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THE HINDU

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DownToEarth
FORTNIGHTLY ON POLITICS OF DEVELOPMENT, ENVIRONMENT AND HEALTH

Science Reporter

सत्यमेव जयते
विज्ञान एवं प्रौद्योगिकी मंत्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY

Table of Contents

1. Core Sectors
2. RoDTEP Scheme
3. Participatory Notes
4. Credit Rating Agencies
5. India Semiconductor Mission
6. 2-Finger Test
7. Rashtriya Ekta Diwas
8. Warehouse Receipt System
9. ASEAN-India Startup Festival
10. Methane Emission

THE HINDU Page 18

CORE SECTORS
(Syllabus: GS Paper 3 - Economy)

INBRIEF



Core sector output grew 7.9% in Sept., fastest in 3 months

Production of eight infrastructure sectors expanded by 7.9% in September – the fastest in three months – on account of a better show by coal, fertiliser, cement and electricity segments, according to official data. The previous high was in June when the output expanded by 13.1%. The production growth of eight infrastructure sectors – coal, crude oil, natural gas, refinery products, fertiliser, steel, cement and electricity – was 9.6% during April-September this fiscal, compared with 16.9% a year earlier. PTI

Context: Production of eight infrastructure sectors expanded by 7.9% in September on account of a better show by coal, fertiliser, cement and electricity segments.

Core Sector

- **About**: Core sectors of an economy are the key industries in the economy.
- **8 Core Sectors of the Indian Economy**: Coal, Crude Oil, Natural Gas, Refinery Products, Fertiliser, Steel, Cement, Electricity.
- **Weight in IIP**: These eight industries have a combined share of a**bove 40.27%** in the Index of Industrial Production (IIP).
    - **Decreasing order of their weightage:** Refinery Products (28.04) > Electricity (19.85) > Steel (17.92) > Coal (10.33) > Crude Oil (8.98) > Natural Gas (6.88) > Cement (5.37) > Fertilizers (2.63).
- **Index of Eight Core Industries (ICI)**: The ICI is a production volume index prepared and released by the Office of the Economic Adviser (OEA), Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry, GOI.
    - It is **released every month.**
    - The index is calculated by using the **Laspeyres formula** of the weighted arithmetic mean of quantity relatives.
        - The Laspeyres Index is calculated by working out the cost of a group of commodities at current prices, dividing this by the cost of the same group of commodities at base period prices, and then multiplying by 100.
    - It measures the **individual and collective performances** of the production in these eight core industries.
    - It is used by policymakers including the Ministry of Finance, other Ministries, and Departments.
    - It is also used by banks for financing infrastructure projects and the Reserve Bank of India (RBI).

Index of Industrial Production

- **About**: An index which shows the growth rates in different industry groups of the economy in a stipulated period of time.
- **Computed and published by**: Central Statistical Organisation (CSO) on a **monthly basis.**
- **Base Year**: 2011-2012.
- **Significance**: It is a composite indicator that measures the growth rate of industry groups classified under:
    - **Broad sectors**: Mining, Manufacturing and Electricity
    - **Use-based sectors**: Basic Goods, Capital Goods and Intermediate Goods.

BUSINESS STANDARD

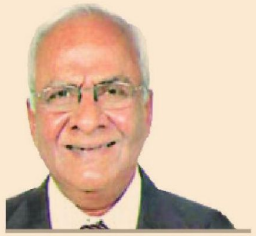
Page 6

RoDTEP SCHEME

(Syllabus: GS Paper 3 - Economy)

Context Under the duty drawback scheme, It is required to surrender proportionate or full amount of drawback taken, along with interest, in case of short realisation or non-realisation of export proceeds within the time allowed (original or extended) by the AD bank or RBI.

'If export proceeds not realised, you need to surrender RoDTEP benefit'



CHATROOM

T N C RAJAGOPALAN

Under the duty drawback scheme, we are required to surrender proportionate or full amount of drawback taken, along with interest, in case of short realisation or non-realisation of export proceeds within the time allowed (original or extended) by the AD bank or RBI. Do we need to surrender RoDTEP scheme-related export benefits also in similar cases?

Yes. The MF (DR) Circular no. 23/2021-Cus dated September 30, 2021 makes it clear that duty credit allowed under the RoDTEP scheme is subject to realisation of sale proceeds within the period allowed by RBI. The detailed provisions are mentioned in conditions at Para 2(4), 2(6) and 2(7) of the notification No. 76/2021-Cus(NT) dated September 23, 2021. Para 5 of the said notification deals with the recovery of RoDTEP credit in case of short realisation or non-realisation of the export proceeds.

The Electronic Duty Credit Ledger Regulations, 2021 (notification no. 75/2021-Cus(NT) dated September 23, 2021) read with the said notification 76/2001-Cus also provides for the situations and manner of suspension or cancellation of duty credit or e-scrip, or recovery when duty credit allowed was in excess, or where export proceeds are not realised.

We had exported certain goods that were found defective by the buyer and so were returned to us. We cleared the re-imported consignment under the notification 158/95-Cus dated November 14, 1995, by giving a bond that after suitable repairs we will re-export the goods within six months from the date of re-import. However, we could not re-export the goods even after a further extension of six months, as the buyer did not want the goods. Now, can we ask the Customs to amend the bill of entry and treat the goods as cleared under the notification 45/2017-Cus dated June 30, 2017?

In the case of Rallis India Ltd. [2017 (358) ELT 285 (Tri. Mumbai)], the Tribunal said that the appellant re-imported exported goods claiming the notification no. 158/95-Cus and executed the bond and bank guarantee, but due to unavoidable reason could not re-export the said goods. Therefore, the appellant claimed the alternate exemption notification no. 94/96-Cus. There is no reason to deny the alternate exemption notification. If the importer fails to comply with the condition of the notification which was claimed at the time of import, the duty is required to be paid as per the rate applicable and as per any other notification, if available to the imported goods.

The Tribunal held that only because the notification was not claimed at the time of import and claimed later on, the legitimate exemption, which is otherwise available under the statute, cannot be denied. The Tribunal relied on the Supreme Court judgment in the case of Share Medical Care [2007 (209) ELT 321 (SC)], wherein it was held that alternate notification no. 65/88-Cus. should be allowed, if the exemption notification no. 64/88-Cus. claimed at the time of import is not admissible due to non-fulfilment of the post-import condition.

RoDTEP (Refund of Duties and Taxes on Exported Products) Scheme

- **Origin**: RoDTEP was **announced in September 2019** with an aim to boost the domestic exports and replace the export incentive scheme Merchandise Exports from India (MEIS)..
- **About:** It is a flagship export promotion **scheme of the Commerce Ministry of India.**
  - This came after a World Trade Organization (WTO) ruling stated that the **MEIS scheme violated provisions of the trade agency** as it was providing export subsidies for a several range of goods.
  - The MEIS scheme provided **additional benefits of 2% to 7%** on the Freight On Board (FOB) value of eligible exports.
  - The Rebate of State and Central Levies and Taxes **(RoSCTL) Scheme has been notified separately for garment exporters.**
  - The **government decided to extend the benefit of the RoDTEP scheme** to all goods, with effect from January 1, 2021.
- **Key Features:**
  - It would **refund to exporters the embedded central, state and local duties or taxes** that were so far not been rebated or refunded and were, therefore, placing India's exports at a disadvantage.
  - The **rebate under the RoDTEP scheme would not be available in respect of duties and taxes** already exempted or credited or remitted.
  - The tax refund **rates range from 0.5% to 4.3% for various sectors.**
  - The scheme support will be provided to eligible exporters at a notified rate as a percentage of Freight On Board (FOB) value.
  - Rebates on certain export products will also be **subject to a value cap per unit** of the exported product.
  - It will be i**mplemented by Customs** through a simplified IT System.
  - Rebates will be issued in the form of **a transferable duty credit/electronic scrip (e-scrip**) which will be maintained in an electronic ledger by the Central Board of Indirect Taxes and Customs (CBIC).

INDIAN EXPRESS

Page 15

PARTICIPATORY NOTES

(Syllabus: GS Paper 3: Economy)

Investment via P-notes rises to ₹87,813 cr in Sept

Investment in Indian capital markets via participatory notes rose to ₹87,813 crore at the end of September, making it the second consecutive monthly increase

Participatory notes (P-notes) are issued by registered FPIs to overseas investors who wish to be part of the Indian stock market without registering themselves directly. They, however, need to go through a due diligence process



₹84,810 crore

According to Securities and Exchange Board of India (Sebi) data, the value of P-note investments in Indian markets — equity, debt, and hybrid securities — in August

₹75,725 crore

Investment through this route in July. ₹80,092 crore in June-end, and ₹86,706 crore in May-end

Source: Sebi/PTI

***Investment via** P-notes normally moves in trend with FPI investment. When there is a global risk to the environment, investment through P-notes increases and vice- versa*

Context: Investment in the Indian capital markets through participatory notes rose to Rs 87,813 crore at the end of September, making it the second consecutive monthly increase, as the country witnesses the best growth and earnings among emerging markets.

Participatory Notes

- **About:** P-Notes or Participatory Notes are **Overseas Derivative Instruments that have Indian stocks** as they are used by the investors abroad but not within India.
  - They **allow foreign investors to buy stocks** listed on Indian exchanges **without being registered.**
- **Issued by:** registered Foreign Institutional investors (FIIs).
  - The PNs are issued for the overseas investors who want to invest in the stock markets in India, without being registered under SEBI.
- **Advantages of participatory notes**
  - Any entity can invest in the participatory notes **without registering under SEBI** while registering under SEBI is compulsory for all FIIs.
  - These are **transferable through endorsement** and delivery making trading easy in the country.
  - Some of the entities route their investment through participatory notes to take **advantage of the tax laws of certain preferred countries.**

LIVEMINT Page 4

CREDIT RATING AGENCIES
(Syllabus: GS Paper 3 - Economy)

Market regulator issues rules on standardization of rating scales

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MUMBAI

The Securities and Exchange Board of India (Sebi) issued a circular on Monday pertaining to the standardization of rating scales used by credit rating agencies(CRAs).

This follows deliberations of the regulator with various stakeholders, including the credit rating firms. The circular will come into effect on 1 January 2023. CRAs will then have to report to Sebi their compliance with the norms as ratified by their boards of directors within one quarter from date of applicability.

"Pursuant to the consultation with the CRAs, standardized symbols and definitions have been devised for issuer rating and corporate credit rating," Sebi said in its four-page circular.

A "rating outlook" reflects the predicted direction of the rating movement in the short to medium term, while a "rating watch" indicates a CRA's view on the expected direction of the rating movement in the short term, Sebi said.

Standard descriptors to be used for an issuer or security are placed on Rating Watch, the regulator said. This will include Rating Watch with positive implications, Rating Watch with developing implications, and Rating Watch with negative implications.

Essentially, stable, positive, and negative are the standard descriptors to be used an issuer or security placed on rating outlook, Sebi said. Moreover, the monitoring of the implementation of these norms will be carried out through half-yearly internal audits for CRAs mandated under Sebi's (Credit Rating Agencies) Regulations, it said. The circular mandates each credit rating firm to assign a rating outlook and disclose this in a press release.

Issuers with a rating of AAA are considered to have the highest degree of safety pertaining to timely servicing of debt obligations.

Context: The Securities and Exchange Board of India (Sebi) issued a circular pertaining to the standardization of rating scales used by credit rating agencies(CRAs).

Credit rating agencies(CRAs)

- **Credit rating agency (CRA):** It evaluates and assesses an individual's or a company's creditworthiness.
  - **Credit rating**: It is a numerical representation of the creditworthiness of an individual or a business.
- **Regulation**: It is **regulated by Securities and Exchange Board of India (SEBI)** according to SEBI Regulations, 1999 of the SEBI Act, 1992.
  - Reserve Bank of India (RBI), Insurance Regulatory and Development Authority (IRDA) and Pension Fund Regulatory and Development Authority (PFRDA) are also involved in the regulatory mechanism of CRA's in India.
- **Total 7 credit agencies in India:** CRISIL, CARE, ICRA, SMREA, Brickwork Rating, India Rating and Research Pvt. Ltd and Infomerics Valuation and Rating Private Limited.
- **3 big credit rating agencies of the world**: Standard & Poor's (S&P), Moody's and Fitch.

Securities and Exchange Board of India (SEBI)

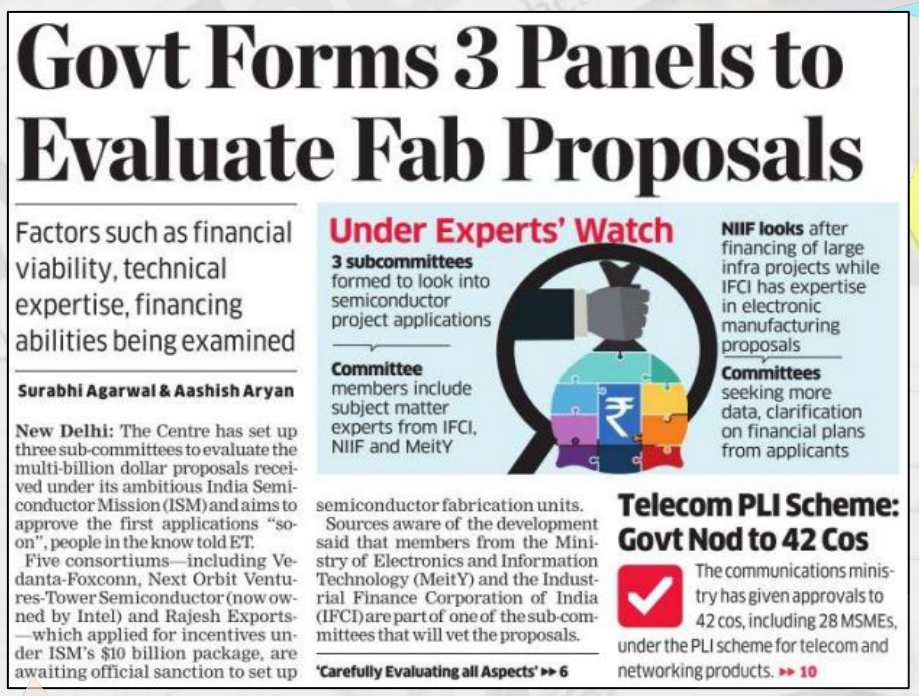
- **Statutory Body**: established on 12th April, 1992 in accordance with the provisions of the Securities and Exchange Board of India Act, 1992.
  - It is a **quasi-legislative and quasi-judicial body** which can draft regulations, conduct inquiries, pass rulings and impose penalties.
- **Structure**: The **chairman is nominated by the Union Government** of India.
  - Two members, i.e., **Officers from the Union Finance Ministry.**
  - One member **from the Reserve Bank of India.**
  - The remaining five members are nominated by the Union Government of India, out of them **at least three shall be whole-time members.**
- **Primary Functions**: to protect the interests of investors in securities and to promote and regulate the securities market.
  - SEBI is able to regulate any money pooling scheme worth Rs. 100 cr. or more and attach assets in cases of non-compliance under Securities Laws (Amendment) Act, 2014.
- **Headquarters**: Mumbai.

ECONOMIC TIMES

Page 1

INDIA SEMICONDUCTOR MISSION

(Syllabus: GS Paper 2 - Economy & Infrastructure)



Govt Forms 3 Panels to Evaluate Fab Proposals

Factors such as financial viability, technical expertise, financing abilities being examined

Surabhi Agarwal & Aashish Aryan

New Delhi: The Centre has set up three sub-committees to evaluate the multi-billion dollar proposals received under its ambitious India Semiconductor Mission (ISM) and aims to approve the first applications "soon", people in the know told ET.

Five consortiums—including Vedanta-Foxconn, Next Orbit Ventures-Tower Semiconductor (now owned by Intel) and Rajesh Exports—which applied for incentives under ISM's $10 billion package, are awaiting official sanction to set up semiconductor fabrication units.

Sources aware of the development said that members from the Ministry of Electronics and Information Technology (MeitY) and the Industrial Finance Corporation of India (IFCI) are part of one of the sub-committees that will vet the proposals.

'Carefully Evaluating all Aspects' ▸▸ 6

Under Experts' Watch

3 subcommittees formed to look into semiconductor project applications

Committee members include subject matter experts from IFCI, NIIF and MeitY

NIIF looks after financing of large infra projects while IFCI has expertise in electronic manufacturing proposals

Committees seeking more data, clarification on financial plans from applicants

Telecom PLI Scheme: Govt Nod to 42 Cos

The communications ministry has given approvals to 42 cos, including 28 MSMEs, under the PLI scheme for telecom and networking products. ▸▸ 10

Context: The Centre has set up three sub-committees to evaluate the multi-billion dollar proposals received under its ambitious India Semiconductor mission.

India Semiconductor mission

- **Origin: launched in 2021** with a total outlay of INR 76,000 crore for the development of semiconductor and display manufacturing ecosystem in our country.
- **Objective**: It has been **setup as an Independent Business Division within Digital India Corporation** having administrative and financial autonomy to formulate and drive India's long term strategies for developing semiconductors.
- **Nodal Ministry**: Ministry of Electronics and IT (MeitY).
- **4 schemes have been introduced under the programme:**
  - **Scheme for setting up of Semiconductor Fabs in India**: It provides fiscal support to eligible applicants for setting up of Semiconductor Fabs which is aimed at attracting large investments for setting up semiconductor wafer fabrication facilities in the country.
  - **Scheme for setting up of Display Fabs in India**: It provides fiscal support to eligible applicants for setting up of Display Fabs which is aimed at attracting large investments for setting up TFT LCD / AMOLED based display fabrication facilities in the country.
    - The Scheme provides fiscal support of up to 50% of Project Cost subject to a ceiling of INR 12,000 crore per Fab.
  - **Scheme for setting up of Compound Semiconductors / Silicon Photonics / Sensors Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP) / OSAT facilities in India:** The Scheme provides a fiscal support of 30% of the Capital Expenditure to the eligible applicants for setting up of Compound Semiconductors / Silicon Photonics (SiPh) / Sensors (including MEMS) Fab and Semiconductor ATMP / OSAT facilities in India.
  - **Design Linked Incentive (DLI) Scheme**: It offers financial incentives, design infrastructure support across various stages of development and deployment of semiconductor design for Integrated Circuits (ICs), Chipsets, System on Chips (SoCs), Systems & IP Cores and semiconductor linked design.
    - The **scheme provides "Product Design Linked Incentive" of up to 50% of the eligible expenditure** subject to a ceiling of ₹15 Crore per application and "Deployment Linked Incentive" of 6% to 4% of net sales turnover over 5 years subject to a ceiling of ₹30 Crore per application.

Other initiatives related to Semiconductors

- **Semi-conductor Laboratory (SCL):** It is responsible for design and development of very-large-scale integration (VLSI) devices and development of systems for the telecommunication and space sectors.
- **Production Linked Incentives:** a scheme that aims to give companies incentives on incremental sales from products manufactured in domestic units.
- **Compound Semiconductors:** Government will support fiscal support of 30% of capital expenditure to approved Compound Semiconductors units.

TIMES OF INDIA

Page 16

TWO-FINGER TEST

(Syllabus: GS Paper 1 - Issue related to Women)

Erase 2-finger sex assault test from curriculum: SC

Doc Conducting It To Be 'Guilty Of Misconduct'

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IN THE APEX COURT

- SC grants 3 weeks' time to **Assam and Tripura to file response** on petitions challenging constitutional validity of **Citizenship (Amendment) Act** and subsequent Rules. Hearing to commence Dec 6 | P 7
- SC entertains PIL seeking quashing of Election Laws (Amendment) Act, 2021 that permits **linking of voter ID cards with Aadhaar.** Plea says it **could breach secrecy** attached to voting | P 13
- SC **asks Gujarat govt what steps it has taken** after submission of the report of Justice D A Mehta-led Commission which probed the 2020 **hospital fires at Ahmedabad and Rajkot in which 13 Covid patients were charred to death** | P 11
- SC agrees to examine constitutional validity of law which **bars prisoners from voting.** Seeks response from Centre and the Election Commission | P 13

New Delhi: Deprecating continued use of the banned invasive two-finger test to determine a rape survivor's prior sexual conduct, the Supreme Court on Monday ordered the Union and state governments to take steps to erase the humiliating test from medical curriculum and warned that doctors would be guilty of misconduct for carrying it out.

"The two-finger test is based on the incorrect assumption that a sexually active woman cannot be raped. Nothing could be further from the truth — a woman's sexual history is wholly immaterial while adjudicating whether the accused raped her," said a bench of Justices DY Chandrachud and Hima Kohli. The SC in 2013 had declared that the "two-finger test violates the right of rape survivors to privacy, physical and mental integrity and dignity".

The bench said, "Probative value of a woman's testimony does not depend upon her sexual history. It is patriarchal and sexist to suggest that a woman cannot be believed when she states that she was raped, merely because she is sexually active."

The bench gave this ruling while reversing a Jharkhand high court decision to acquit a man of rape-murder charges. The SC upheld the trial court's conviction order and sentenced to life imprisonment a man who had raped a 16-year-old girl and then set her afire to cause her death.

The medical board had subjected the rape survivor, battling for life due to severe burn injuries, to the archaic two-finger test. It was this which disgusted the SC. Writing the judgment for the bench, Justice Chandrachud said the test "has no scientific basis and neither proves nor disproves allegations of rape".

▶ 'Affront to women', P 15

Context: The Supreme Court decided to impose a ban on the two-finger test, which is at times performed on survivors of rape and sexual assault.

Two-finger test

- **About:** The two-finger test is also **often called the virginity test** and is aimed at checking the laxity of the vaginal muscles of a woman, primarily to check if she is sexually active or not.
  - This test is has been performed on rape survivors to "confirm" their allegations.
- **Mechanism**: The two-finger test is performed by a doctor, who inserts two fingers into the vaginal canal of the rape survivor **to check the laxity of her muscles and determine if she has been sexually active or not.**
  - This test is also done to check if the woman's hymen is intact.
- **Global Practice**: This **test was mostly practiced in Bangladesh, Pakistan, and India** before it got banned by the governments, though some authorities still maintained its validity before the Supreme Court orders.
- **Verma Committee on the two-finger test**: The committee under former Chief Justice JS Verma, formed soon after the 2012 Nirbhaya gangrape case in the national capital, had r**ecommended tougher laws for such cases and banning of the two-finger test.**



PIB

Nov 1

RASHTRIYA EKTA DIWAS

(Syllabus: GS Paper 1 - Art & Culture)

PM participates in Rashtriya Ekta Diwas celebrations in Kevadia

Context: The Prime Minister paid homage to Sardar Patel at the Statue of Unity and participated in the Rashtriya Ekta Diwas-related events.

Rashtriya Ekta Diwas (National Unity Day)

- **About**: celebrated every year on 31st October to commemorate the birth anniversary of Sardar Vallabhbhai Patel.
- **Origin**: It was **celebrated for the first time in 2014** with the aim to pay tribute to the 'Iron man of India' by remembering his extraordinary works for the country.

Sardar Vallabhbhai Patel

- **About**: a social leader for the Independence of India born on 31st October 1875 in Nadiad, Gujarat.
- **Contribution in freedom Movement:**
  - In 1918, he **started the Kheda satyagraha** that demanded the suspension of the revenue collection from farmers as there was a drought.
  - In 1920, he s**etup the Gujarat Vidyapeeth** where children could study instead of attending Government schools.
  - In 1928 he successfully **organized the landowners of Bardoli against British tax increases.** It was after this that Vallabhbhai was given the title of Sardar (Leader), by the women on Bardoli.
  - In 1931 he **served as President of the Indian National Congress in its Karachi session** which changed the nature of movement from a political struggle and added to it new socio-economic dimensions.
  - In 1947 when India got freedom, **Sardar Patel became the Deputy Prime Minister.**
    - He was **in charge of Home Affairs, Information and Broadcasting and the Ministry of States**.
    - He was **given the task of integrating the 562 Princely States into the union.**
    - He played an important role in the integration of many Indian princely states to make an Indian federation.
    - He requested the people of India to live together by uniting in order to **create Shresth Bharat (Foremost India).**
    - He is **also remembered as the 'Patron saint of India's civil servants'** as he established the modern all-India services system.

PIB

Nov 1

NEGOTIABLE WAREHOUSE RECEIPT SYSTEM

(Syllabus: GS Paper 3 - Economy & Agriculture)

Warehousing and e-NWR are going to play a critical role in the transformation of India

Context: Department of Food and Public Distribution (DFPD) Secretary addressed a seminar on **"e-NWR - An Effective Tool for Promoting Pledge Financing"** organized by the Warehousing Development and Regulatory Authority (WDRA) under DFPD.

Key Points

- **WDRA celebrated its Foundation Day** as it was constituted in 2010 under the Warehousing (Development and Regulation) Act, 2007.
- The Government has taken a number of steps for increasing registration of warehouses and promoting the benefits of registration of warehouses with WDRA and pledge finance against e-NWRs.
- These include encouraging all **Government stocks to be kept in the WDRA** registered warehouses and reduction in cost of insurance.

Negotiable Warehouse Receipt System

- **About**: launched in 2011 **by the Ministry of Consumer Affairs, Food & Public Distribution.**
  - The Electronic Negotiable Warehouse Receipt (e-NWR) System was launched in 2017.
- **Issuance**: These are documents **issued by warehouses to depositors** against commodities deposited in warehouses for which warehouse is bailee.
- **Key features**: They are **transferred by endorsement and delivery** i.e. either original depositor or holder in due course (transferee) can claim commodities from warehouse.
  - NWRs can be traded, sold, swapped and used as collateral to support borrowing or loans from banks.
- **Regulation**: These **receipts were made negotiable under Warehouse (Development and Regulation) Act, 2007** and are regulated by Warehousing Development and Regulatory Authority (WDRA).

Warehousing Development and Regulatory Authority

- **About**: It was constituted on 26th October 2010 under the Warehousing (Development and Regulation) Act, 2007.
  - The Act **provides for the establishment of the WDRA to exercise the powers conferred on it** and to perform the functions assigned to it under the Act, Rules and Regulations for the development and regulation of warehouses, negotiability of warehouse receipts and promote orderly growth of the warehousing business in the country.
- **Nodal Department:** It is statutory authority under the Department of Food and Public Distribution, Government of India.
- **Headquarter**: New Delhi.

DST

Nov 1

ASEAN-INDIA STARTUP FESTIVAL

(Syllabus: GS Paper 2 - International Relations)

1st ASEAN-India Start-up Festival 2022 bolstered ASEAN-India cooperation

Context: Department of Science and Technology inaugurated the 1st ASEAN-India Start-up Festival (AISF) on 27th October 202.

ASEAN-India Startup Festival

- It is a flagship initiative that aims to strengthen cooperation and collaboration in science, technology, and innovation between ASEAN Member States and India, as outlined in the ASEAN-India Partnership Plan of Action for Peace, Progress, and Shared Prosperity (2021-2025).
    - The **Association of Southeast Asian Nations (ASEAN) is a group of 10 nations** in Southeast Asia that work together to promote political, economic, and cultural growth and solidarity.
- It was **hosted by the ASEAN Committee on Science, Technology, and Innovation (COSTI)**, in collaboration with the Indian Department of Science and Technology (DST), via the Indonesian National Research and Innovation Agency (BRIN) and the IIT Kanpur Start-up Incubation and Innovation Centre (SIIC).
- It is **supported under the ASEAN-India Science and Technology Development Fund (AISTDF)** of Govt of India which is jointly contributed by Department of Science and Technology and Ministry of External Affairs (MEA).

ASEAN-India Collaborative R&D Scheme

- In 2008, Government of India established **a dedicated fund viz ASEAN India S&T Development Fund (AISTDF)** to support R&D projects and associated project development activities.
- The total budget of AISTDF is an equivalent amount of 5 Million USD in INR. This amount of 5 Million USD is **jointly shared by Ministry of External Affairs (MEA) and Department of Science & Technology (DST).**
- The **Department of Science & Technology is the nodal Department** for execution and implementation of ASEAN-India S&T Cooperation program from Indian side.

ASEAN Committee on Science, Technology, and Innovation (COSTI)

- It is responsible for setting directions, coordinating activities of subsidiary groups, creating public awareness of regional S&T activities**.**
- The Chairmanship of the ASEAN COSTI is held on a **rotational basis** among the ASEAN countries in alphabetical order.
- It **meets twice a year** to review the progress of regional programmes, provide support for new programmes and projects, and give direction to the implementation of programmes and projects by its subsidiary groups.

DTE

Nov 1

METHANE EMISSIONS

(Syllabus: GS Paper 3 - Env & Eco)



CLIMATE CHANGE

NASA spots 50 methane super-emitters on Earth

Most of these sites have ties with agriculture and fossil fuel industries

NEXT NEWS >

By Arya Rohini

Published: Monday 31 October 2022

Context: Scientists have identified more than 50 "super-emitters" of heat-trapping methane gas in central Asia, the west Asia and the southwestern United States.

Key points

- Most of these sites have **ties with agriculture and fossil fuel industries.**
- In Turkmenistan, EMIT identified 12 plumes from oil and gas infrastructure in the **Caspian Sea port of Hazar.**
- **Methane is an 80 times more potent greenhouse gas** than carbon dioxide.
- It accounts for a **small portion of human-induced greenhouse gas emissions compared to carbon dioxide**.
- Methane stays in the atmosphere for only ten years, unlike CO2, which persists for hundreds or thousands of years.
- Nearly **30 percent of the current global temperature rise** can be attributed to methane.

Earth Surface Mineral Dust Source Investigation instrument (EMIT)

- **NASA Earth Surface Mineral Dust Source Investigation instrument,** often known as EMIT, is the instrument which assisted the scientists shape the conclusion.
- EMIT was **designed to map the surface composition of minerals** in the Earth's dust-producing regions.
- EMIT **located a plume in the Permian Basin**, New Mexico. The Permian, one of the world's biggest oilfields, extends across portions of southern New Mexico and western Texas.
- EMIT was **installed on the International Space Station.**

Methane

- It is **a hydrocarbon, consisting of one carbon atom and four hydrogen atoms (CH4),** that is a primary component of natural gas.
- Even though it only **makes up 0.00017% (1.7 parts per million by volume) of the the atmosphere**, methane traps a significant amount of heat, helping the planet remain warm and habitable. Methane (CH4) is estimated to have a **GWP of 27-30 over 100 years.**
- It is **flammable, and is used as a fuel worldwide.**
- **Produced by the breakdown or decay of organic material** and can be introduced into the atmosphere by either natural processes or or human activities.
  - **Agriculture is the predominant source of global methane emissions.**
  - Livestock emissions – from manure and gastroenteric releases – account for roughly 32% of human-caused methane emissions. **Cows also belch out methane.**
  - Paddy rice cultivation accounts for another 8% of human-linked emissions.
- It is **responsible for creating ground-level ozone,** a dangerous air pollutant.

Initiatives taken to curb methane emissions

- **COP 26 Pledges:** At COP26 in Glasgow, over 100 countries signed an agreement to cut methane emissions by 30% by 2030.
- **MethaneSAT**: It is a planned American-New Zealand space mission scheduled for launch later in 2022.
  - It **will be an Earth observation satellite** that will monitor and study global methane emissions in order to combat climate change.
- **UN Initiatives**: The UN Food Systems Summit in September 2021 was also aimed at helping make farming and food production more environmentally friendly.
- **India's Initiative**: Central Salt & Marine Chemical Research Institute (CSMCRI) in collaboration with the country's leading institutes developed a seaweed-based animal feed additive formulation that aims to reduce methane emissions from cattle and also boost immunity of cattle and poultry.

THANK YOU!

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