GS SCORE
An Institute for Civil Services

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FORTNIGHTLY COMPILATION

1st - 15th AUGUST, 2020

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IAS PRELIMS 2020

01 | **TARGET PT 2020** | **10 AUGUST**
45 Days Onlne Prelims Classes through 4000⁺ MCQ

02 | **PRELIMS TEST SERIES** | **10 AUGUST**
Complete Revision through Test | 39 TESTS

03 | **CSAT ONLINE CLASSES** | **20 AUGUST**
4 WEEKS CSAT ONLINE CLASSES + 13 TESTS (3 SECTIONAL + 10 MOCK)

04 | **PRELIMS TEST SERIES** | **22 AUGUST**
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05 | **PRELIMS MOCK TEST** | **30 AUGUST**
TOTAL: 20 TESTS

06 | **PRELIMS MOCK TEST** | **13 SEPTEMBER**
TOTAL: 20 TESTS

1 Webinar series on Hydro-Meteorological Hazards Risk Reduction
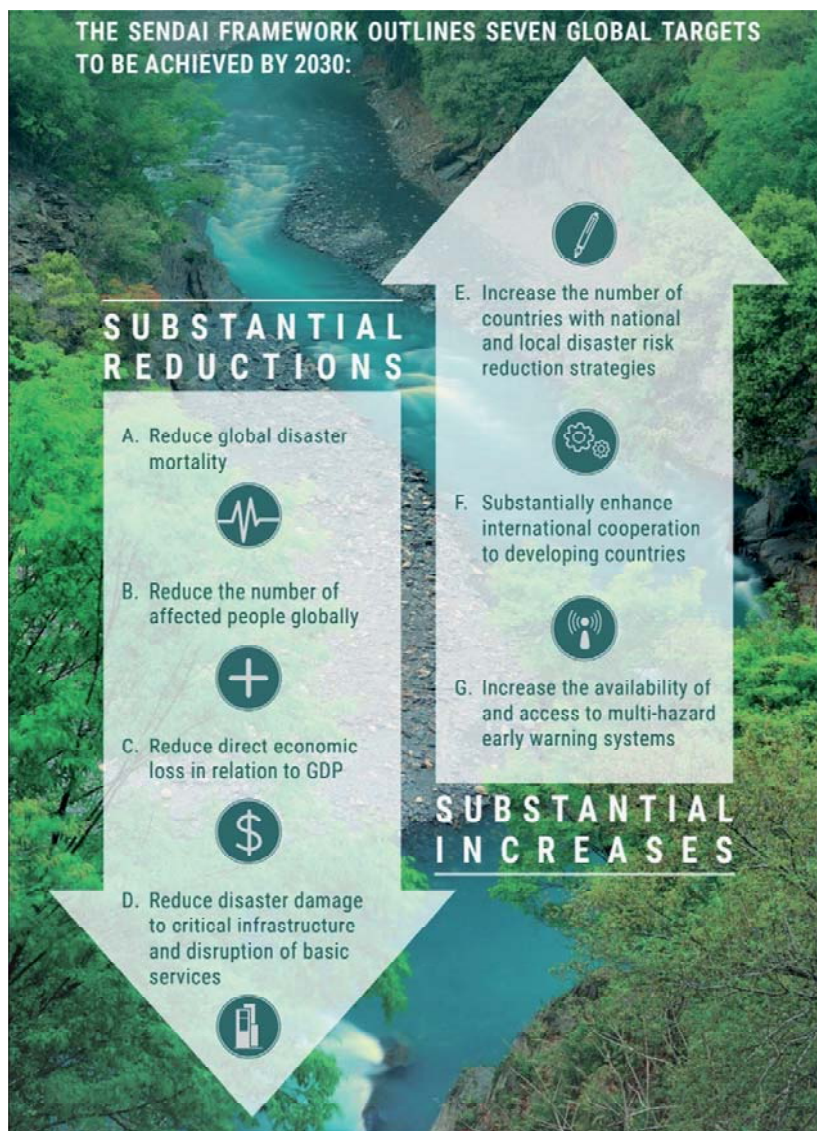
CONTEXT:

- National Institute of Disaster Management, Ministry of Home Affairs in collaboration with India Meteorological Department organised a webinar series on **"Hydro-Meteorological Hazards Risk Reduction"**.

ABOUT:

- The webinar series include four webinars focusing on issues apropos of *'Thunderstorms and Lightning'*, *'Cloudburst and Floods'*, *'Cyclones and Storm Surges'* and *'Climate Change and Extreme Weather Events'*.

- The webinar series exhorted on enhancing human capacity in terms of better understanding of Hydro-Meteorological Hazards Risk and effective collaborative actions, by implementing Prime Minister's 10-point agenda and Sendai Framework for Disaster Risk Reduction, for reducing the risk and enhancing the resilience of affected communities and surroundings.

- The key take away from the webinar series consists of the fact that at present occurrences of Hydro-Meteorological events are quite predictable in terms of time and space through the technological capacity of nodal agencies.

- IMD and NIDM will further enhance the forecasting abilities that will help to acquaint the occurrence of Hydro-Meteorological events in advance with more precision and will aid the relevant stakeholders and communities to take the appropriate prevention and mitigation measures.

The Sendai Framework for Disaster Risk Reduction:

➤ The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) was the first major agreement of the post-2015 development agenda and provides Member States with concrete actions to protect development gains from the risk of disaster.

➤ The Sendai Framework works hand in hand with the other 2030 Agenda agreements, including The Paris Agreement on Climate Change, The Addis Ababa Action Agenda on Financing for Development, the New Urban Agenda, and ultimately the Sustainable Development Goals.

➤ It was endorsed by the UN General Assembly following the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR), and advocates for:

➤ It recognizes that the State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders.

➤ The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. It is the outcome of stakeholder consultations initiated in March 2012 and inter-governmental negotiations held from July 2014 to March 2015, which were supported by the UNDRR upon the request of the UN General Assembly.

➤ UNDRR is tasked to support the implementation, follow-up and review of the Sendai Framework.

THE SENDAI FRAMEWORK OUTLINES SEVEN GLOBAL TARGETS TO BE ACHIEVED BY 2030:

SUBSTANTIAL REDUCTIONS

A. Reduce global disaster mortality

B. Reduce the number of affected people globally

C. Reduce direct economic loss in relation to GDP

D. Reduce disaster damage to critical infrastructure and disruption of basic services

E. Increase the number of countries with national and local disaster risk reduction strategies

F. Substantially enhance international cooperation to developing countries

G. Increase the availability of and access to multi-hazard early warning systems

SUBSTANTIAL INCREASES

2   Submarine cable connectivity to Andaman & Nicobar Islands (A&NI)

CONTEXT:

- Prime Minister inaugurated the submarine Optical Fibre Cable (OFC) connecting Chennai and Port Blair.

ABOUT:

- The submarine cable will also connect Port Blair to Swaraj Dweep (Havelock), Little Andaman, Car Nicobar, Kamorta, Great Nicobar, Long Island, and Rangat. This connectivity will enable delivery of faster and more reliable mobile and landline telecom services to Andaman & Nicobar Islands, at par with other parts of India.

- Once inaugurated, the submarine OFC link will deliver bandwidth of 2 x 200 Gigabits per second (Gbps) between Chennai and Port Blair, and 2 x 100 Gbps between Port Blair and the other islands.

- Provision of reliable, robust, and high-speed telecom and Broadband facilities in these Islands will be a landmark achievement from the viewpoint of consumers, as well as for strategic and governance reasons. 4G mobile services, which were constrained due to limited backhaul bandwidth provided via satellite will also see a major improvement.

- Enhanced telecom and Broadband connectivity will boost tourism and employment generation in the Islands, give an impetus to the economy and raise standards of living.

- Better connectivity will also facilitate delivery of e-Governance services such as telemedicine and tele-education. Small enterprises will benefit from opportunities in e-commerce, while educational institutions will utilize the enhanced availability of bandwidth for e-learning and knowledge sharing. Business Process Outsourcing services and other medium and large enterprises will also reap the benefits of better connectivity.
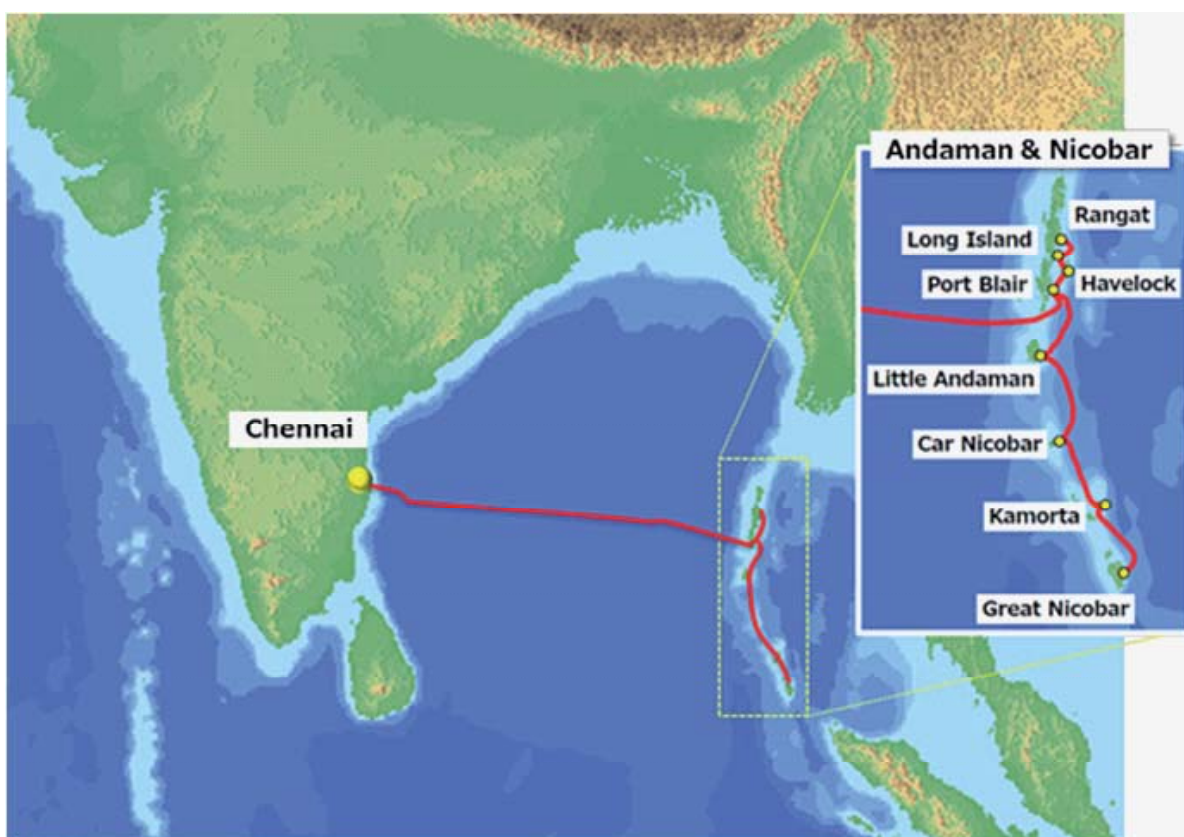
3   Organic farming

CONTEXT:

- The growth story of organic farming is unfolding with increasing demand not only in India but also globally. In a world battered by the COVID pandemic, the demand for healthy and safe food is already showing an upward trend and hence this is an opportune moment to be captured for a win-win situation for our farmers, consumers and the environment.

ABOUT:

- India ranks first in number of organic farmers and ninth in terms of area under organic farming. Sikkim became the first State in the world to become fully organic and other States including

Tripura and Uttarakhand have set similar targets. North East India has traditionally been organic and the consumption of chemicals is far less than rest of the country. Similarly the tribal and island territories are being nurtured to continue their organic story.

● With the aim of assisting farmers to adopt organic farming and improve remunerations due to premium prices, two dedicated programs namely Mission Organic Value Chain Development for North East Region (MOVCD) and Paramparagat Krishi Vikas Yojana (PKVY) were launched in 2015 to encourage chemical free farming.

● With the simultaneous thrust given by the Agri-export Policy 2018, India can emerge as a major player in global organic markets. The major organic exports from India have been flax seeds, sesame, soybean, tea, medicinal plants, rice and pulses, which were instrumental in driving an increase of nearly 50% in organic exports in 2018-19, touching Rs 5151 crore.

● Modest commencement of exports from Assam, Mizoram, Manipur and Nagaland to UK, USA, Swaziland and Italy have proved the potential by increasing volumes and expanding to new destinations as the demand for health foods increases.

● Certification is an important element of organic produce to instill customer confidence. Both PKVY and MOVCD are promoting certification under Participatory Guarantee System (PGS) and National Program for Organic Production (NPOP) respectively targeting domestic and exports markets.
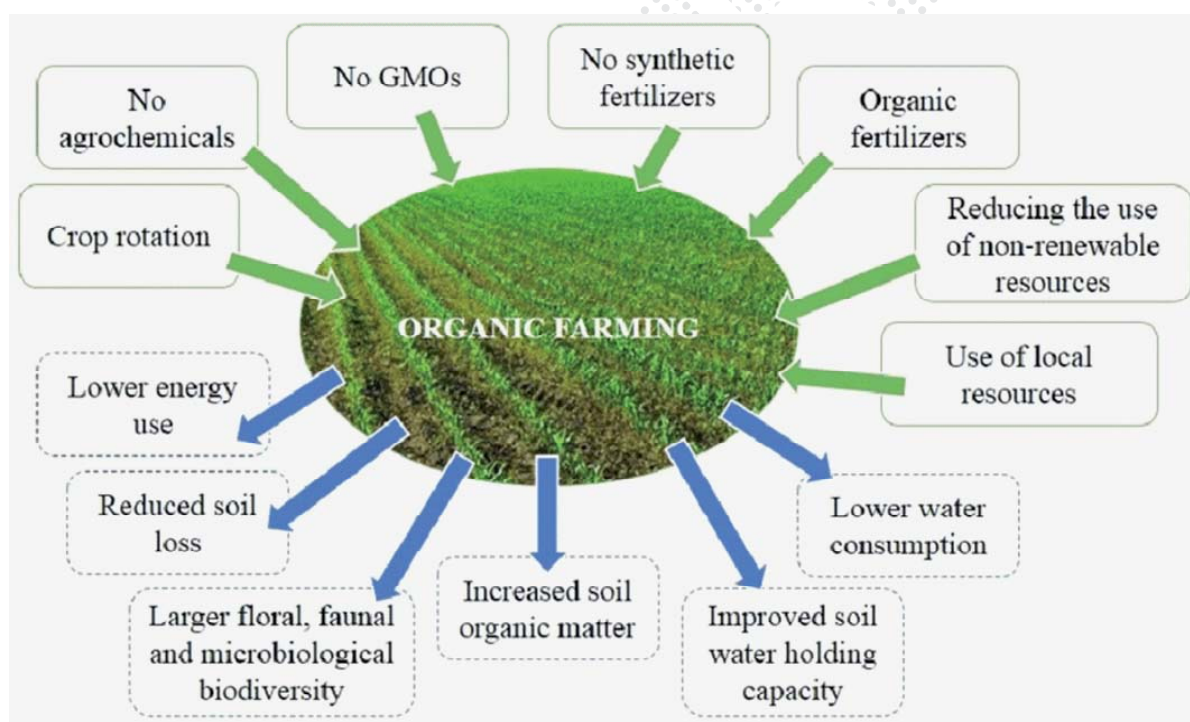
Organic farming:

➤ It is defined by the use of fertilizers of organic origin such as compost manure, green manure, and bone meal and places emphasis on techniques such as crop rotation and companion planting.

➤ Biological pest control, mixed cropping and the fostering of insect predators are encouraged. Organic standards are designed to allow the use of naturally occurring substances while prohibiting or strictly limiting synthetic substances.

> ➤ Organic agricultural methods are internationally regulated and legally enforced by many nations, based in large part on the standards set by the International Federation of Organic Agriculture Movements (IFOAM), an international umbrella organization for organic farming organizations established in 1972.

4 The Insolvency and Bankruptcy Board of India (Insolvency Resolution Process for Corporate Persons) Regulations, 2016

CONTEXT:

- The Insolvency and Bankruptcy Board of India (IBBI) notified the Insolvency and Bankruptcy Board of India (Insolvency Resolution Process for Corporate Persons) (Fourth Amendment) Regulations, 2020 .

ABOUT:

- The Insolvency and Bankruptcy Code, 2016 (Code) envisages appointment of an authorised representative (AR) by the Adjudicating Authority to represent financial creditors in a class, like allottees under a real estate project, in the committee of creditors. For this purpose, the Regulations require the interim resolution professional to offer a choice of three Insolvency Professionals (IP) in the public announcement, and the creditors in a class to choose one of them to act as their authorised representative.

- The amendment made to the Regulations provides that the three IPs offered by the interim resolution professional must be from the State or Union Territory, which has the highest number of creditors in the class as per records of the corporate debtor. This will facilitate ease of coordination and communication between the AR and the creditors in the class he represents.

- The Regulations currently envisage that the authorised representative shall seek voting instructions from creditors in a class at two stages, namely, (i) before the meeting; and (ii) after circulation of minutes of meeting.

- The amendment made to the Regulations provides that the authorised representative shall seek voting instructions only after circulation of minutes of meeting and vote accordingly. He shall, however, circulate the agenda, and may seek preliminary views of creditors in the class before the meeting, to enable him to effectively participate in the meeting.

- The Regulations provide that the committee of creditors shall evaluate all compliant resolution plans as per evaluation matrix to identify the best of them and may approve it. The amendment made to the Regulations today provides that after evaluation of all compliant resolution plans as per evaluation matrix, the committee of creditors shall vote on all compliant resolution plans simultaneously. The resolution plan, which receives the highest votes, but not less than sixty-six percent of voting share, shall be considered as approved.

5 Agriculture Infrastructure Fund

CONTEXT:

- The Government launched financing facility of Rs. 1 Lakh Crore under Agriculture Infrastructure Fund.

AGRICULTURE INFRASTRUCTURE FUND:

- The Agriculture Infrastructure Fund is a medium - long term debt financing facility for investment in viable projects for post-harvest management infrastructure and community farming assets through interest subvention and credit guarantee.

- The duration of the scheme shall be from FY2020 to FY2029 (10 years). Under the scheme, Rs. 1 Lakh Crore will be provided by banks and financial institutions as loans with interest subvention of 3% per annum and credit guarantee coverage under CGTMSE scheme for loans up to Rs. 2 Crore.

- The beneficiaries will include farmers, PACS, Marketing Cooperative Societies, FPOs, SHGs, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Startups, and Central/State agency or Local Body sponsored Public-Private Partnership Projects.

PM-KISAN:

- The PM-KISAN scheme was launched in December 2018 to provide income support by way of a cash benefit to all landholding farmers (subject to certain exclusion criteria) to enable them to fulfill their agricultural requirements and support their families.

- Under the scheme, the financial benefit of Rs.6000/- per year is provided to eligible beneficiary farmers in three equal installments.

Significance of the development

- The scheme will support farmers, PACS, FPOs, Agri-entrepreneurs, etc. in building community farming assets and post-harvest agriculture infrastructure.

- These assets will enable farmers to get greater value for their produce as they will be able to store and sell at higher prices, reduce wastage, and increase processing and value addition.

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6 | Defence Production and Export Promotion Policy 2020

CONTEXT:

- In order to provide impetus to self-reliance in defence manufacturing, multiple announcements were made under 'Atmanirbhar Bharat Package'. In implementing such framework and to position India amongst the leading countries of the world in defence and aerospace sectors, Ministry of Defence (MoD) has formulated a draft Defence Production and Export Promotion Policy 2020 (DPEPP 2020).

ABOUT:

- The DPEPP 2020 is envisaged as overarching guiding document of MoD to provide a focused, structured and significant thrust to defence production capabilities of the country for self-reliance and exports.

- The policy has laid out following goals and objectives:

  - To achieve a turnover of Rs 1,75,000 Crores (US$ 25Bn) including export of Rs 35,000 Crore (US$ 5 Billion) in Aerospace and Defence goods and services by 2025.

  - To develop a dynamic, robust and competitive Defence industry, including Aerospace and Naval Shipbuilding industry to cater to the needs of Armed forces with quality products.

  - To reduce dependence on imports and take forward "Make in India" initiatives through domestic design and development.

  - To promote export of defence products and become part of the global defence value chains.

BATCH 2

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03	Essay Mock Tests
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18	Subsectional Tests
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05	Revision Tests
06	Sectional Tests
03	CSAT Tests
06	Mock Tests

BATCH Starts:
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"Some Practice Improves Result"

⊙ To create an environment that encourages R&D, rewards innovation, creates Indian IP ownership and promotes a robust and self-reliant defence industry.

The Policy brings out multiple strategies under the following focus areas:

- Procurement Reforms
- Indigenization & Support to MSMEs/Startups
- Optimize Resource Allocation
- Investment Promotion, FDI & Ease of Doing Business
- Innovation and R&D
- DPSUs and OFB
- Quality Assurance & Testing Infrastructure
- Export Promotion

7 Sahakar Cooptube NCDC Channel

CONTEXT:

- The Government launched the Sahakar Cooptube NCDC Channel, a new initiative by National Cooperative Development Corporation (NCDC).

ABOUT:

- The key strategy in the ecosystem is to facilitate involvement of youth in cooperatives. Formation of new cooperatives is a prerequisite for bringing new life and dedication in the realm of cooperative movement.
- The guidance videos in different languages covering 18 States would also strengthen and deepen the major initiatives of our Government to promote and form 10,000 FPOs.
- NCDC has a major role in formation of FPOs in cooperative mode. More states would be added to the collection of guidance videos on NCDC Sahakar Cooptube Channel in due course of time.

8 Khadi Agarbatti Aatmanirbhar Mission

CONTEXT:

- The Government has approved a New Scheme to Make India Aatmanirbhar in Agarbatti Production.

ABOUT:

- Union Minister for MSME has approved a unique employment generation program proposed by Khadi and Village Industries Commission (KVIC) to make India Aatmanirbhar in Agarbatti production.
- The program named as "Khadi Agarbatti Aatmanirbhar Mission" aims at creating employment for unemployed and migrant workers in different parts of the country while increasing domestic Agarbatti production substantially.
- The proposal was submitted to the Ministry of MSME for approval last month. The pilot project will be launched soon and on full-fledged implementation of the project, thousands of jobs will be created in the Agarbatti industry.

- The scheme designed by KVIC on PPP mode is unique in the sense that in a very less investment, it will create sustainable employment and help private Agarbatti manufacturers to scale up Agarbatti production without any capital investment by them.
- Under the scheme, KVIC will provide Automatic Agarbatti making machines and powder mixing machines to the artisans through the successful private Agarbatti manufacturers who will sign the agreement as business partners. KVIC has decided to procure only locally made machines by Indian manufacturers which also aims at encouraging local production.
- As per the scheme, the wages to the artisans will be provided by the business partners on weekly basis directly in their accounts through DBT only. Supply of raw material to the artisans, logistics, quality control and marketing of the final product will be the sole responsibility of the business partner.
- The program aims at handholding artisans and supporting the local Agarbatti industry.

9   Himalayan Geothermal Springs

CONTEXT:

- Himalayan Geothermal Springs release huge amount of carbon dioxide in the atmosphere.

ABOUT:

- Carbon outflux from Earth's interior to the exosphere through volcanic eruptions, fault zones, and geothermal systems contribute to the global carbon cycle that effects short and long term climate of the Earth.
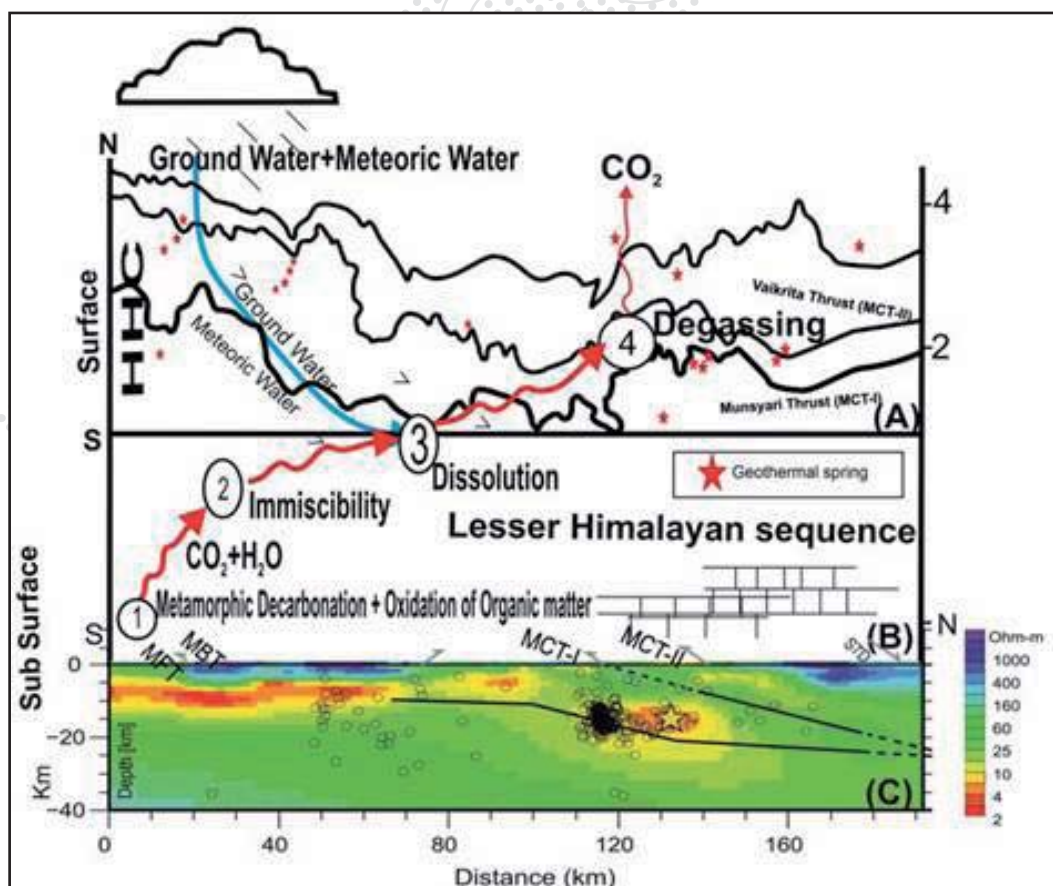
- Himalaya hosts about 600 geothermal springs having varied temperature and chemical conditions. Their role in regional and global climate, as well as the process of tectonic driven gas emission, needs to be considered while estimating emissions to the carbon cycle and thereby to global warming.

- The Himalayan geothermal springs which cover about 10,000 square km in the Garhwal region of Himalaya, show a significant discharge of Carbon dioxide(CO_2) rich water.

- The study published in the scientific journal *Environmental Science and Pollution Research* suggested that CO_2 in these thermal springs are sourced from metamorphic decarbonation of carbonate rocks present deep in the Himalayan core along with magmatism and oxidation of graphite.

- Most of the geothermal water is dominated by evaporation followed by weathering of silicate rocks. Isotopic analyses further point towards a meteoric source for geothermal water.z

10 Sustained & efficient Hydrogen Evolution

CONTEXT:

- Bangalore based researchers synthesize durable, efficient, cost-effective catalyst for sustained & efficient Hydrogen Evolution.

About:

- Researchers from the Centre for Nano and Soft Matter Sciences (CeNS) an autonomous institute under the Department of Science and Technology (DST), Government of India have synthesized a novel COP consisting of palladium Pd(II) ions, that serve as a source of active sites for H-adsorption, and benzene tetramine (BTA) chelating ligands capable of better charge transfer.

- The two combine to form two-dimensional (2D) sheets of Pd(BTA) through the H-bond interactions.

- Developing efficient means of splitting water to produce hydrogen and obtaining the energy required for it from solar energy would be a significant part of the sustainable and green solutions for our energy needs.

- In order to phase out fossil fuels and combat climate change, hydrogen is projected as one of the next generation low carbon fuels. The future of use of hydrogen as a fuel lies in the design of efficient electrocatalysts for facilitating electrochemical splitting of water to produce hydrogen.

- The effectiveness of the electrocatalyst for the hydrogen (H_2) evolution reaction (HER) largely depends its durability (robustness), ability to lower the over potential of an electrochemical reaction maximally, and cost of synthesis (production). The commercially used Platinum (Pt) / Carbon (C) catalysts are efficient but expensive and suffer from metal ion leaching or electrocatalyst corrosion when used for long duration.

- Metal-organic frameworks (MOFs) and coordination polymers (COPs) are envisioned as the next generation catalysts as they can be tailored to achieve high surface area, less charge transfer resistance, and higher active sites for enhancing the efficiency of water splitting. Scientists have been searching for a novel approach for tuning of MOF based catalysts to prevent electrocatalyst corrosion.

> **Hydrogen fuel:**
>
> ► Hydrogen is a clean fuel that, when consumed in a fuel cell, produces only water. Hydrogen can be produced from a variety of domestic resources, such as natural gas, nuclear power, biomass, and renewable power like solar and wind.

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> ➤ These qualities make it an attractive fuel option for transportation and electricity generation applications. It can be used in cars, in houses, for portable power, and in many more applications.

> ➤ Hydrogen is an energy carrier that can be used to store, move, and deliver energy produced from other sources.

> ➤ Today, hydrogen fuel can be produced through several methods. The most common methods today are natural gas reforming (a thermal process), and electrolysis. Other methods include solar-driven and biological processes.

> ➤ **Thermal process**: Thermal processes for hydrogen production typically involve steam reforming, a high-temperature process in which steam reacts with a hydrocarbon fuel to produce hydrogen. Many hydrocarbon fuels can be reformed to produce hydrogen, including natural gas, diesel, renewable liquid fuels, gasified coal, or gasified biomass. Today, about 95% of all hydrogen is produced from steam reforming of natural gas.

> ➤ **Electrolytic processes:** Water can be separated into oxygen and hydrogen through a process called electrolysis. Electrolytic processes take place in an electrolyzer, which functions much like a fuel cell in reverse—instead of using the energy of a hydrogen molecule, like a fuel cell does, an electrolyzer creates hydrogen from water molecules.

> ➤ **Solar-driven process:** Solar-driven processes use light as the agent for hydrogen production. There are a few solar-driven processes, including photobiological, photo electro chemical, and solar thermo chemical. Photo biological processes use the natural photosynthetic activity of bacteria and green algae to produce hydrogen.

> ➤ **Biological process**: Biological processes use microbes such as bacteria and microalgae and can produce hydrogen through biological reactions. In microbial biomass conversion, the microbes break down organic matter like biomass or wastewater to produce hydrogen, while in photobiological processes the microbes use sunlight as the energy source.

11 Report of the Committee on Business Responsibility Reporting

CONTEXT:

- Ministry of Corporate Affairs releases the Report of the Committee on Business Responsibility Reporting.

ABOUT:

- The Ministry of Corporate Affairs has been taking various initiatives for ensuring responsible business conduct by companies. As a first step towards mainstreaming the concept of business responsibility, the 'Voluntary Guidelines on Corporate Social Responsibility' were issued in 2009.

- These guidelines were subsequently revised as 'National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business, 2011 (NVGS)' after extensive consultations with business, academia, civil society organizations and the government.

- The Securities and Exchange Board of India (SEBI) through its 'Listing Regulations' in 2012 mandated the top 100 listed entities by market capitalization to file Business Responsibility Reports (BRRs) from an environmental, social and governance perspective.

- These BRRs enabled business to demonstrate the adoption of the NVG principles and the attendant core elements with the intent of engaging businesses more meaningfully with their stakeholders going beyond regulatory financial compliance. This was extended to top 500 companies in FY 2015-16 and further extended to top 1000 companies in December, 2019.

REPORT:

- In its Report, the Committee recommended a new reporting framework called as the 'Business Responsibility and Sustainability Report (BRSR)' to better reflect the intent and scope of reporting on non-financial parameters.

- The Committee recommended two formats for disclosures: one 'comprehensive format' and the second a 'Lite version'.

- The Committee further recommended that the implementation of the reporting requirements should be done in a gradual and phased manner. The Committee also recommended that the BRSR be integrated with the MCA21 portal. As a long-term measure, the Committee envisions that the information captured through BRSR filings be used to develop a Business Responsibility-Sustainability Index for companies.

12 | Water reservoirs in India

CONTEXT:

- Live storage available in 123 reservoirs in the country is 88% of the live storage of corresponding period last year and 98% of storage of average of last ten years

ABOUT:

- Central Water Commission is monitors live storage status of reservoirs of the country . Out of these reservoirs, 43 reservoirs have hydropower benefit with installed capacity of more than 60 MW.

- **The northern region** includes States of Himachal Pradesh, Punjab and Rajasthan. There are 8 reservoirs under CWC monitoring having total live storage capacity of 19.17BCM. The total live storage available in these reservoirs is 9.77 BCM which is 51%of total live storage capacity of these reservoirs.

- T**he Eastern region** includes States of Jharkhand, Odisha, West Bengal, Tripura and Nagaland. There are 18 reservoirs under CWC monitoring having total live storage capacity of 19.43 BCM. Total live storage available in these reservoirs is 7.79 BCM which is 40% of total live storage capacity of these reservoirs.

- **The Western region** includes States of Gujarat and Maharashtra. There are 42 reservoirs under CWC monitoring having total live storage capacity of 35.24 BCM. Total live storage available in these reservoirs is 19.02 BCM which is 54% of total live storage capacity of these reservoirs.

- **The Central region** includes States of Uttar Pradesh, Uttarakhand, Madhya Pradesh and Chhattisgarh. There are 19 reservoirs under CWC monitoring having total live storage capacity of 44.45BCM. Total live storage available in these reservoirs is 24.26 BCM which is 55% of total live storage capacity of these reservoirs.

- **The Southern region** includes States of Andhra Pradesh, Telangana, AP&TG (2combined projects in both states), Karnataka, Kerala and Tamil Nadu. There are 36reservoirs under CWC monitoring having total live storage capacity of 52.81 BCM. Total live storage available in these reservoirs is 32.08 BCM which is 61% of total live storage capacity of these reservoirs.

> **Central Water Commission:**
>
> ▸ It is a premier Technical Organization of India in the field of Water Resources and is presently functioning as an attached office of the Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation, Government of India.

> ➤ The Commission is entrusted with the general responsibilities of initiating, coordinating and furthering in consultation of the State Governments concerned, schemes for control, conservation and utilization of water resources throughout the country, for purpose of Flood Control, Irrigation, Navigation, Drinking Water Supply and Water Power Development.
>
> ➤ It also undertakes the investigations, construction and execution of any such schemes as required.

13 Naval Innovation and Indigenisation Organisation (NIIO)

CONTEXT:

- The Ministry of Defence launched the **Naval Innovation and Indigenisation Organisation (NIIO)** through an online webinar.

ABOUT:

- The NIIO puts in place dedicated structures for the end users to interact with academia and industry towards fostering innovation and indigenisation for self-reliance in defence in keeping with the vision of Atmanirbhar Bharat.

- The NIIO is a three-tiered organisation. **Naval Technology Acceleration Council (N-TAC)** will bring together the twin aspects of innovation and indigenisation and **provide apex level directives**.

- A working group under the N-TAC will implement the projects. A **Technology Development Acceleration Cell (TDAC)** has also been created for induction of emerging disruptive technology in an accelerated time frame.

- The Draft Defence Acquisition Policy 2020 (DAP 20) envisages Service Headquarters establishing an Innovation & Indigenisation Organisation within existing resources. **Indian Navy already has a functional Directorate of Indigenisation (DoI)** and the new structures created will build upon the ongoing indigenisation initiatives, as well as focus on innovation.

14 Artificial Intelligence Step-up modules

CONTEXT:

- NITI Aayog's Atal Innovation Mission, NASSCOM launch Artificial Intelligence Step-up modules to school students nationwide.

ABOUT:

- After a successful launch of a unique initiative to take Artificial Intelligence (AI) to schools through 'ATL AI Modules', Atal Innovation Mission, NITI Aayog in collaboration with NASSCOM launched the 'ATL AI Step Up Module' for students on the eve of India's Independence Day in order to drive AI education and innovation to the next level in schools across the country.

- This module is the next step in bringing AI to Indian classrooms and is a successor to the AI Base module launched in February this year.

- The AI Step-up Module provides a comprehensive set of learn it yourself Advanced modules to those who wish to expand their knowledge base after becoming familiar with the basics of the AI discipline through the AI base module.
- With this new launch, through hands-on projects and activities, the step-up module encourages a deeper understanding of AI which can be applied in the real world. The module is designed in an attractive graphical manner that is comprehensible for all students belonging to rural and urban areas.

Artificial intelligence (AI):

➤ Artificial intelligence, sometimes called machine intelligence, is intelligence demonstrated by machines, unlike the natural intelligence displayed by humans and animals.

➤ Leading AI textbooks define the field as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals.Colloquially, the term "artificial intelligence" is often used to describe machines (or computers) that mimic "cognitive" functions that humans associate with the human mind, such as "learning" and "problem solving".

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15 Indigenous Air Unique-quality Monitoring (AUM) Photonic System

Context:

- Indigenous Air Unique-quality Monitoring (AUM) Photonic System developed for Real-Time Remote Monitoring of Air Quality

About:

- World Health Organisation (WHO)'s reports show that the worsening state of poor air quality is responsible for more than 7.5 million fatalities worldwide annually. This highlights the necessity for accurate, yet cost-effective monitoring of air quality parameters as monitoring is critical to solution.
- The current systems and technologies used for air quality monitoring are prohibitively expensive for wider deployment. This underlines the need for development of systems for real-time remote monitoring of relevant air quality parameters.
- With the support from Department of Science and Technology's Clean Air Research Initiative, Prof. Rao Tatavarti, Director of Gayatri Vidya Parishad-Scientific and Industrial Research Centre (GVP-SIRC) & GVP College of Engineering, Visakhapatnam, has developed an indigenous photonic system for real-time remote monitoring of air quality parameters.
- The AUM system is an innovative application of the principles of laser backscattering, statistical mechanics, optoelectronics, artificial intelligence, machine/deep learning, and Internet of Things.
- It can identify, classify, and quantify various pollutants simultaneously (of orders of less than one part per billion) and meteorological parameters, with very high precision, sensitivity and accuracy.
- It has been found to be highly sensitive and accurate and capable of simultaneous detection and quantification of all air quality parameters and offers a number of merits over any of the currently available conventional systems.

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