Youth in India 2022 Report

❖ Context

➢ The report released by the Ministry of Statistics & Programme Implementation.

❖ Key Highlights

- The proportion of youth (15-29 years) in 1991 was **26.6%**.
- During **2021-2036**, the share of the youth population is going to reduce while that of elderly is going to rise steadily.
- States such as **Kerala, TN & HP** may see a higher elderly population than youth by 2036.
- **Bihar, UP, Maharashtra & MP** may have 52% of the country's youth.
- Population aged below 15 years is projected to decline too.

'YOUTH IN INDIA 2022' REPORT

State/Union Territory	% of youth in total population of State/UT		
	2021	2031	2036
Bihar	28.8	27.7	25.5
Himachal Pradesh	25.1	21.4	19.5
Kerala	22.1	20	19.2
Madhya Pradesh	27.7	25.3	24.7
Maharashtra	26.1	22.5	21
Rajasthan	28.7	25.8	24.6
Tamil Nadu	23.2	20.4	19.1
Uttar Pradesh	29.9	26.3	25.1
India	27.2	24.1	22.7

LANCE System

❖ Context

➢ Lockheed Martin has delivered a LANCE system to the US Air Force for operational testing.

❖ Key Highlights

- It is known as **Laser Advancements of Next-Generation Compact Environments (LANCE)**.
- It is a compact directed energy weapon.

- It is being considered as an important development as the size of the energy weapon has been reduced to that of a pod which can be mounted on a fighter aircraft.
- With this, the **fighter aircraft can shoot down the incoming missile**.

❖ Endeavours by other countries

- Apart from the US, several other countries have robust laser energy weapon development programmes. This includes **China, Russia, Israel, Germany, France and India**.
- Israel recently tested its laser weapon to shoot down a drone from the ground.
- Russia had claimed that it had tested a laser weapon - **Zadira** - in Ukraine recently.
- India, too, is developing a directed energy weapon named **DURGA II,** which stands for **Directed Unrestricted Ray-Gun Array**.
- It is said to be a light energy weapon of 100 kilowatt capacity.

Marburg Virus Disease

❖ Context

➢ Recently, **Ghana has reported its first-ever suspected cases of Marburg virus disease**.

❖ About

- The disease was **first identified in 1967 in Germany's Marburg** and Frankfurt and Serbia's Belgrade following two large outbreaks.

- It's a **highly infectious viral haemorrhagic fever** with a fatality ratio of up to 88 per cent.
- It **belongs to the same family as Ebola.**
- The **incubation period** for Marburg virus disease varies from 2 to 21 days.
- **Symptoms:**
  - Illness caused by Marburg virus begins abruptly, with **high fever, severe headache, severe malaise, watery diarrhea, abdominal pain** and **cramping, nausea and vomiting**.
  - Muscle aches and pains are a common feature.
- **Transmission:**
  - **Fruit bats of the Pteropodidae Family** are the key carriers of the disease.
  - It typically infects humans following **prolonged exposure to mines or caves** inhabited by Rousettus bat colonies.
  - **Human-to-human transmission** takes place through direct contact with the blood, secretions, organs or other bodily fluids of infected people.
- **Treatment:**
  - There are **no specific vaccines** or antiviral treatments to treat the disease.

Global Gender Gap Index

❖ Context

➢ Recently, The **Global Gender Gap Index for 2022** was released by the **World Economic Forum (WEF).**

❖ Key Highlights

- **No country achieved full gender parity.**
- The top 10 economies closed at least 80% of their gender gaps, with **Iceland (90.8%) leading the global ranking.**
- Iceland was the only economy to have closed more than 90% of its gender gap.
- Other Scandinavian countries such as **Finland (86%, 2nd), Norway (84.5%, 3rd) and Sweden (82.2%, 5th)** are in the top five.
- It ranks New Zealand at 4th (84.1%)

❖ Findings Related To India

- It ranks **India at 135** out of 146 countries.

INDIA'S REPORT CARD

Index/sub-index	2022 (146 countries)		2021 (156 countries)	
	Rank	Score	Rank	Score
Global Gender Gap Index	135	0.629	140	0.625
Political empowerment	48	0.267	51	0.276
Economic participation & opportunity	143	0.350	151	0.326
Educational attainment	107	0.961	114	0.962
Health and survival	146	0.937	155	0.937

Source: World Economic Forum

- India also ranks poorly among its neighbors and is behind Bangladesh (71), Nepal (96), Sri Lanka (110), Maldives (117) and Bhutan (126).
  - Only Iran (143), Pakistan (145) and Afghanistan (146) perform worse than India in south Asia.
- In **2021**, **India was ranked 140 out of 156 countries.**
- In 2022, India's overall score has improved from 0.625 (in 2021) to 0.629.

❖ About Global Gender Gap Index

- It is **released by WEF.**
- It was **launched in 2006.**
- The Global Gender Gap index benchmarks the current state & evolution of gender parity across **four key dimensions :**
  - Economic Participation and Opportunity,
  - Educational Attainment,
  - Health and Survival
  - Political Empowerment.
- It is the longest-standing index, which **tracks progress towards closing these gaps** over time since its inception in 2006.
- On each of the four sub-indices as well as on the overall index the GGG index provides scores between 0 and 1.
  - **1 shows full gender parity and 0 is complete imparity.**

Green Hydrogen from Biomass

❖ Context

➢ Recently, a team of researchers from the **Indian Institute of Science (IISc.)** has developed an innovative technology to produce hydrogen from biomass, a renewable energy source.

❖ Key Highlights

- The project was **supported by the Ministry of New and Renewable Energy** and the Department of Science and Technology.
- The technology also dovetails with the **National Hydrogen Energy Roadmap,**
  - It is an initiative of the Government of India that aims to **promote the use of hydrogen as a fuel and reduce dependence on fossil fuels.**
- **Mechanism:** Biomass is first **converted into syngas** in a novel reactor using oxygen and steam.
  - Syngas is a hydrogen-rich fuel gas mixture.
  - In the second step, pure hydrogen is generated from syngas using an indigenously developed low-pressure gas separation unit.
- **Benefits:**
- This process is a highly **efficient method** of generating green hydrogen.
- This process is **environmental friendly** because:
  - It is c**arbon negative**.
  - **Carbon-based by-products** are solid carbon, which serves as a carbon sink, and carbon dioxide, which can be used in other value-added products,
- **Significance:** India uses nearly 50 lakh tonnes of hydrogen for various processes in different sectors.
  - The hydrogen market is expected to grow substantially in the coming years.
  - Most of the hydrogen we currently use comes from fossil fuels through a process called steam methane reforming route.

News in Between the Lines

Dark Matter

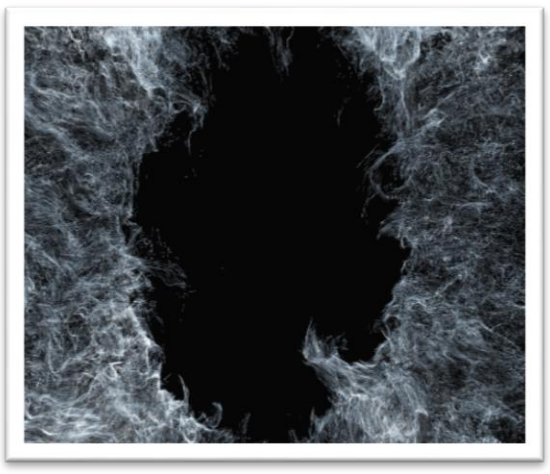
❖ Context

➢ Recently, a **dark matter detector experiment named LUX-ZEPLIN (LZ)** in South Dakota in the U.S. was in news.

➢ This is the **most sensitive dark matter detector in the world**.

❖ Dark Matter

- Many physicists strongly believe that the e**ntire visible part of the universe forms only 5% of all matter in it.**



- They believe the **rest is made up of dark matter and dark energy.**
- All **interactions in the universe** are a result of **four fundamental forces acting on particles:**
  - Strong nuclear force.
  - Weak nuclear force.
  - Electromagnetic force
  - Gravitation.
- Dark matter is **made up of particles that do not have a charge** - which means they do not interact through electromagnetic interactions.
- So, these are particles that are “dark”, namely because **they do not emit light,** which is an electromagnetic phenomenon, and “matter” because they possess mass like normal matter and hence interact through gravity.
- **Gravitational force**, besides not being fully integrated and understood by particle physicists, **is extremely weak.**
- A particle that interacts so weakly becomes **elusive to detect.**

I2U2

❖ **Context**

- The PM of India will participate in the **first-ever I2U2 Virtual Summit.**

❖ **About I2U2**

- I2U2 stands for **India, Israel, the UAE, and the US.**
- It was also referred to as the **‘West Asian Quad’** by Ahmed Albanna, Ambassador of the UAE to India.
- **Origin:** I2U2 was **initially formed in October 2021** following the Abraham Accords between Israel and the UAE, to deal with issues concerning maritime security, infrastructure and transport in the region.
  - At that time, it was called the **‘International Forum for Economic Cooperation’.**
- **Aims:** To **discuss common areas of mutual interest.**
  - To **strengthen the economic partnership** in trade and investment in respective regions and beyond.

ISARC

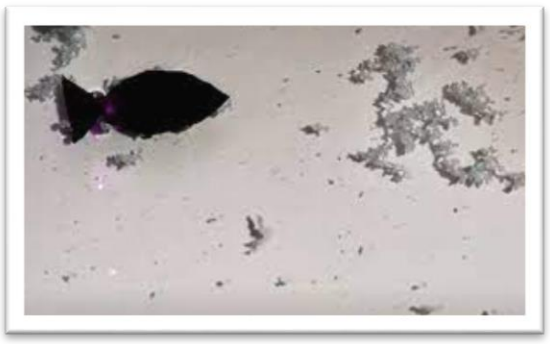
❖ **Context**

- The Department of Agriculture & Farmer Welfare & the International Rice Research Institute (IRRI) signed an agreement on commencement of Phase -2 activities of **IRRI South Asia Regional Centre.**

❖ **Key Highlights**

- ISARC was established at the campus of the National Seed Research and Training Centre (NSRTC) in **Varanasi** in **2017**.
- It is the **first and biggest research centre** of the IRRI across the world **outside the Philippines.**
- One of the critical developments, in the first phase, have been development of one low and one intermediate glycaemic index (GI) rice varieties: **IRRI 147 (GI 55) and IRRI 162 (GI 57)**, respectively. They will help in reducing India’s increasing trend of diabetes.

Near Infrared Light



❖ **Context**

- Scientists at Sichuan university, **China** have developed a fish shaped robot, made of **polyurethane**, that can **eat microplastics in shallow water**.

❖ **Key Highlights**

- The **black robot fish (1.3 cm size) moves under the direction of a near-infrared light**.
- Infrared light lies between the visible and microwave portions of the electromagnetic spectrum.
- **Near infrared light is closest in wavelength to visible light** and far infrared is closer to the microwave region of the electromagnetic spectrum.
- It can be produced by an LED or a laser.

Privatisation of all PSBs Report

❖ **Context**

- A report on privatisation of PSBs has been prepared by National Council of Applied Economic Research (NCAER) Director General and a member of the Economic Advisory Council to the Prime Minister.

❖ **Key Highlights of the Report**

- The Centre should privatise all public sector banks (PSBs) except State Bank of India (SBI).
- The government should start privatisation exercises with two strong banks -ones with the highest returns on assets and equity, and the lowest NPAs in the last five years.

Mark-to-Market Losses

❖ **Context**

- ➢ The banking sector is likely to witness mark-to-market (MTM) losses of Rs 10,000-13,000 crore in the first quarter of FY23 in the wake of the rising bond yields.

❖ **Key Highlights**

- Mark-to-market loss is an **accounting entry**.
- It occurs when government securities held by banks are valued at the current market value.
- If a security was purchased at a certain price and the market price later fell, the holder would have an unrealised loss.
- Marking the security down to the new market price would result in MTM loss.

CERVAVAC

❖ **Context**

- ➢ Drug Controller General of India (DCGI) has given market authorisation to Serum Institute of India (SII) for CERVAVAC vaccine.

❖ **Key Highlights**

- It is the **country's first** quadrivalent **human papillomavirus (HPV)** vaccine.
- Though the vaccines were available in the private market, the new vaccine will make the treatment accessible and affordable.
- HPV is a common virus that is passed during sex. Long lasting infection with certain types of HPV is the **main cause of cervical cancer** in women.
- Cervical cancer accounts for **9.4% of all cancers in India**.
- It is the **second most common** cancer of women in India despite being largely **preventable & treatable** if routine gynaecological screening is done.
- According to WHO, the cancer can be eliminated if the vaccine can be given to all prepubertal girls globally.
- WHO has set **Cervical Cancer Elimination Strategy Targets for 2030**. According to it,
  - 90% of girls should be fully vaccinated by the age of 15.
  - 70% of women should be screened with a high performance test by 35 years and again by 45 years.

Asadha Purnima

❖ **Context**

- ➢ PM recalls the noble teachings of Lord Buddha on the sacred occasion of Ashadha Purnima whose celebrations took place at Mulagandha Kuti Vihara in Sarnath, UP.

❖ **Key Highlights**

- Ashadha Purnima, also known as **Guru Purnima**, is the second most sacred day for Buddhists after the Buddha Purnima or the Vaishakha Purnima.
- After five weeks of achieving enlightenment under the Bodhi tree, Buddha went from Bodhgaya to Sarnath, Uttar Pradesh.
- There, he gave his first sermon, **Dhammacakkappavattana Sutta or 'Turning the Wheel of Dhamma'**, to the first five ascetic disciples **(pañcavargika)**. The sermon contains the fundamental principles of his teaching expressed in the **Four Noble Truths.**
- It also marks the birth anniversary of Maharishi Ved Vyasa, the author of the Mahabharata. Thus, the day is also known as **Vyasa Purnima**.
- Mulagandha Kuti Vihara houses the holy Buddha relics.

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