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# CRUX10

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MINISTRY OF SCIENCE AND TECHNOLOGY

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INDIAN EXPRESS

Page 1

# DWARFING DISEASE IN PLANTS

(Syllabus: GS Paper 2 - Sci & Tech)

## A mystery 'dwarfing' disease hits paddy crop in Punjab and Haryana

ANJU AGNIHOTRI CHABA & HARISH DAMODARAN
LUDHIANA, AUGUST 21

EVEN AS overall acreage under rice has fallen by nearly 3.1 million hectares (mh) during this kharif cropping season over the last year — mostly in the monsoon-deficit states of Uttar Pradesh, Bihar, Jharkhand and West Bengal — there is a fresh source of worry. And it's emanating from the country's Green Revolution bowl of Punjab and Haryana.

Over the past fortnight or more, many farmers in the two

CONTINUED ON PAGE 4



Samples of healthy and stunted paddy plants from a farmer's field at Rudrapur, Uttarakhand. *Express*

**Context**: Over the past fortnight or more, many farmers have reported a mystery "dwarfing" disease of paddy that agricultural scientists are still to identify.

- **Scientists don't have an answer to the mystery disease yet.**

**Dwarfism**

- A considerable defect in growth (height).
- Factors Determining Growth
  - Genetic (hereditary)
  - Nutritional
  - Hormonal



Crop affected: **WHEAT**
Disease: **STEM RUST**
50 - 70% crop losses under suitable conditions in weeks.
90% of wheat varieties vulnerable to new strain.



Crop affected: **BANANA**
Disease: **PANAMA DISEASE**
Wiped out almost all banana plantations in Central and South America in 1950s.



Crop affected: **ORANGE**
Disease: **CITRUS GREENING**
No known cure.
Decimated Florida land planted with oranges by 29%.



Crop affected: **COFFEE**
Disease: **COFFEE RUST**
Central America could lose up to 40% of coffee crop.
Halved Colombia's coffee output in 2008.



Crop affected: **POTATO**
Disease: **LATE BLIGHT**
Caused Irish Potato Famine of 1840s; 1 million starved.
Worldwide costs exceed $5 billion annually.



Crop affected: **AVOCADO**
Disease: **LAUREL WILT**
Kills avocado trees in U.S.
Threatens Florida and California avocado crops.
No management program yet.



Crop affected: **GRAPE**
Disease: **PIERCE'S DISEASE**
No known cure.
Kills entire vine in two years.
CA grapes at risk.



Crop affected: **COCOA**
Disease: **FROSTY POD**
All Latin American chocolate-growing regions affected.
Caused Brazilian farmers to abandon cocoa farms.



Crop affected: **HOPS**
Disease: **POWDERY MILDEW**
Wiped out 20% of hops grown in U.S. in 1997.
Controlled with fungicides.

INDIAN EXPRESS

Page 11

# ASSAM-MEGHALAYA BORDER DISPUTE

(Syllabus: GS Paper 3 - Internal Security)

## Border talks between Assam and Meghalaya: Phase 2 begins

EXPRESS NEWS SERVICE
GUWAHATI, AUGUST 21

THE SECOND phase of border talks between Meghalaya and Assam commenced on Sunday with the two states deciding to form three regional committees to resolve the remaining disputed areas.

The announcement came after Meghalaya Chief Minister Conrad Sangma and Assam Chief Minister Himanta Biswa met in Guwahati on Sunday.

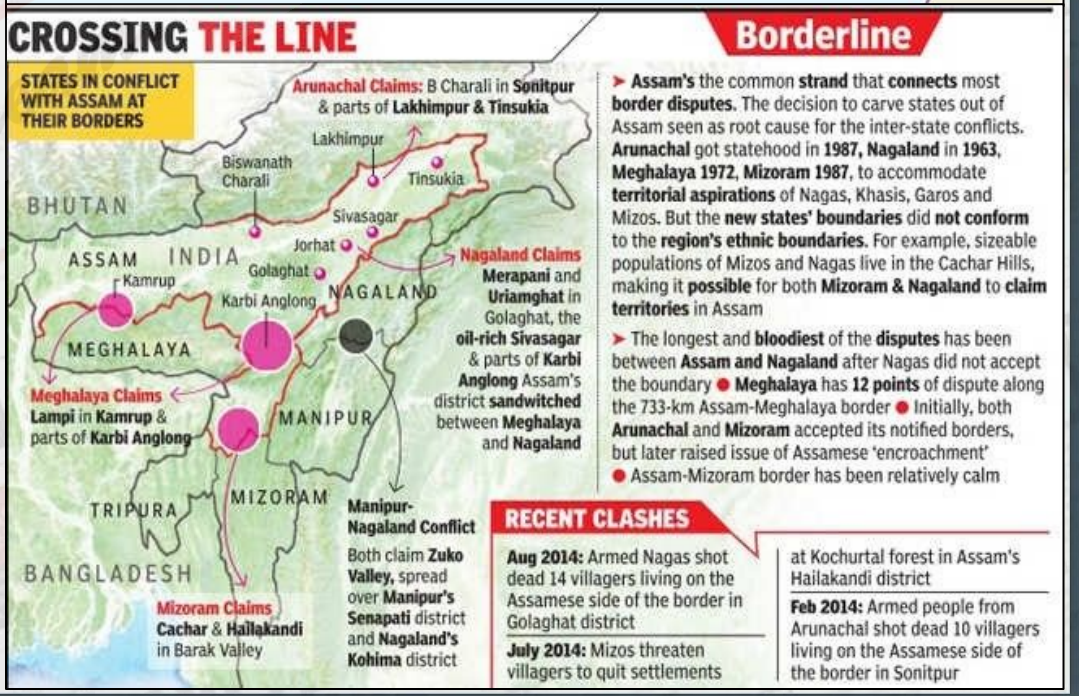
Over the years, the 884-km border between the two states has witnessed frequent flare-ups in 12 disputed sites. In March this year, the chief ministers of the two states signed a pact in the presence of Union Home Minister Amit Shah resolving differences in a 36.79 sq km area comprising six out of 12 sites – Tarabari, Gizang, Hahim, Boklapara, Khanapara-Pilangkata and Ratacherra.

**Context**: The Assam and Meghalaya governments have signed an agreement to settle six of the 12 contested spots on the 884-km border they share.

**Assam-Meghalaya Border dispute**

- Meghalaya was carved out of Assam under the Assam Reorganisation Act, 1971, a law that it challenged, leading to disputes.
- Assam and Meghalaya share an 885-km-long border.
- As of now, there are 12 points of dispute along their borders.
- **Langpih**: A major point of contention between Assam and Meghalaya is the district of Langpih in West Garo Hills bordering the Kamrup district of Assam.
- Langpih was **part of the Kamrup district** during the British colonial period but post-Independence, it became part of the Garo Hills and Meghalaya.
- **Assam considers it to be part of the Mikir Hills** in Assam.
- **Meghalaya has questioned Blocks I and II of the Mikir Hills** -now Karbi Anglong region - being part of Assam.
- Meghalaya says these were parts of erstwhile United Khasi and Jaintia Hills districts.



LIVEMINT Page 1

# INDIA-UK FREE TRADE AGREEMENT

## (Syllabus: GS Paper 3 - Economy)

# Deciphering the India-UK Free Trade Agreement

BY JAGADISH SHETTIGAR & POOJA MISRA

India and the UK recently concluded the fifth round of talks for a free trade agreement (FTA), designed to encourage trade and investment relations. Expectations are that an FTA will be signed by October 2022. *Mint* explores the ambit and potential of the India-UK FTA.

**Context**: India and the UK recently concluded the fifth round of talks for a free trade agreement (FTA).

**About FTA**:

- An agreement between two or more countries to minimize barriers to imports and exports of products and services among them.
- It includes reducing tariffs, quotas, subsidies or prohibitions which could limit exchange of goods and services across borders.
- The FTA might allow free trade among the two nations with a few exceptions.
- This involves a formal and mutual agreement signed between two or more countries.
- The agreement could be comprehensive and include goods, services, investment, intellectual property, competition, government procurement and other areas.

**Countries with which India has FTAs**

- As of April 2022, India had 13 FTAs, including the South Asian Free Trade Area, and with Nepal, Bhutan, Thailand, Singapore, Japan and Malaysia.
- The 13 also include the agreements with Mauritius, UAE and Australia signed during the last five years.
- Additionally, India has also signed six limited Preferential Trade Agreements.

**Status of the India-UK FTA**

- India and the United Kingdom have a multi-dimensional strategic partnership, and are actively engaged in bilateral trade.
- The two countries agreed to begin formal negotiations for an FTA in January 2022, aiming to advance trade and investment relations between them.
- The fifth round of FTA talks concluded recently, and the expectation is that negotiations would be completed and the stage set for the FTA by October.
- Bilateral trade stands at $50 billion (ie approx. $35 billion in services and $15 billion merchandise).
- India is UK's **12th largest trading partner** and accounts for 1.9% of UK's total trade in four quarters to the end of 2022.
- UK is the **seventh largest export** destination for India.
- The **trade balance** maintained by India with UK has largely been a surplus.
- **Top three services exported from India to UK** are technical, trade-related and other business services, professional and management consulting services and travel.
- **Significance**: Apart from reducing tariffs, the FTA also looks at lowering non-tariff barriers, particularly technical barriers to trade around rules of origin, investor protection and IPR.

LIVEMINT Page 2

# CLEAN HYDROGEN

## (Syllabus: GS Paper 3 - Environment & Ecology)

# 'India can be exporter of clean hydrogen'

Staff writer
feedback@livemint.com
NEW DELHI

India can become a net exporter of clean hydrogen and provide global leadership in the space, Union minister of state (independent charge) for science and technology Jitendra Singh said on Sunday.

Singh was speaking at the launch of an indigenously developed hydrogen fuel cell bus developed by KPIT-CSIR in Pune.

"India can pole-vault from being net importer of fossil energy to becoming net exporter of clean hydrogen energy and thus, providing global leadership in hydrogen space by becoming a large green hydrogen producer and supplier of equipment for green hydrogen," Singh said, according to a statement from the ministry of science and technology.

Singh said green hydrogen enables deep decarbonization of difficult-to-abate emissions from the refining, fertilizer, steel and cement industries and also from the heavy commercial transportation sector.

He said the only effluent from the hydrogen fuel cell bus is water, making it possibly the most environmentally friendly mode of transportation. By contrast, a single diesel bus plying on long distance routes typically emits 100 tonnes of $CO_2$ annually and there are over a million such buses in India.

**Effluent from hydrogen fuel cell bus is water, making it most environmentally friendly mode of transportation**

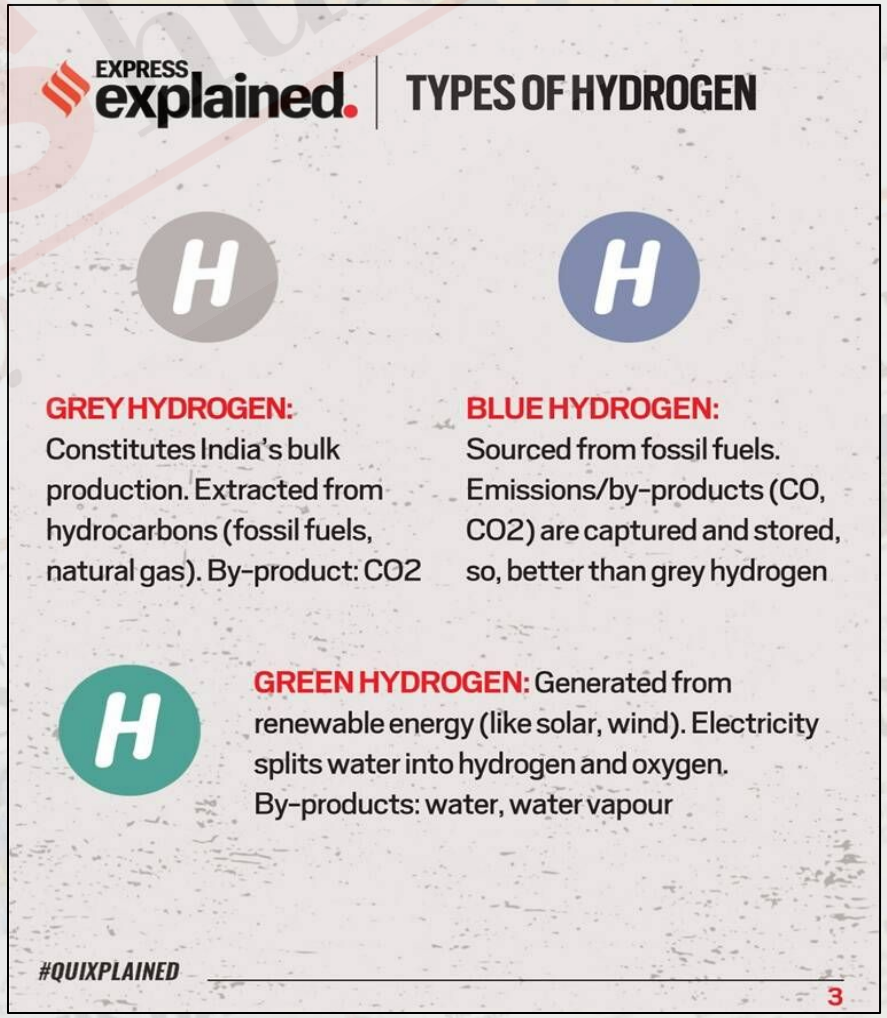
Lauding the joint development efforts of KPIT and CSIR-NCL, he said the technology prowess of Indian scientists and engineers is no less than that of the best in the world. In addition, this comes at a much lower cost.

"The high efficiency of fuel cell vehicles and the high energy density of hydrogen ensures that the operational costs for fuel cell trucks and buses are lower than diesel powered vehicles and this can bring freight revolution in India," the minister said.

**Context**: India can become a net exporter of clean hydrogen and provide global leadership in the space.

**About hydrogen**

- Hydrogen is a clean alternative to methane, also known as natural gas.
- It's the most abundant chemical element, estimated to contribute 75% of the mass of the universe.
- Hydrogen can be produced from a variety of resources, such as natural gas, nuclear power, biogas and renewable power like solar and wind.
- **Environment Friendly:** the only byproducts are water and heat.
- Hydrogen is a **non-toxic** substance
- **Ideal Spaceship Fuel:** Hydrogen energy efficiency and power make it an ideal fuel source for spaceships.
- **Disadvantages**
  - Hydrogen lacks smell which makes any leak detection almost impossible.
  - Highly flammable and volatile substance, its potential dangers make its transportation and storage very challenging.
- The **challenge** is harnessing hydrogen as a gas on a large scale to fuel our homes and businesses.



THE HINDU Page 11

# LINKING VOTER'S ID WITH AADHAR

(Syllabus: GS Paper 2 - Polity & Governance)

# 'Forcible' Aadhaar-voter ID linking

## While the govt. says the process is voluntary, reports of coercion emerge

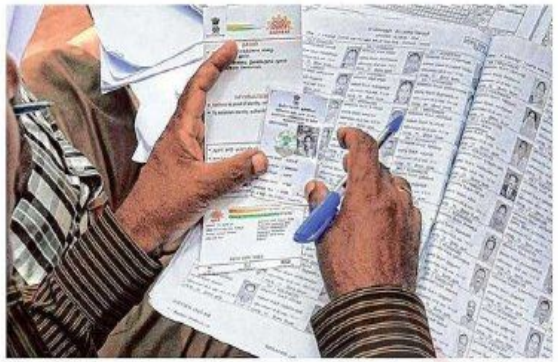
SPECIAL CORRESPONDENT
NEW DELHI

Despite clarifications from various government authorities that the linking of Aadhaar with the voter identity card is "voluntary", there have been instances of people being warned by booth-level officers that their voter ID would be cancelled if the linking is not done.

In a tweet about one such case, the Internet Freedom Foundation (IFF), which advocates digital rights and privacy, alleged that a booth-level officer called one of its staff members seeking the Aadhaar number, threatening that "or else they'll be deleted from the electoral roll".

The contentious Election Laws (Amendment) Bill, 2021, which allows for the linking of electoral data with the Aadhaar number, was passed by Parliament in December 2021, amid strong protests by the Opposition.

At the time, Union Law Minister Kiren Rijiju informed Parliament that linking would be voluntary.



The ECI started a campaign on August 1 for the linking of Aadhaar details with the voter ID. • REPRESENTATIVE PHOTO

Responding to the tweet thread by the IFF, the Chief Electoral Officer of Haryana reiterated the same.

"Submission of Aadhaar number in Form 6B is voluntary. No entry in electoral roll shall be deleted on the ground of non-submission of Aadhaar number. Purpose of obtaining Aadhaar number is for authentication of electors' entries in electoral roll & extending better electoral services," the CEO said in a tweet.

Replying to a similar tweet on the issue by a different account, the Chief Electoral Officer of Delhi said that the matter had been "noted to seek more details".

"Linking of Voter id with AADHAAR is voluntary..." the tweet added.

### New form

However, the IFF pointed out that the Union Law and Justice Ministry recently amended Form 6, and introduced Form 6B to the Registration of Electors Rules, 1960. "These forms make it compulsory for those who have Aadhaar to provide their Aadhaar numbers in order to vote," it noted.

The Election Commission of India started a campaign on August 1 for the "voluntary" linking of Aadhaar details with the voter ID. As part of the campaign, the commission has set up camps and begun door-to-door collection of data. It has collected over 2.5 crore Aadhaar details till August 11.

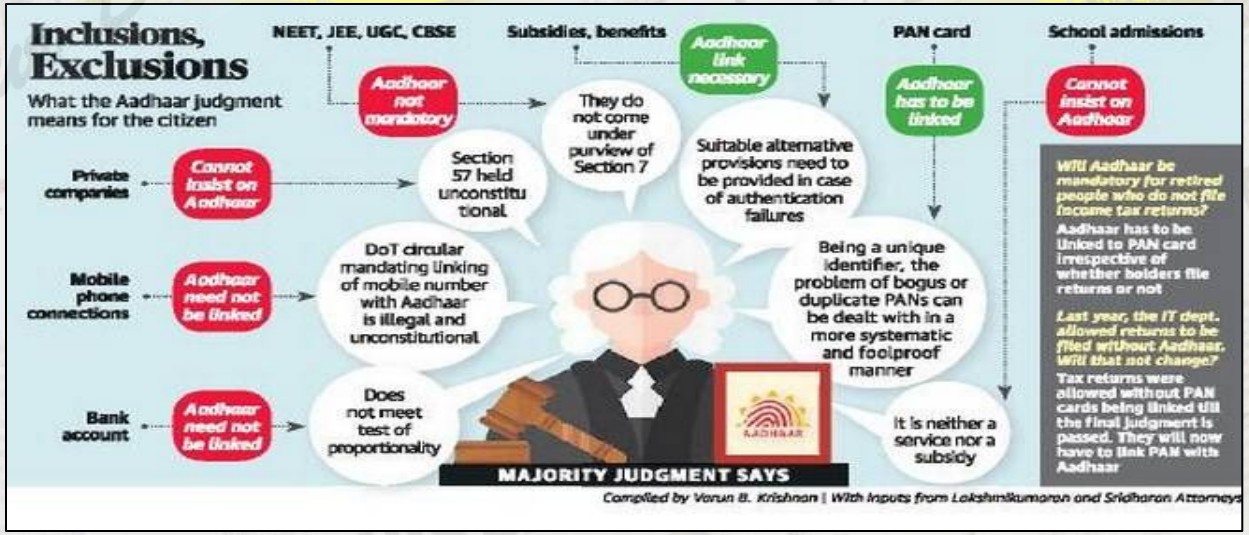
Mr Rijiju told Parliament in August that the reasons for linking voter IDs with Aadhaar numbers were to streamline electoral rolls and the process of registration of migrated voters without duplication in the rolls and to curb the menace of multiple enrolment of the same person in different places.

The move, however, has drawn flak from sections of society citing violations to an individual's right to privacy. Many have also flagged concerns that the linkage would help in creating voter profiles which may be used to influence the voting process.

**Context**: Despite clarifications from various government authorities that the linking of Aadhaar with the voter identity card is "voluntary", there have been instances of people being warned by booth-level officers that their voter ID would be cancelled if it is not linked to their Aadhaar number.

**Election Laws (Amendment) Bill, 2021**

- The Bill amends the Representation of the People Act, 1950 and the Representation of the People Act, 1951 to implement certain electoral reforms.
- **Key features of the bill**
  - Linking electoral roll data with Aadhaar:
  - Qualifying date for enrolment in electoral roll
  - Requisitioning of premises for election purposes
  - **Gender-neutral provisions:** replaces the term 'wife' with 'spouse' in both the RPA Acts (1950 & 1951).



THE HINDU Page 14

# CONFLICT IN SOMALIA

(Syllabus: GS Paper 1 - Geography)

# Somali security forces end hotel siege, rescue 106 hostages

## 21 people killed, dozens wounded in 30-hour battle

ASSOCIATED PRESS
MOGADISHU

Somali authorities on Sunday ended a deadly attack, in which 21 people were killed and dozens more wounded, when gunmen stormed a hotel in the capital.

It took Somali forces more than 30 hours to contain the fighters who had stormed Mogadishu's Hayat Hotel on Friday evening in an assault that started with loud explosions.

The siege ended around midnight, police commissioner Abdi Hassan Hijar told reporters. Mr. Hijar said that a total of 106 people, including children and women, were rescued during the siege, which ended around midnight.

Health Minister Dr. Ali Haji Adam reported 21 deaths and 117 people wounded, with at least 15 in critical condition. He noted that some victims may not have been brought to hospitals.

Police are yet to give a detailed explanation of how the attack unfolded and it remains unclear how many gunmen entered the hotel.

Ismail Abdi, the hotel's manager, said that security forces were still working to clear the area. No more gunfire could be heard after 9 a.m. local time. Onlookers gathered outside the gates of the badly damaged hotel on Sunday morning, surveying the scene.

The Islamic extremist group al-Shabaab, which has ties with al-Qaeda, claimed responsibility for the attack, the latest of its frequent attempts to strike places visited by government officials.

**Context**: Somali authorities ended a deadly attack, in which 21 people were killed and dozens more wounded, when gunmen stormed a hotel in the capital.

**Map Study**



TIMES OF INDIA

Page 5

# WOMEN-CENTRIC NREGS

(Syllabus: GS Paper 2 - Government policies & interventions)

# Create women-centric NREGS work: Parl Panel

## In Last 5 Yrs, They Took 50% Of Jobs Under Scheme

Ambika.Pandit@timesgroup.com

**New Delhi:** Noting that on average, women's participation in the workforce under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has been hovering over the 50% mark for more than five years, which is way higher than the stipulated one-third mark, a parliamentary committee has asserted that the government must take measures for better promotion of "women-centric works" through creation or linking of existing livelihood projects under the ambit of the scheme.

It asserted that "the aim should be to provide reasonable platforms for the rural women to strengthen their economic prowess even further".

An assessment of data in public domain on NREGS from 2016 shows that the proportion of women accounting for 'persons days' of work generated has been more than 50%. Given that NREGS is a demand-driven wage employment programme, this data reveals that the scheme is clearly seen by women as a route to a livelihood as compared to men, many of whom probably choose to pick up work on contract or outside the village that get them higher wages.

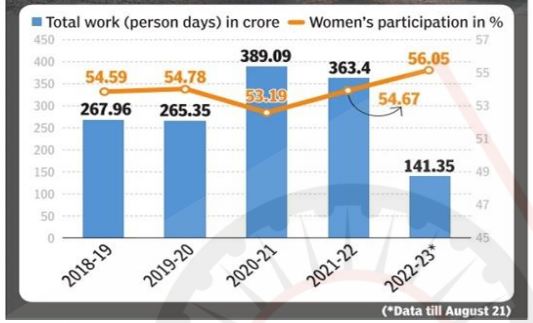
The standing committee on rural development and panchayati raj in its report reiterates its proposal that the long standing demand for increase in wages must be addressed through suitable linkage to the inflation index. It also reiterates that the ministry of rural development needs to bridge the wage disparity among states by notifying a uniform wage rate structure. The report highlights the fluctuation in wage rates ranging from Rs 193 to Rs 318 across different states and Union territories to emphasise its point.

The parliamentary panel reiterated its recommendation to devise means through which already existing women 'self help groups' engaged in farm works or animal rearing activities can be linked to MGNREGS to ensure increased participation of women.

The department of rural development, in its reply to the committee, said that to encourage women there are features like separate schedule of rates for women; no discrimination in wages and women caretakers to look after children up to five years. The committee, however, states that after thoroughly examining the reply that "much more needs to be done" regarding the "linkage of existing women-centric works along with finding the practicability of more women-centric programmes".

**A FAIR SHARE**






**Context**: A parliamentary committee has asserted that the government must take measures for better promotion of "women-centric works" through creation or linking of existing livelihood projects under the ambit of the scheme.

**Mahatma Gandhi National Rural Employment Guarantee Scheme (Mahatma Gandhi NREGS)**

- It is **a demand driven wage employment programme** which provide for the enhancement of livelihood security of the households in rural areas of the country
  It provides at least **one hundred days of guaranteed wage** employment in every financial year to every household whose adult members volunteer to do unskilled manual work.
- **As per the Para 15 of Schedule-II of the MGNREG Act,** "Priority shall be given to women in such a way that at least one-third of the beneficiaries shall be women who have registered and requested for work. Efforts to increase participation of single women and the disabled shall be made".
- It is a **gender positive programme** which promotes participation of women by providing wage parity with men, provision of separate schedule of rates of wages for women, facilities for crèche, work-side sheds for children and child care services.
- In convergence with **Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM)**, women mates have also been introduced, which again facilitate the participation of women.
- The Scheme also endeavors to provide works near the residence of the beneficiaries. These measures enhance participation of women.
- **Participation of women:**

| Financial Year | 2018-19 | 2019-20 | 2020-21 | 2021-22 |
|---|---|---|---|---|
| Women participation rate (%) | 54.59 | 54.78 | 53.19 | 54.54 |
| computed women person-days (in crore) | 125.12 | 145.36 | 206.96 | 187.38 |

DOWN TO EARTH

August 22

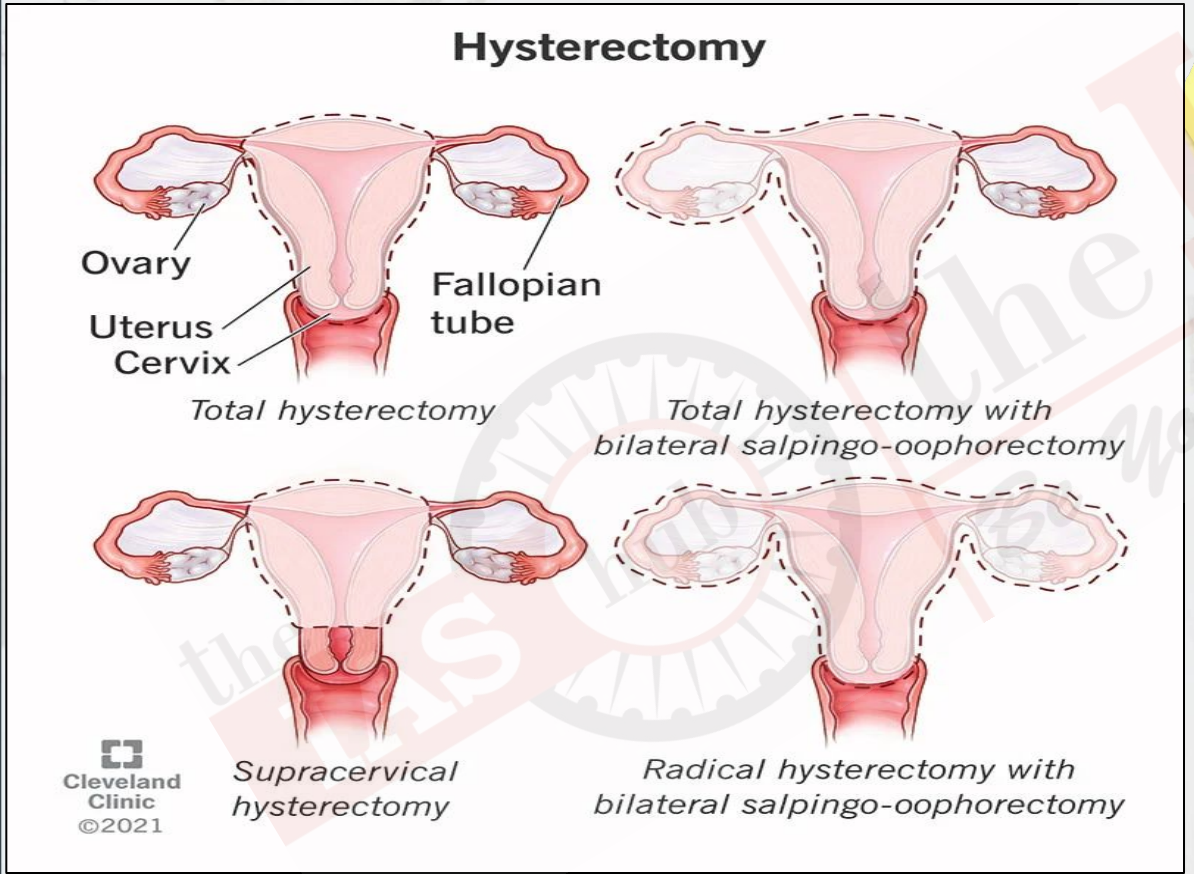
# HYSTERECTOMY

## (Syllabus: GS Paper 3 - Sci & Tech)

## Rise in hysterectomies among young women, at private hospitals will cause a crisis; here is why

Undergoing hysterectomy at younger ages can have adverse health impacts including osteoporosis and cardiovascular diseases

NEXT NEWS >




**Context**: Data from latest fifth round (NFHS-5) for 2019-21 shows that 3.3 per cent of women in the age group of 15-49 have undergone hysterectomy.

- This is a marginal increase from NFHS-4, which recorded a rate of 3.2 per cent.
- NFHS-5 records that the median age for hysterectomy is 34.6 years, while the median age was 34 years during NFHS-4.
- In 2019-21, the highest prevalence of hysterectomies was observed in Andhra Pradesh (8.7 per cent), Telangana (8.2 percent), and Bihar (6 percent), while the lowest was in Meghalaya (0.7 per cent), Sikkim (0.8 per cent) and Chandigarh (0.9 per cent).

**Hysterectomy**

- A hysterectomy is an operation to remove the uterus. This surgery may be done for different reasons, including:
  - Uterine fibroids that cause pain, bleeding, or other problems
  - Uterine prolapse, which is a sliding of the uterus from its normal position into the vaginal canal
  - Cancer of the uterus, cervix, or ovaries
  - Endometriosis
  - Abnormal vaginal bleeding
  - Chronic pelvic pain
  - Adenomyosis, or a thickening of the uterus
- **Types of Hysterectomy**
  - **A supracervical or subtotal hysterectomy** removes only the upper part of the uterus, keeping the cervix in place.
  - **A total hysterectomy** removes the whole uterus and cervix.
  - **A radical hysterectomy** removes the whole uterus, tissue on the sides of the uterus, the cervix, and the top part of the vagina. Radical hysterectomy is generally only done when cancer is present.

PIB

August 22

# LOCALIZATION OF SUSTAINABLE DEVELOPMENT GOALS

## (Syllabus: GS Paper 3 - Environment & Ecology)

Posted On: 21 AUG 2022 6:39PM by PIB Delhi

A two-day National Workshop on Localization of Sustainable Development Goals (LSDGs) in Panchayats through Thematic Approaches on Theme 6 – Village with Self-Sufficient Infrastructure is being organized at Chandigarh, Punjab during 22nd – 23rd August, 2022. Shri Bhagwant Singh Mann, Chief Minister of Punjab, Shri Kapil Moreshwar Patil, Union Minister of State for Panchayat Raj and Shri Kuldeep Singh Dhaliwal, Minister of Rural Development & Panchayat, Government of Punjab will grace the inaugural function on the 22nd August, 2022. An approximate number of 1300 Elected Representatives of Panchayati Raj Institutions from across the country will attend the workshop. As many as 34 States and Union Territories are participating in the National Workshop.

**About National Workshop on LSDGs**

- **The main objective of the National Workshop** will be exhibiting the exemplary strategies, approaches, convergent actions and innovative models in context to capacity building & training; best practices; monitoring framework, incentivization and reflection of themes of SDGs into Gram Panchayat Development Plan (GPDP).
- **The National workshop will provide a platform** for the peer learning of Panchayats on various models to institutionalize the process of LSDGs through the lens thematic approach at grassroots level. Further, it will provide an opportunity of exchange of information/ ideas through international organization and exchange programmes in local governance.

**About National Workshop on LSDGs**

- Ministry of Panchayati Raj is anchoring the **process of Localization of Sustainable Development Goals** (LSDGs) in Panchayats / Panchayati Raj Institutions (PRIs).
- To this end, it has been sincere endeavour of the Ministry of Panchayati Raj to **bring together different stakeholders** at one forum in a 'Whole of Government' and 'Whole of Society' approach.
- Ministry of Panchayati Raj has **adopted a thematic approach** for Localization of Sustainable Development Goals (LSDGs) at the grassroots level through empowering Panchayats and other relevant stakeholders in Rural Areas.



PIB August 22

# OCEAN SAILING EXPEDITION
(Syllabus: GS Paper 3 - Internal security)

## OCEAN SAILING EXPEDITION ON INSV TARINI TO MAURITIUS

Posted On: 20 AUG 2022 10:38AM by PIB Delhi

Cmde Sanjay Panda Commanding Officer, INS Mandovi flagged off a sailing expedition from Goa to Port Louis, Mauritius at early hours of 20 Aug 22. The expedition is being undertaken by a crew of six (incl three women officers), onboard INSV Tarini.

**Ocean sailing expedition**

- Ocean sailing is an **extremely tough adventure sport**.
- These **Ocean Sailing expeditions** help in inculcating spirit of adventure, enhancing risk taking abilities whilst honing essential seamanship skills including navigation, communication, technical operation of engines and onboard machinery, operation of Inmarsat equipment, logistics planning etc.
- It also **enhances Indian Navy's ability** to project its benign presence across the globe by participating in sailing expeditions like Sagar Parikrama and Cape Town to Rio de Janeiro races, IONS and Bay of Bengal sailing expeditions.
- Tarini is also known for undertaking circumnavigation of the globe 'Navika Sagar Parikrama' in 2017 with all women officers crew.
- In the present expedition, the selected crew is a **gender neutral** consisting of three men and three women officers each.
- The **Indian Navy has six ocean going Indian Naval Sailing Vessels (INSVs) -** Mhadei, Tarini, Bulbul, Hariyal, Kadalpura and Neelkanth in her inventory. These yachts regularly undertake expeditionary sailing with a small crew of naval personnel.



# THANK YOU!

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