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FORTNIGHTLY ON POLITICS OF DEVELOPMENT, ENVIRONMENT AND HEALTH

Science Reporter

विज्ञान एवं प्रौद्योगिकी मन्त्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY
सत्यमेव जयते



MK Yadav Sir

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BUSINESS STANDARD

Page 4

PURCHASING MANAGERS' INDEX

(Syllabus: GS Paper 3 - Economy)

Manufacturing PMI softens in June, still at six-month high

SHIVA RAJORA
New Delhi, 3 July

India's manufacturing activity in June expanded at the second highest pace this year, driven by robust demand for the country's goods in domestic and international markets, said a private survey on Monday.

S&P Global said the Purchasing Managers' Index (PMI) for manufacturing fell to 57.8 in June from 58.7 in May, even as the headline figure pointed to improvement in operating conditions.

The June figure marked two years of the index being above the 50-mark, separating expansion from contraction. A survey print above 50 indicates manufacturing expansion and below marks contraction. Earlier, in December 2022, PMI for manufacturing was recorded at 57.8.

"Central to the upturn [is] demand strength, which positively impacted several other measures such as sales, production, stock building and employment. Indian goods producers registered a sharp increase in new work intakes during June, and one that was among the strongest seen since February 2021. In addition to favourable demand conditions, panellists linked the upturn to advertising and new product releases," said the credit rating agency.

Supported by client appetite, manufacturers increased their selling prices in June, as the rate of inflation change was strongest in 13 months and above its long-run average.

"Positive client interest continued to support the manufacturing industry, driving growth of output, employment, quantities of purchases and input stocks. These positive developments instilled greater confidence into manufacturers regarding growth prospects, boding well for business investment and the labour market," said Pollyanna De Lima, economics associate director at S&P Global Market Intelligence.

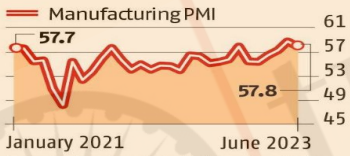
To meet demand for sales, manufacturers ramped up production in June and purchased additional resources at the end of the first fiscal quarter: such an increase being the second-strongest in over 12 years, said the survey.

"Suppliers to the Indian manufacturing sector were comfortably able to meet rising demand for inputs. This was signalled by another improvement in delivery times. Moreover, vendor performance strengthened to the greatest extent in around eight-and-a-half years," it said.

"Presented with buoyant demand, manufacturers seized the opportunity to adjust their pricing strategies. The latest increase in output charges reflected firms' ability to pass on higher cost burdens to customers while maintaining a competitive edge," said De Lima.



THE TRAJECTORY



A survey print above 50 indicates manufacturing expansion and below marks contraction
Source: S&P Global

Context: India´s manufacturing activity in June expanded at the second highest pace this year, driven by robust demand for the country's goods in domestic and international markets.

- The **Purchasing Managers´ Index (PMI)** for manufacturing fell to 57.8 in June from 58.7 in May, even as the headline figure pointed to improvement in operating conditions.

PMI or a Purchasing Managers' Index (PMI)

- It is an **indicator of business activity** - both in the manufacturing and services sectors.
- It is a **survey-based measures** that asks the respondents about changes in their perception of some key business variables from the month before.
- It is **calculated separately for the manufacturing and services sectors** and then a composite index is constructed.
- A **figure above 50 denotes** expansion in business activity.
- **Anything below 50 denotes** contraction.
- **Higher the difference** from this mid-point greater the expansion or contraction.
- The **rate of expansion** can also be judged by comparing the PMI with that of the previous month data.
- If the figure is **higher** than the previous month's then the **economy is expanding at a faster rate.**
- If it is **lower** than the previous month then it is growing at a lower rate.

ECONOMIC TIMES

Page 4

GIFT CITY

(Syllabus: GS Paper 3 - Economy)

GIFT City to Deepen India's Integration with Global Finance

Expert Take



ZARIN DARUWALA

This week, following twenty-two years of servicing international investors and representing more than half of the offshore open interest in Indian equity index the Singapore Stock Exchange Nifty (SGX Nifty) moved to the Gujarat International Finance Tec-City (GIFT) International Financial Services Centres (IFSC) in its new avatar — GIFT Nifty.

Under this arrangement, trades will be routed to NSE International Exchange (NSE IX) GIFT City from the SGX for trading and execution. This is a big step forward in GIFT City's journey to emerge as a leading international financial service centre and will significantly increase trading volumes and liquidity in GIFT, attracting more investors, traders, and market intermediaries.

The story of GIFT City has just started unfolding. With increased focus from the government, GIFT has successfully attracted the international community's attention within a short period with a banking asset book of $35 billion-plus. Similarly, the insurance sector has seen the sum insured crossing $30 billion, and we have seen a sharp increase in the number of registered alternative investment funds (AIFs) and fund houses.

International Financial Services Centres Authority (IFSC), the unified regulator for IFSC, has adopted principle-based regulations and has a consultative approach to regulation, further enhancing its attractiveness for financial sector participants.

attractive for issuing foreign currency loans for Indian corporates with zero WHT.

The government has ambitious plans for further growing financial and technology businesses at GIFT City. The aim is to achieve the objectives through financial incentives, ease of doing business and world-class infrastructure. According to government estimates, GIFT City will create 500,000 direct jobs and equal indirect employment upon realising its full commercial potential. These jobs will be spread across various sectors, including offshore banking, finance companies, commodity exchange, asset management, global trading, insurance, IT and ITeS companies, and data centres.

In addition to developing the financial sector, an impetus is also being made to attract corporates/MNCs to set up their regional/global corporate treasury centres at GIFT City. Being an IFSC, many of the Foreign Exchange Management Act (FEMA) regulations that apply to onshore corporates are



not applicable at GIFT City — thereby creating a conducive environment to set up a cross-border or regional treasury, where currently many corporates operate such treasury centres from Singapore, Hong Kong and Dubai.

The pace of growth, participation and investment at GIFT City has significantly increased in the past three years. Establishing a unified regulator, consistent policy from the government, and renewed interest among investors ha-

Context: This week, following twenty-two years of servicing international investors and representing more than half of the offshore open interest in Indian equity index the Singapore Stock Exchange Nifty (SGX Nifty) moved to the **Gujarat International Finance Tec-City (GIFT)** International Financial Services Centres (IFSC) in its new avatar - GIFT Nifty.

- Under this arrangement, trades will be routed to NSE International Exchange (NSE IX) **GIFT City from the SGX** for trading and execution.

GIFT City

- **About**: Gujarat International Finance Tech-City (GIFT City) is a **business district** currently being constructed in the state of Gujarat.
  - GIFT City is **India's first operational smart city** with the development of world-class infrastructure and sustainable master planning, which will make GIFT at par or above par with renowned centres like London, Shanghai, New York, Hong Kong, Singapore, Dubai, etc.
  - **Promoted by the state government of Gujarat** as a greenfield project, it will include commercial and residential complexes.
  - GIFT is a vertical city that will optimise the land area consumption for the development.
- **Location**: GIFT is located on the **banks of Sabarmati river,** connecting business capital (Ahmedabad) and political capital (Gandhinagar) of Gujarat state - The Growth Engine of India.
  - The GIFT City is located 12 km from **Ahmedabad International Airport.**
- **Key Features**: GIFT City has a **dedicated multi-services Special Economic Zone (SEZ)** for International operations for various services sector players.
  - Also, GIFT multi-services SEZ has the status of **India's first International Financial Services Centre (IFSC)** approved by the Government of India.
  - The establishment of IFSC in India is **expected to increase employment opportunities,** thereby, enhancing economic activity and revenue generation.

LIVE MINT

Page 1

FOREIGN PORTFOLIO INVESTMENT

(Syllabus: GS Paper 3 - Economy)

Market momentum, FPIs propel Sensex past 65,000

Hope that the Fed might be able to end the inflation battle sooner is fuelling the rally

Ujjval Jauhari
ujjval.j@livemint.com
NEW DELHI

Indian stocks extended their rally on Monday, led by gains in HDFC twin stocks and strong buying activity in other index heavyweights.

Buoyed by gains in the US market, local stocks saw a gap-up opening on Monday. Favourable economic data and sustained foreign fund inflows propelled the Sensex beyond 65,000, with the Nifty 50 surpassing 19,300, maintaining the bullish trend.

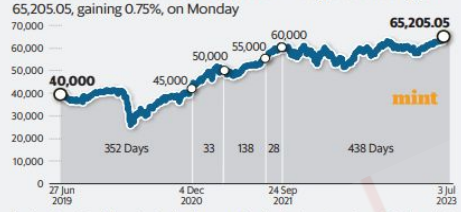
The Sensex, which closed above 64,000 on Friday, ended trading on Monday at 65,205.05, gaining 0.75%. With gains of 0.7%, the Nifty 50 ended the day at 19,322.55, close to the all-time high of 19,345.10 that it scaled during intraday trading.

The latest rally is being fuelled by expectations that the US Federal Reserve might be able to call off its inflation battle faster than expected, analysts said. The fear of recession is easing, supported by

TURN TO PAGE 6

NEW MILESTONE

The Sensex, which closed above 64,000 on Friday, ended trading at 65,205.05, gaining 0.75%, on Monday



The chart shows daily closing values but the milestones are based on intraday values. Source: BSE, Mint analysis

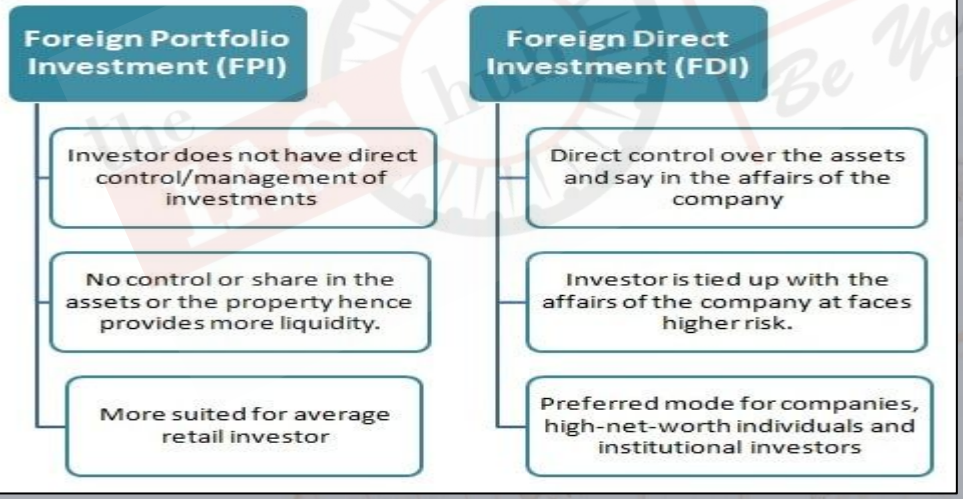
SARVESH KUMAR SHARMA/MINT

HDFC Bank hits record on fund buying

Ram Sahgal
ram.sahgal@livemint.com
MUMBAI

HDFC Bank Ltd surged to a record ₹1,757.50 in early trading on Monday, supported by institutional buying following its merger with mortgage lender parent Housing Development

TURN TO PAGE 6



Context: Indian stocks extended their rally on Monday, led by gains in HDFC twin stocks and strong buying activity in other index heavyweights.

- **FPI flows remain key drivers** for markets and may sustain for some more time.

Foreign Portfolio Investment (FPIs)

- **About**: a common way to invest in overseas economies.
- **Examples of FPIs**: stocks, bonds, mutual funds, exchange traded funds, American Depositary Receipts (ADRs), and Global Depositary Receipts (GDRs).
- **Part of BOP**: FPI is **part of a country's capital account** and is shown on its Balance of Payments (BOP).
  - The BOP measures the amount of money flowing from one country to other countries over one monetary year.
- **Not active shareholders**: They are **generally not active shareholders and do not exert any control over the companies** whose shares they hold.
  - FPI is **often referred to as "hot money"** because of its tendency to flee at the first signs of trouble in an economy.
  - FPI is more **liquid, volatile** and therefore **riskier** than FDI.
- **SEBI rules**: The Securities and Exchange Board of India (SEBI) brought new FPI Regulations, 2019, replacing the erstwhile FPI Regulations of 2014.
  - The limits for FPI investment in Government securities (G-secs), State Development Loans (SDLs) and corporate bonds shall remain unchanged at 6%, 2% and 15% respectively, of outstanding stocks of securities for FY 2022-23.
  - Recently the Reserve Bank of India (RBI) withdrew the 20 percent limit on investments by FPIs in corporate bonds of an entity with a view to encouraging more foreign investments.

PIB

July 3

SWAMIH FUND

(Syllabus: GS Paper 3 - Economy)

PM congratulates new home owners in Bengaluru's first project under SWAMIH Fund

Context: The Prime Minister has congratulated new home owners in Bengaluru's first project under **SWAMIH Fund** which has helped more than 3000 families in owning their dream homes.

Special Window for Affordable & Mid-Income Housing (SWAMIH) Fund

- **About**: A government backed fund that was set up as a **Category-II AIF (Alternate Investment Fund)** debt fund registered with SEBI, launched in 2019.
  - Under this category, funds that are **invested in equity securities and debt securities** are included.
  - Those **funds not already under Category I and III** respectively are also included.
  - **No concession** is given by the government for any investment made for Category II AIFS.
- **Objectives**: Formed **to complete construction of stalled**, Real Estate (Regulation and Development) Act (RERA)-registered affordable and mid-income category housing projects which are stuck due to paucity of funds.
- **Investment Manager of the Fund:** SBICAP Ventures is a **wholly-owned subsidiary** of SBI Capital Markets, which in turn is a wholly-owned subsidiary of the State Bank of India.
- **Sponsor of the Fund**: **Secretary**, Department of Economic Affairs, **Ministry of Finance**, on behalf of the Government of India.
- **Investor of the Fund:** Alternate Investment Funds created/funded under the **Special Window** would solicit investment from 14 investors:
  - With the **government holding 50%** of the fund.
  - **Life Insurance Corp. and State Bank of India** each having 10%.
  - The **rest with public and private-sector players** which will include cash-rich financial institutions, public and private banks, sovereign wealth funds, domestic pension and provident funds, global pension funds and other institutional investors.
- **Eligibility Criteria:** The **real estate projects seeking last-mile funding from SWAMIH** must be Real Estate (Regulation and Development) Act (RERA)-registered which have been stalled due to a lack of adequate funds. Each of these projects must be very close to completion.
  - They must also **fall under the 'Affordable and Middle Income Project' category** (any housing projects wherein housing units do not exceed 200 sq.m.).
  - **Net-worth positive projects** are also eligible for SWAMIH funding.
    - Net-worth positive projects are those projects for which the value of their receivables (debts owed to them by buyers), plus the value of their unsold inventories is **greater than their completion costs and outstanding liabilities**

INDIAN EXPRESS

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DEEP SEA MINING

(Syllabus: GS Paper 3 - Infrastructure)

DEEP SEA MINING

The International Seabed Authority is preparing to resume negotiations to open the seabed for mining

THE INTERNATIONAL Seabed Authority – the United Nations body that regulates the world's ocean floor – is preparing to resume negotiations that could open the international seabed for mining, including for materials critical for the green energy transition.

What is deep sea mining?

Deep sea mining involves removing mineral deposits and metals from the ocean's seabed. There are three types of such mining: taking deposit-rich polymetallic nodules off the ocean floor, mining massive seafloor sulphide deposits, and stripping cobalt crusts from rock.

These nodules, deposits and crusts contain materials, such as nickel, rare earths, cobalt and more, that are needed for batteries and other materials used in tapping renewable energy and also for everyday technology like cellphones and computers.

Engineering and technology used for deep sea mining are still evolving.

How is it regulated?

Countries manage their own maritime territory and exclusive economic zones, while the high seas and the international ocean floor are governed by the United Nations Convention on the Law of the Seas. It is considered to apply to states regardless of whether or not they have signed or ratified it.

What are the concerns?

Only a small part of the deep seabed has been explored and conservationists worry that ecosystems will be damaged by mining, especially without any environmental protocols. Damage from mining can include noise, vibration and light pollution, as well as possible leaks and spills of fuels and other chemicals.

Sediment plumes from some mining processes are a major concern. Once valuable materials are extracted, slurry sediment plumes are sometimes pumped back into the sea. That can harm marine life in several ways. AP

Context: The **International Seabed Authority** - the United Nations body that regulates the world's ocean floor - is preparing to resume negotiations that could open the international **seabed for mining, including for materials critical for the green energy transition.**

DEEP SEA MINING

- Deep sea mining involves removing **mineral deposits and metals from the ocean's seabed.**
- Under the **United Nations Convention on the Law of the Seas,** the seabed and its mineral resources are considered the **"common heritage of mankind"** that must be managed in a way that protects the interests of humanity through the sharing of economic benefits, support for marine scientific research, and protecting marine environments.
- **Mining companies interested** in deep sea exploitation are partnering with countries to help them get exploration licenses.
- Only a small part of the deep seabed has been explored and conservationists worry that **ecosystems will be damaged by mining**, especially without any environmental protocols.

THE HINDU Page 10

UNION COUNCIL OF MINISTERS

(Syllabus: GS Paper 2 - Polity)

Modi meets Council of Ministers, speaks of 'Vision 2047'

The Hindu Bureau
NEW DELHI


Narendra Modi

Addressing his Council of Ministers amid swirling speculation of a Cabinet reshuffle, Prime Minister Narendra Modi spoke of the road to 2047, the year India would mark the centenary of Independence, and urged his colleagues to keep the focus on infrastructure development and its impact.

The meeting was held at the new convention centre built in Pragati Maidan ahead of the G-20 meeting to be hosted there under India's presidentship.

Mr. Modi spoke at length about the issues that will be presented before the international grouping when they meet in New Delhi.

"Issues like cryptocurrency regulation, public funding of digital infrastructure, something that became an urgent requirement when the pandemic-induced lockdowns happened between 2020 and 2022 and where India has much to show the world, were also spoken of by Mr. Modi," said a Minister present at the meeting.

Foreign Secretary Vinay Kwatra gave a presentation on the recent trips undertaken by Mr. Modi, and the outcomes of these meetings.

Minister of State for External Affairs Meenakshi Lekhi, speaking to the media after the marathon five-and-a-half-hour meeting was concluded, said that Mr. Modi's speech covered an expanse of topics, including road and space infrastructure.

Context: Prime Minister chaired a meeting of the **Union Council of Ministers** at the newly built convention centre at the Pragati Maidan and asked his ministers to ensure "last mile" delivery of welfare schemes.

Union Council of Ministers: Council of Ministers

- **Article 74**: There shall be a **Council of Ministers with the Prime Minister** at the head to aid and advise the President who shall, in the exercise of his functions, act in accordance with such advice.
  - However, the President may require the Council of Ministers to reconsider such advice (option added by 44th CAA 1978) and the **President shall act in accordance with the advice tendered after such reconsideration.**
  - The advice tendered by Ministers to the President shall not be inquired into in any court.
- **Article 75**: The **Prime Minister shall be appointed by the President** and the other Ministers shall be appointed by the President on the advice of the PM.
  - The Council of Ministers shall be **collectively responsible to the Lok Sabha.** (Not to the Rajya Sabha)
  - A minister who is not a member of the Parliament (either Rajya Sabha or Lok Sabha) for **any period of six consecutive months shall cease to be a minister.**
  - The ministers shall hold office during the pleasure of the President.
- **Article 88**: Every minister shall have the **right to speak and take part in the proceedings of either House,** any joint sitting of the Houses and any Committee of Parliament of which he may be named a member. But he shall not be entitled to vote.
- **91st Constitutional Amendment Act 2003:** The total number of ministers, inclusive of the Prime Minister, in the Council of Ministers **shall not exceed 15% of the total strength of the Lok Sabha.**
  - A member of either house of Parliament belonging to any political party who is disqualified on the ground of defection shall also be disqualified to be appointed as a minister.

PIB

July 4

POLITICAL FUNDING

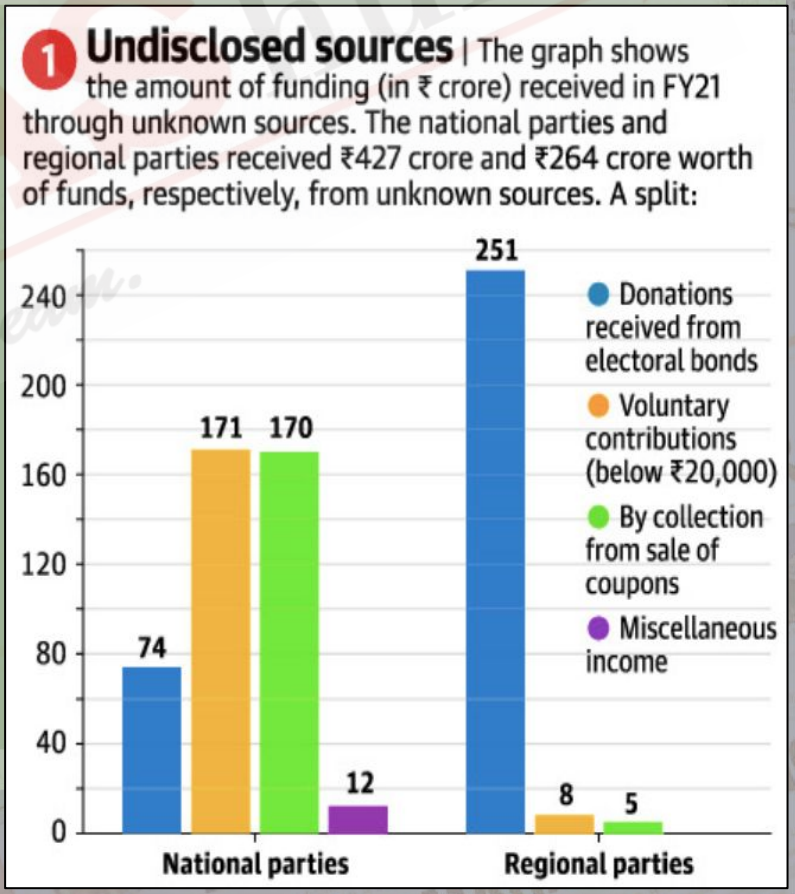
(Syllabus: GS Paper 2 - Elections)

Political Parties will now be able to file financial accounts online, with the Election Commission opening a web-portal for filing of three types of reports - Contribution Report, Audited Annual Account and Election Expenditure Statements by Political Parties

Context: The **Election Commission of India (ECI)** announced an initiative to improve transparency of the finances of political parties by launching a portal for the parties to submit the required annual reports.

Key Points

- **RPA Act 1951**: Political parties registered with the ECI are **required to submit annual audit reports,** annual contribution reports of all donations over Rs 20,000 each, and expenditure reports after every election.
- **Not Mandatory**: The political parties **not wishing to file the financial report through online mode** will have to convey the reasons for not filing on-line to the Commission in writing and may continue to file its reports in hard copy along with CDs/Pen drive in the prescribed formats.
    - The commission will, in turn, **publish all such reports online**, along with a letter of justification sent by the party for not filing financial statements online.



THE HINDU

Page 12

SCHEME FOR RAPE VICTIMS

(Syllabus: GS Paper 2 - Social Justice)

Centre announces scheme to support minor rape victims

The Hindu Bureau
NEW DELHI

Recognising the trauma faced by minor rape victims, the Union government has decided to provide medical, financial and infrastructure support to victims in cases where the sexual assault results in pregnancies.

The special scheme, announced by the Women and Child Development Ministry (WCD) on Monday, would operate under the aegis of the Nirbhaya Fund and an amount of ₹74.1 crore has been allocated.

"We have additionally leveraged the administrative structure of Mission Vatsalya in collaboration with State governments and Child Care institutions [CCIs] to actualise this support to minor victims," WCD Minister Smriti Irani said. Mission Vatsalya, launched in 2021, is focused on the protection and welfare of children.

In 2021, the National Crime Records Bureau reported 51,863 cases under the Protection of Children from Sexual Offences (POCSO) Act. Out of these, 64% cases were reported under Section 3 and 5 (penetrative sexual assault and aggravated penetrative sexual assault, respectively).

Fast track courts

The government had already accelerated access to justice for minor victims of rape by establishing 415 POCSO fast track courts in the country. This additional support would be available at the level of CCIs up to the age of 18 and thereafter up to the age of 23 in aftercare facilities, Ms. Irani said. In many of these cases, girls become pregnant and bear several physical and mental health concerns, which are further aggravated when they are disowned or abandoned by their own families or are orphans, sources in the WCD Ministry said.

This scheme aims to provide integrated support to girl child victims under one roof, facilitate immediate, emergency and non-emergency access to a range of services.

Context: The government has **decided to provide medical, financial and infrastructural support** to victims in cases where the sexual assault results in pregnancies.

- **Mission Vatsalya**, launched in 2021, is focused on the protection and welfare of children.
- The government had already **accelerated access to justice** for minor victims of rape by establishing 415 POCSO fast-track courts in the country.

Key Points

- The **special scheme,** announced by the Women and Child Development Ministry, would operate under the aegis of the **Nirbhaya Fund** and an amount of ₹74.1 crore has been allocated for the same.
- The **new scheme aims to provide integrated support and assistance to girl child victims** under one roof, facilitate immediate, emergency and non-emergency access to a range of services, including access to education, police assistance, and health care, including maternity, neonatal and infant care, psychological and legal support.
- It will also **provide insurance cover** for the minor girl victim and her new-born under one roof to enable access to justice and rehabilitation.
- **Any girl who is below 18 years of age** and is a victim of rape as per the provisions of the POCSO Act and has become pregnant due to such assault or rape would be covered under the scheme. Such a victim should either be an orphan or have been abandoned by the family.
- As per the rules, it is **not mandatory for the victim** to have a copy of the First Information Report (FIR) for availing the benefits under the scheme.

DTE

July 4

DATA CARBON LADDER

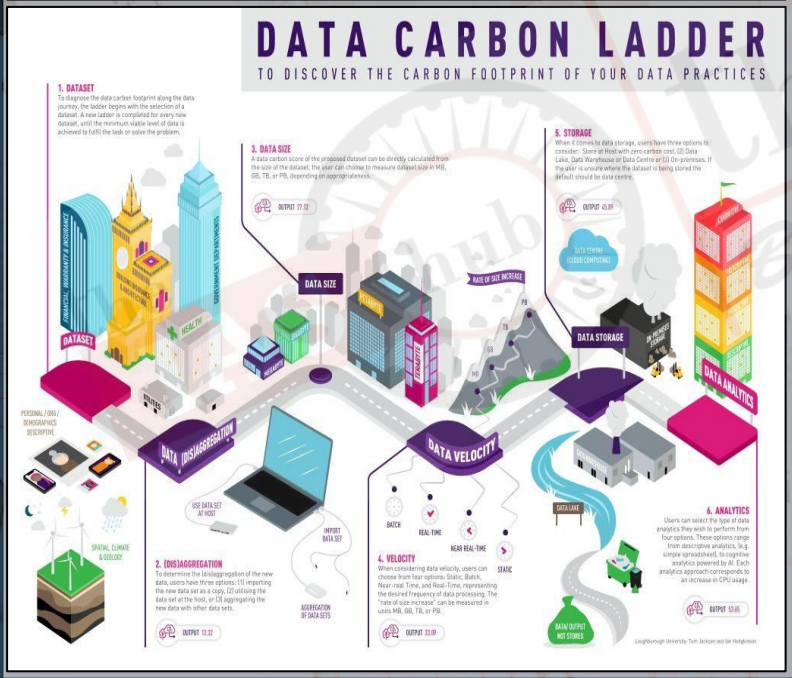
(Syllabus: GS Paper 3 - Env & Eco)

This tool can help companies track digital carbon footprint of stored data

Data carbon ladder enables organisations to see environmental impact of stored data at various stages

By DTE Staff
Published: Monday 03 July 2023





Context: Scientists have come up with a new tool, **Data carbon ladder**, that can calculate carbon emissions caused by digital data, especially by companies that want to offset their carbon footprint.

Key Points

- By 2025, it is estimated that the **global data will surpass 180 zettabytes** and the amount of digital data is doubling every two years.
- The **inclusion of the data CO2 footprint** is a crucial factor missing from global decarbonisation policies.
- Data centres are responsible for 2.5 per cent to 3.7 percent of all **human-induced carbon dioxide** - more than the aviation industry (2.1 per cent).
- By using the tool, believed to be the first of its kind, companies can make **data-driven decisions** that benefit the environment and save money by reducing the need for carbon offsetting.
- The tool c**an also help businesses and organisations i**mprove their data projects' sustainability by reducing their environmental impact and creating a more efficient and sustainable solution.
- The tool **enables organisations to see the environmental impact of data** at key stages along the data journey, providing stage-by-stage CO2 output as well as an overall CO2 footprint for new data projects.
- It **helps determine the appropriate size of the dataset(s) required,** the optimal frequency for updates, the most suitable storage location, and the analytics necessary for projects.

DTE

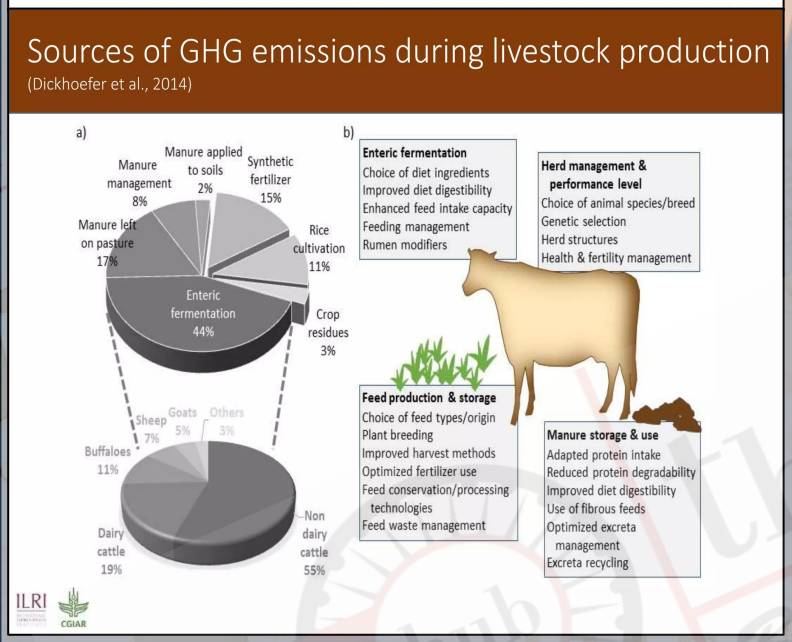
July 3

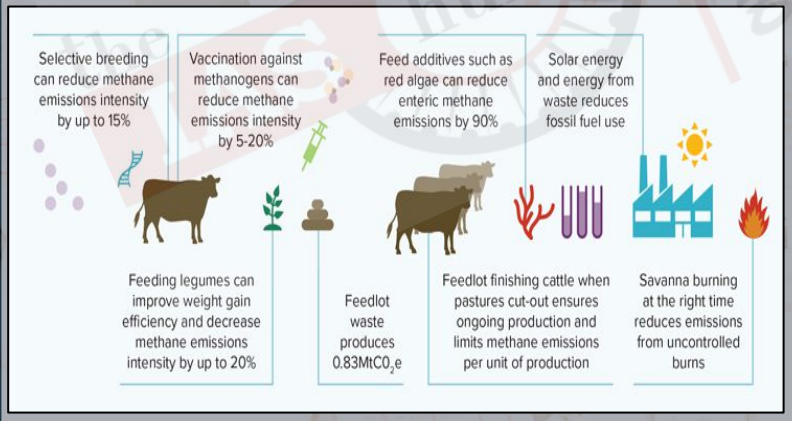
LIVESTOCK GHG EMISSIONS

(Syllabus: GS Paper 3 - Env & Eco)

India, Pakistan among 5 countries with greatest potential to address climate issues in livestock sector

Investments in India, China, Brazil, Pakistan and Sudan can make a huge global impact, finds study





Context: Priority to investment in **livestock systems in just five countries** - India, China, Brazil, Pakistan and Sudan - can make a huge impact in addressing the climate crisis in the global livestock sector, according to a study by researchers from Consultative Group on **International Agricultural Research (CGIAR)** Livestock and Climate Initiative and Wageningen University, Netherlands.

- CGIAR is a global research partnership for a food-secure future.

Livestock Emissions

- Combined, the above-mentioned **five countries account for 46 per cent of the total value of livestock production, 3**5 percent of the total rural population exposed to climate hazards and 51 per cent of livestock greenhouse-gas (GHG) emissions.
- **Livestock accounts for 5.8 per cent of global annual GHG emissions** - the percentage is closer to 23 per cent if associated deforestation and soil degradation are included.
- **Animal-based foods** represent about one-third of food systems' contribution to global emissions.
- The researchers identified **India, China, Brazil, Pakistan, and Sudan** as top-five investment priorities - places with both high emissions and large numbers of people and animals exposed to climate stress.
- **Livestock systems in India**, Nigeria and Sudan are the most exposed, with India's exposure to climate stress exceeding that of other countries at least five-fold.

Steps need to be taken

- **Boosting technical assistance** to help farmers to implement rotational grazing systems is also the need of the hour.
- **Planting trees** within pastoral systems, also called silvopasture, also has multiple climate benefits.
- **Shrubs and trees** can improve carbon storage and soil health, increase productivity, boost biodiversity and provide shade to animals during heatwaves.
- **Shifting animals' diets to locally-adapted forage plants** is more climate-smart than buying commercial feed. And there's potential for methane emissions-reductions without slashing herd sizes, too.
- CGIAR researchers in Colombia have found that adding **forage legumes to traditional grass monocultures** can reduce cows' methane emissions by 15 per cent (in the context of the country).
- In Ethiopia, a CGIAR research project brought together **remote sensing technology**, satellite imagery and on-ground sensors to capture essential data about water levels, flow rates, and water source conditions.

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