were satisfied with the cultivation method, but saw **shortcomings in the use of technology**.
- Israel will provide **technical support to the northeastern State** to improve the volume and quality of the products.

Abraham Accords

❖ Context

- This week, in what is being called a historic first, **Israel’s Prime Minister Naftali Bennett undertakes a two-day official visit to Bahrain**,

❖ Key Highlights

- The visit signals the growing ties that are developing between Israel and the Gulf countries (Bahrain, Kuwait, Iraq, Oman, Qatar, Saudi Arabia and the United Arab Emirates).
- It comes a couple of years after the UAE — a key ally of the US — normalized relations with Israel in 2020 **after signing the ‘Abraham Accords’**.

Face to Face Centres





❖ About Abraham Accords

- The Abraham Accords are a **joint statement between the State of Israel, the United Arab Emirates, and the United States**, reached on August 13, 2020. It also refers to the agreement reached between **Israel, Bahrain and the UAE to normalize relations between the three**.
- The Abraham Accords stipulated that the UAE and Bahrain would **establish their respective embassies in Israel** and work together with Israel across a range of sectors, including tourism, trade and security.
- The religious significance is that it would **allow for Muslims to one of the holiest sites in Islam**, the Al-Aqsa Mosque in Jerusalem.
- Following the signing of the accords, **Sudan and Morocco** also normalized relations with Israel in the same year.

Tarapur Massacre



❖ Context

- Recently, Bihar CM has said February 15 will henceforth be commemorated as '**Shahid Diwas**' in memory of the 34 freedom fighters.
- They were killed by police in Tarapur town in Munger district 90 years ago.

❖ About Tarapur Massacre

- On **February 15, 1932**, a group of young freedom fighters **planned to hoist an Indian national flag at Thana Bhawan in Tarapur**.
- **Police were aware of the plan**, and several officers were present at the spot. Around 2 pm, even as the **police carried out a brutal lathicharge**, one **Gopal Singh succeeded in raising the flag** at Thana Bhawan.
- A **4,000-strong crowd pelted the police with stones**, injuring an officer of the civil administration.
- The **police responded by opening indiscriminate fire** on the crowd.
- After about **75 rounds were fired**, 34 bodies were found at the spot, even though there were claims of an even larger number of deaths.

National Maritime Security Coordinator



❖ Context

- **Vice Admiral (retd) G Ashok Kumar** has been appointed as **India's first national maritime security coordinator**.

❖ Key Highlights

- In November 2021, the Cabinet Committee on Security finally cleared the creation of the NMSC.
- The NMSC will be **part of the National Security Council Secretariat** headed by the National Security Advisor and will report to NSA.
- The NMSC is tasked to **coordinate** among the Indian Navy, the Coast Guard, security agencies involved in coastal and maritime security and 13 coastal states and Union Territories; improving the country's blue economy needs; ensure coordination between different authorities that work on maritime issues .
- The **need** for such a coordinating agency was first **expressed** by the **Group of Ministers formed after the Kargil War**.
- It is consistent with India's attempt to augment its maritime security following the 26/11 Mumbai terror attack.
- The Navy has also proposed development of a **National Maritime Domain Awareness Centre**, which will be a multi-agency body including the Navy, Coast Guard, intelligence agencies, state marine police forces, ministries of Shipping, Ports and Fisheries among others for a stronger integration for maritime security.

Devasthal Observatory

❖ Context

- A team of scientists, including Indian and International collaborators, have derived the accurate value of **Pluto's atmospheric pressure at its surface**. It is more than **80,000 times less** than the atmospheric pressure at mean sea level on **Earth**.



❖ Key Highlights

- The pressure was calculated from data obtained by observation of **stellar occultation** by Pluto on 6 June 2020 using **3.6-m Devasthal optical telescope (DOT) (India's largest optical telescope)** and 1.3-m Devasthal Fast Optical Telescope (DFOT) telescopes located at Devasthal, Nainital.
- In astronomy, an **occultation** happens when a celestial object gets hidden from the view of the observer due to another celestial object passing in between them. A compilation of twelve stellar occultations by Pluto observed between 1988 and 2016 showed a three-fold monotonic increase of atmospheric pressure during this period.
- The study also confirms earlier findings that Pluto suffers intense seasonal episodes because of large depression on Pluto, known as **Sputnik Planitia**.
- Pluto's poles remain, for decades, in permanent sunlight or darkness over its 248-year long orbital period leading to strong effects on its Nitrogen (N₂) atmosphere.

Photo-dissolution



❖ Context

- Sunlight may have helped remove as much as 17 percent of the oil slicking the surface of the Gulf of Mexico following the 2010 Deepwater Horizon spill, according to a study.

❖ Key Highlights

- When **sunlight shines on spilled oil** in the sea, it can kick off a **chain of chemical reactions**, transforming the oil into **new compounds**.
- Some of these reactions can increase **how easily the oil dissolves in water**, called photo-dissolution.
- The most important factors in photo-dissolution, the researchers found, were the **thickness of the slick** and the **wavelengths** of light. **Longer wavelengths** (toward the red end of the spectrum) dissolved **less oil**, possibly because they are more easily scattered by water, than shorter wavelengths. How long the oil was exposed to light was not as important.
- The researchers estimate irradiation helped dissolve from 3 to 17 percent of surface oil from the Deepwater Horizon spill, comparable to processes such as evaporation and stranding on coastlines.
- Deepwater Horizon oil spill, also called Gulf of Mexico oil spill, is largest marine oil spill in history, caused by an April 20, 2010, explosion on the Deepwater Horizon oil rig—located in the Gulf of Mexico.

Chennaveera Kanavi



❖ Context

- Veteran Kannada Poet Nadoja Chennaveera Kanavi passes away aged 93.

❖ Key Highlights

- Born on **June 18, 1928**, at **Hombal village in Gadag** (then Dharwad) district, Karnataka
- Kanavi has brought out **26 collections of poems** starting with '**Kavyakshi**' in **1949**. He has **published 28 books** on **criticism and essays**. He had the privilege of **several prestigious awards** and positions .
- He was honoured with the Central Sahitya Akademi award for his collection of poems '**Jeevadhvani**' in **1982**, **Karnatak Sahitya Akademi Award** in **1985**, **Karnatak Rajyotsava Award** in **1989**, **Pampa Award** in **1999**, '**Nadoja**' honorary D Litt by **Hampi Kannada University** in **2002**, Honorary doctorate by **Karnatak University** in **2004** and **Ambikatanayadatta National Award** in **2012**. He was a member of **Central Sahitya Akademi**, **Karnatak Sahitya Akademi**, **Kannada Book Authority**, **Karnatak University syndicate**, president of **Akhila Karnataka Kendra Kannada Kriya Samiti**, **Kannada Development Authority** and **Dharwad Sahitya Sambhrama Organising Committee**. Kanavi had the privilege of presiding over the **65th Akhila Bharat Kannada Sahitya Sammelana** held at **Hassan** in **1996**. He had inaugurated the '**Mysuru Dasara Utsav**' in **2016**.