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Prelim Bits 17-10-2021 & 18-10-2021 | UPSC Daily Current Affairs

COP26 Climate Conference

The COP 26 UN Climate Change Conference, hosted by the UK in partnership with Italy, will take place from 31 October to 12 November 2021 in the Scottish Event Campus in Glasgow, UK.

- According to the UNFCCC, COP26 will work towards four goals:
- **Secure global net-zero by mid-century & keep 1.5 degrees within reach**
 - To meet this goal, the countries must accelerate the phase-out of coal, curtail deforestation, speed up the switch to EVs and encourage investment in renewables’.
- Countries to work together to **protect communities and natural habitats**, and build defences, warning systems and resilient infrastructure and agriculture to avoid losses.
- The UNFCCC notes that to deliver on the first two goals, developed countries must make good on their promise to **mobilise at least \$100 billion in climate finance** per year by 2020.
- Leaders will work together to ‘finalise the **Paris Rulebook**’, which are a list of detailed rules that will help fulfil the Paris Agreement.

India’s Actions

- It is time for India to update its Nationally Determined Contributions.
 - NDCs detail the various efforts taken by each country to reduce the national emissions.
- Aggressively figure out how to transition our coal sector
- Sector by sector plans to bring about development - Decarbonise the electricity, transport sector and start looking at carbon per passenger mile.

Conference of Parties

- The Conference of Parties (COP) is a pivotal movement for the world to come together and accelerate the climate action plan.
- **Formation of COP** - The COP comes under the United Nations Climate Change Framework Convention (UNFCCC) set up in 1994.
 - The UNFCCC was established to work towards “stabilisation of greenhouse gas concentrations in the atmosphere.”
- It laid out a list of responsibilities for the member states which included:
 1. Formulating measures to mitigate climate change,
 2. Cooperating in preparing for adaptation to the impact of climate change, and
 3. Promoting education, training and public awareness related to climate change.
- COP members have been meeting every year since 1995. The UNFCCC has 198 parties including India, China and the USA.

COP	Place	Specialty
COP1 (1995)	Berlin, Germany	First conference
COP3 (1997)	Kyoto, Japan	Adoption of Kyoto Protocol
COP8 (2002)	New Delhi, India	Hosted by India
COP21 (2015)	Paris, France	Paris Agreement or Paris Climate Accords

Dr S Muthulakshmi Reddi

Dr Reddi was the first Indian girl student at Madras Medical College, and the first woman house surgeon in the Government Maternity Hospital, Madras.

Dr Reddi was the first woman lawmaker in the country.

- In 1926, the government nominated Dr Reddi to the Madras Legislative Council, where she was the only woman member of the council.
- Later, her colleagues elected her as the deputy president to chair the council's proceedings in the absence of the president.
- **Law on prostitution** - In 1930, the Madras Legislative Council was discussing a law on prostitution.
- But Dr Reddi defined prostitute as a person of either sex, instead of the council's definition to include only women. So, the legislative council dropped the reference to women in the definition of prostitution.
- **For women** - She worked extensively to abolish the Devadasi system.
- Her efforts led to the strengthening of the Madras Immoral Traffic Act.
- She was also able to increase the age at which girls could be rescued from brothels.
- She championed the cause of reservation for women in elected bodies.

Dr Reddi said, "We want reservation not because men would be opposed to our interests, but because women's point of view should be represented by women."

- She co-founded the Women's Indian Association in 1918.
- She opened Avvai Home, Chennai (1930) to shelter, protect and educate the orphan girls, deserted women.
- Also, she opened Cancer Institute, Chennai (1954).

Kerala to Replicate RBK Model

Kerala Agriculture Minister has said that the state will seek the cooperation of Andhra Pradesh in setting up facilities similar to the Rythu Bharosa Kendras (RBKs) in Kerala.

The objective of RBKs is to provide one-stop solution for the farmers, including incentive opportunities and assistance to them

- Rythu Bharosa Kendras were set up at village secretariats, which will function throughout the year.

- **Supply of Inputs** - RBKs supply pre-tested seed, fertilizers, and seedlings to agriculture, aquaculture, and horticulture farmers.
 - All the products are tested at Dr. Y.S.R. Agri Labs and other labs.
- Farmers must place orders through the kiosks and the Agriculture and Aquaculture departments will deliver the stocks in villages.
- RBKs will have digital kiosks and an App to help farmers know the real time market prices.
- **Procurement** - Agriculture Department is the nodal agency to register all crops being cultivated by farmers, season-wise, in e-crop app.
- Department of Civil Supplies, Markfed, Oilfed and CCI will coordinate with Agriculture department to that the ensure procurement operations are taken up.
- **Financial Assistance** - The government is providing annually Rs 13,500 to each farmer. Out of the total amount,
 1. Rs 7,500 is given to the farmers in May for buying crop inputs before the sowing
 2. Rs 4,000 and Rs 2,000 is given in October and January, respectively, to meet harvesting expenditure.
- The state government is also giving free farm insurance cover.

China's Hypersonic Glide Vehicle

A report says that China launched a Long March rocket that carried a nuclear-capable hypersonic glide vehicle, which circled the globe through low-orbit space before cruising down towards its target.

Hypersonic vehicles travel at speeds that are 5 or more times the speed of sound.

Glide vehicles are those that are launched into space on a rocket but orbit the earth under their own momentum.

- Hypersonic Glide Vehicle was being developed by the China Academy of Aerospace Aerodynamics (CAAA) under the state-owned China Aerospace Science and Technology Corporation.
- These vehicles are difficult to track because unlike ballistic missiles, they **don't follow the fixed parabolic trajectory**.
- According to the report, the weapon could, in theory, **fly over the South Pole**. That would pose a big challenge for the US military as its missile defence systems are focused on the northern polar route.
- Hypersonic systems are extremely costly as they primarily use the scramjet technology that needs to be able to handle high temperatures.
- [Scramjets are a category of engines designed to handle airflows of speeds in multiples of the speed of sound.]
- **Implications for India** - This test by China highlights the threat for India's space assets along with the surface assets.
- Offence system operating at these speeds would mean requirement to develop defence systems at these speeds, which India is already doing so.
- But India has already done the '[Anti-satellite \(ASAT\) missile test](#)' to protect its space assets.
- **India's Hypersonic Technologies** - [Hypersonic Technology Demonstrator Vehicle](#); [Advanced Hypersonic Wind Tunnel \(HWT\)](#).

Treatment for Prostate Cancer

Indian Institute of Technology (IIT), Kanpur team identifies a novel target - DLX1 gene - to treat prostate cancer.

DLX1 gene plays an important role in the development of jaws, skeleton, and interneurons in the brain.

DLX1 protein has been used as a urine-based biomarker as it is found at elevated levels in prostate cancer patients.

- The team has discovered that DLX1 gene has an important role to play in the growth and development of prostate cancer.
- DLX1 protein helps in the growth and development of the tumour and the spread of the cancer to other organs in the body (metastasis).
- When the team genetically removed the DLX1 gene that produces the protein, the ability of cancer cells to grow, develop and spread to other parts of the body was compromised.
- The team has further shown that both **androgen receptor and fusion gene product 'ERG'** are responsible for increased level of DLX1 in prostate cancer cells.
 - Androgen receptor is responsible for promoting the development of prostate cancer.
 - About 50% of prostate cancer harbour an aberrant gene which is a product of two genes (TMPRSS2 and ERG) being fused together and results in production of higher levels of ERG protein.
- The team also found that **Bromodomain and extra terminal (BET)** protein assists the function of both androgen receptor and ERG.
- If the BET protein is inhibited using small molecules, the function of both the androgen receptor and the ERG protein to upregulate DLX1 gets inhibited. So, this will help in treatment of cancer.

Source: The Hindu, The Indian Express, New Indian Express, Times of India



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