January 2023

CURRENT AFFAIRS
For ESE & PSUs

- Microplastic
- Jaga Mission
- India Stack
- Vostro Account
- Zero Defect Zero Effect
- Montreal Protocol
- Purse Seines

For Competitive Exams like
ESE, PSUs & State Engineering Exams

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SECTION III – INDUSTRIAL ISSUES

## SECTION IV – ENVIRONMENTAL ISSUES

1. SOCIAL ISSUES

HEALTH

Ayushman Bharat Digital Mission

The Ayushman Bharat Digital Mission (ABDM) aims to develop the backbone necessary to support the integrated digital health infrastructure of the country. It will bridge the existing gap amongst different stakeholders of healthcare ecosystem through digital highways.

- To create a system of personal health records, based on international standards, easily accessible to individuals and healthcare professionals and services providers, based on individual's informed consent;
- To promote development of enterprise-class health application systems with a special focus on achieving the Sustainable Development Goals for health;
- To adopt the best principles of cooperative federalism while working with the States and Union Territories for the realization of the vision.
- To ensure that the healthcare institutions and professionals in the private sector participate actively with public health authorities in the building of the Ayushman Bharat Digital Mission (ABDM), through a combination of prescription and promotion.
- To strengthen existing health information systems, by ensuring their conformity with the defined standards and integration with the proposed Ayushman Bharat Digital Mission (ABDM).
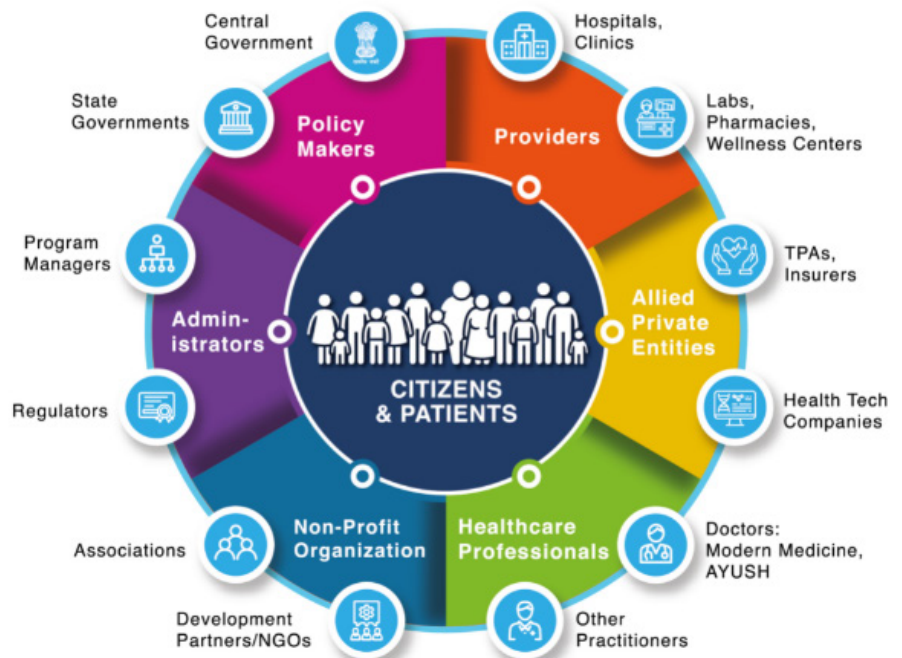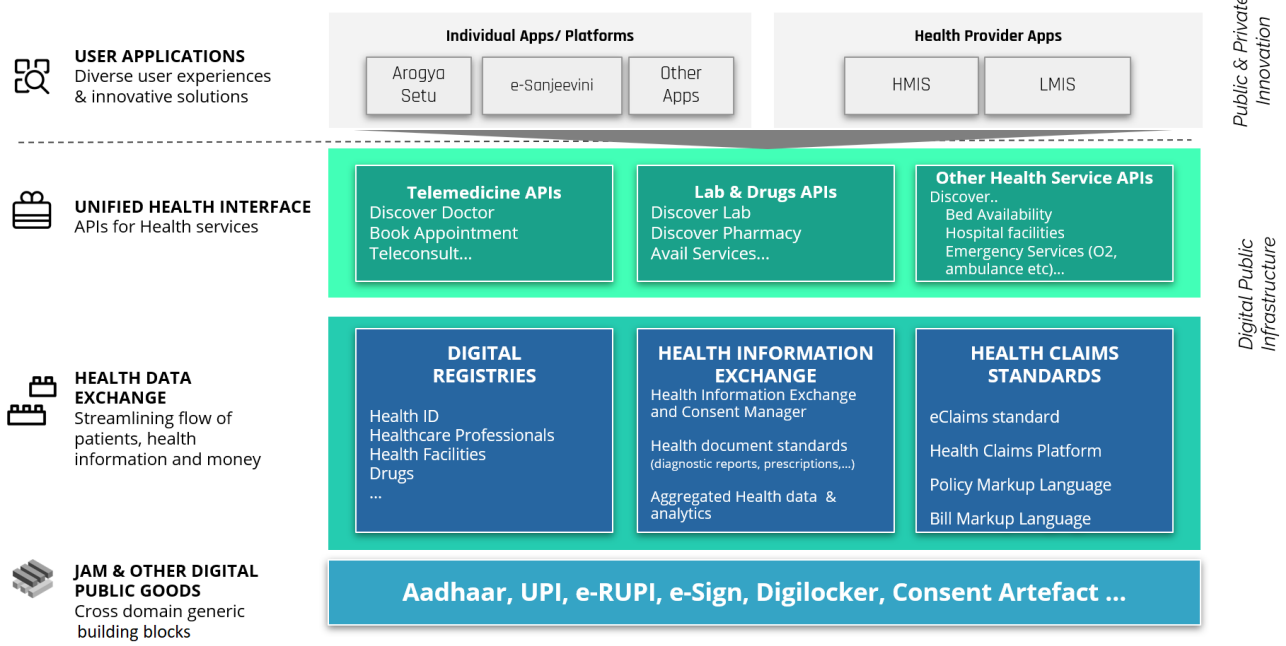
ABHA Number

ABHA Number is a **14-digit identification number** and can be generated using an Aadhaar card or your mobile number. It allows users to share their health records digitally with hospitals, clinics, insurance providers, and others.

ABDM Architecture

ABDM Stack – Modular and interoperable

COVID-19 Stringency Index

The Oxford Coronavirus Government Response Tracker (OxCGRT) project calculate a Stringency Index, a composite measure of nine of the response metrics.

The nine metrics used to calculate the Stringency Index are: school closures; workplace closures; cancellation of public events; restrictions on public gatherings; closures of public transport; stay-at-home requirements; public information campaigns; restrictions on internal movements; and international travel controls.

The index on any given day is calculated as the mean score of the nine metrics, each taking a value between 0 and 100.

A higher score indicates a stricter response (i.e., 100 = strictest response). If policies vary at the subnational level, the index is shown as the response level of the strictest sub-region.

It's important to note that this index simply records the strictness of government policies. It does not measure or imply the appropriateness or effectiveness of a country's response. A higher score does not necessarily mean that a country's response is 'better' than others lower on the index.

POVERTY

Jaga Mission – Odisha Livable Habitat Mission

Jaga Mission is the largest land titling and slum upgrading scheme in India and one of the largest in the world. The project is ongoing and is scaling up across Odisha state thanks to a mentoring model, under which 62 specially trained mentors from 28 pilot cities have gone to support other cities during their slum upgrading work.

The success of the program to date has led to Jaga Mission's decentralized delivery model being held up as an example to be replicated elsewhere in India. Transfer to other states requires strong political will to drive collaborations between skeptical city authorities, slum dwellers' associations, and local non-governmental organizations. In the northern state of Punjab, however, the project is already being replicated to directly benefit an additional 1.4 million slum dwellers.

Jaga Mission demonstrates that empowering these marginalized communities is a very effective way to achieve large-scale slum upgrading schemes and promote equality for millions of India's urban poor.

Survival of the Richest

"Survival of the Richest" is published on the opening day of the 2023 World Economic Forum in Davos, Switzerland.

The top 1 percent in India now owns more than 40.5 percent of total wealth in 2021 while the bottom 50% of the population (700 million) has around 3 per cent of total wealth.

Since the pandemic begun to Nov 2022, billionaires in India have seen their wealth surge by 121%, or INR 3608 Crore per day in real terms (Around INR 2.5 crore every minute).

The rich have done well for themselves, while the number of hungry Indians has increased from 19 crores to 35 crores.
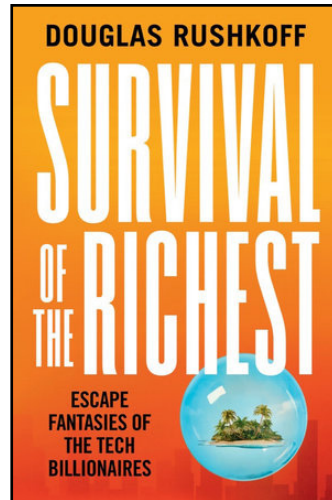
Atal Pension Yojana (APY)

The Atal Pension Yojana (APY) was launched to create a universal social security system for all Indians, especially the poor, the under-privileged and the workers in the unorganized sector.

The scheme was launched on 9 May, 2015,2 and was operationalized w.e.f. 1 June, 20153 . The APY is focused on all citizens in the unorganized sector, who join the National Pension System (NPS) administered by the Pension Fund Regulatory and Development Authority (PFRDA) and who are not members of any statutory social security scheme.

APY can be subscribed by any Indian citizen in the age group of 18-40 years having a bank account. Under the APY, subscribers would receive the fixed pension of Rs. 1000 – Rs. 5000 per month, at the age of 60 years, depending on their contributions, which in turn would vary on the age of joining the APY.

APY8 is being administered by the Pension Fund Regulatory and Development Authority (PFRDA) which has taken several steps to create awareness and increase the outreach of the Scheme.

POLICIES & PROGRAMS

India Stack

- India Stack is the moniker for a set of open APIs and digital public goods that a im to unlock the economic primitives of identity, data, and payments at population scale.
- Although the name of this project bears the word India, the vision of India Stack is not limited to one country; it can be applied to any nation, be it a developed one or an emerging one.
- This project was conceptualized and first implemented in India, where its rapid adoption by billions of individuals and businesses has helped promote financial and social inclusion and positioned the country for the Internet Age.
- India Stack is the name used to describe a collection of disparate technology products and frameworks.
- The components of this collection are owned and maintained by different agencies.

- Aadhaar products such as e-auth and e-KYC are owned by the Unique ID Authority of India.
- eSign is a technology specification which is maintained by the Ministry of Communications and Information Technology.
- Digilocker is owned by the Ministry of Electronics and Information Technology.
- UPI is owned by the National Payments Corporation of India.
- The Account Aggregator framework is regulated by RBI and its technology standards and owned by ReBIT (Reserve Bank Information Technology Private Limited).

Identity

The bedrock of India Stack is a set of digital identity products centered around Aadhaar, India's national identity program.

Aadhaar Authentication

e-auth: A petitioner sends a user's Aadhaar number and name/ address/birthday/gender/email/phone number to the UIDAI server, which responds with a yes/no answer indicating whether the given fields were correct.

e-KYC: A petitioner collects consent (via biometric of two-factor OTP authentication) from a user and submits their Aadhaar number to the UIDAI system. The system then returns the user's entire KYC data including all six demographic fields and the user's photograph.

QR code scan: Each Aadhaar card comes with an accompanying QR code that can be scanned, allowing the scanner to verify the user's identity from the UIDAI database. Both physical and digital Aadhaar cards (e-Aadhaar) can be scanned in this manner, from UIDAI-built iOS apps, Android apps, or Windows apps.

Offline XML: In this mode of authentication, the user visits the UIDAI website, logs in using his Aadhaar-registered mobile number or email address, and then generates an XML object containing a digital signature from UIDAI. This XML can then be shared with any party, which can easily verify the digital signature and prove the user's identity.

e-Aadhaar: Users may obtain and share digitally signed PDF copies of their Aadhaar cards downloaded from the UIDAI database. According to Indian law, this PDF document is equally valid as the physical Aadhaar card which gets issued to users.

Payments

- In 2016 the National Payments Corporation of India (NPCI), bank-owned non-profit, announced the launch of the United Payments Interface (UPI), catapulting India into the age of digital payments.
- UPI is India's homegrown real-time mobile payments system. It was intended to continue the journey of financial inclusion that had begun with the goal of providing every Indian citizen with a bank account, now enabling them to take part in a digital economy that was rapidly becoming smartphone-enabled.
- UPI was designed to enable interoperability between money custodians, payment rails and front-end payment applications. In just 5 years, it has grown from an ambitious idea to becoming the world's 5th largest payment network by volume, behind only Visa, Alipay, WeChat Pay, and MasterCard.

Data

The India Stack focuses on establishing a new model for data governance in India. The policy framework known as the Data Empowerment and Protection Architecture (DEPA), to restore the ownership and control over user data to its rightful owners.

At its core, there are three main pillars that make up the DEPA framework.

- A landmark Personal Data Protection Bill which, for the first time ever, gives Indian citizens a number of rights pertaining to their data
- An electronic consent artefact, which establishes a standardized and programmable digital template for capturing user consent to share their personal data with third parties
- A new category of regulated entities known as 'consent managers' (in the Financial Services sector these will be known as Account Aggregators). These AA's are tasked with playing the role of traffic cops in a typical data value chain. They provide an interface to facilitate the 'easy sharing and consumption of data from various entities with user consent'.

The Account Aggregator
will facilitate consented sharing of financial information in real-time
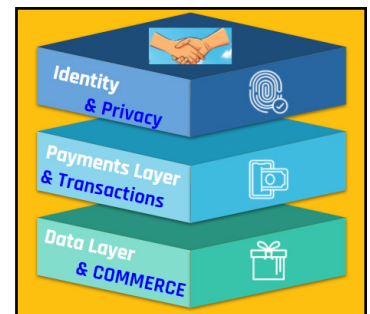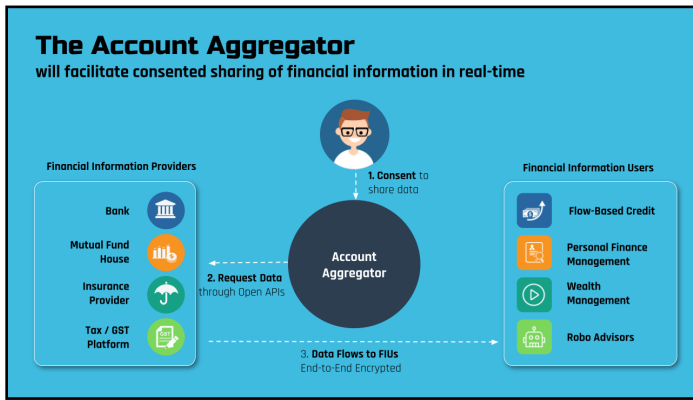
India Stack Knowledge Exchange 2022

India Stack Knowledge Exchange kick started on 7th July 2022. The event is an opportunity to showcase India's most significant contribution to the Digital world - the India Stack, which is a unified software platform to bring India's 1.4 billion population into the Digital Age.

The First India Stack Developer Conference held on 25 January 2023

It deliberated on new and next-generation services for India Stack Solutions viz. Aadhaar, DigiLocker, UPI, UMANG, DIKSHA, e-Sanjeevani

Indian Software Product Industry Round Table (iSPIRIT)

iSPIRT works to transform India into a hub for new generation software products, by addressing crucial government policy, creating market catalysts and grow the maturity of product entrepreneurs.

Bharat Distributed Ledger (BADAL) for accelerating trusted commerce in India

BADAL (also happens to be a word for Cloud in local language), a techno-legal solution in the form of "Distributed Ledger for Privacy-preserving Trustful Commerce; is proposed as an interoperable fabric underlying a future programmable economy across large and small businesses to create high trust economy.

By connecting a new digital money ledger (such as Central Bank Digital Currency, or stablecoins) with the new goods & services ledger, it envisages a boost to trust across economy and commerce. As such, BADAL is the first such framework globally, uniquely suited to India's needs, opportunities and strengths.

WOMEN EMPOWERMENT

Celebrating a Journey Together: Bangladesh and the World Bank

Bangladesh tells the world a remarkable story of poverty reduction and development: From being one of the poorest nations at its inception, today Bangladesh is one of the fastest-growing economies in the world. Its steady economic growth of over 6 percent per annum since 2000 has lifted millions of people out of poverty.

The country recognized early on that **empowering woman** is crucial to ending poverty.

In 1991, Bangladesh had one of the **lowest educational attainment levels for girls**. Now, it is among the few developing countries to have **achieved gender parity in school enrollment**. Other countries have replicated its innovative **Female Stipends Program**, which has become a model for bringing girls into school.

Bangladesh reduced fertility rates from 6.1 births per woman in 1971, to 2.1 births in 2018.

Another element of this success is how the ready-made garments industry created jobs for millions of women.

Bangladesh realized early that investing in people is just as critical as investing in infrastructure. A child born in 1972 had a life expectancy of 46.5 years; newborns today are expected to live to more than 70 years. 85 percent of children are fully immunized. Almost all children go to school.

Bangladesh moving on climate adaptation and disaster preparedness. Despite being severely affected by climate change, the country has been a frontrunner in **climate adaptation**. Thanks to its home-grown approach of early warning systems, a network of cyclone shelters, embankments and afforestation, deaths from cyclones have been reduced 100-fold since Independence.

TECHNOLOGY

Exercise Cyclone-I

The first-ever joint exercise between the special forces of the Indian Army and the Egyptian Army named "Exercise Cyclone-I" is underway in Rajasthan.

The exercise which began on January 14 is aimed at bolstering defence cooperation between the two nations and focus on sharing professional skills and interoperability of the special forces in desert terrain while undertaking counter-terrorism, reconnaissance, raids and other special operations, the statement added.

ETHINICITY

5-13th Amendment

Sri Lankan President Ranil Wickremesinghe gave his support for the full implementation of the 13th Amendment to its Constitution, which provides for the devolution of power to the minority Tamil community.

India has been urging Sri Lanka to implement the 13th Amendment which was brought in after the Indo-Sri Lankan agreement of 1987.

The Thirteenth Amendment to the Constitution of Sri Lanka (13A) is amendment to the Constitution of Sri Lanka, passed in 1987, which created Provincial Councils in Sri Lanka.

This amendment also made Sinhala and Tamil the official languages of the country and declared English the "link language".

On 29 July 1987, Indo-Sri Lanka Accord was signed between Indian Prime Minister Rajiv Gandhi and Sri Lankan President J.R. Jayewardene which stated the devolution of powers to the provinces.

Hence on 14 November 1987 the Sri Lankan Parliament passed the 13th Amendment to the 1978 Constitution of Sri Lanka and the Provincial Councils Act No 42 of 1987 to establish provincial councils.

The amendment aims at creating provincial councils in Sri Lanka and enable Sinhalese and Tamil as national languages while preserving English as the link language.

AGRICULTURE

International Year of Millets (IYM) 2023

WHY MILLET?

Sorghum (Cholam)
➤ Improves metabolism
➤ Crop is also grown for hay and fodder
➤ Is resistant to drought and heat

The crop is drought resistant; millets are easily available and easy to store

Lowers the risk of cardiovascular diseases

Millet is high in protein, vitamin B, iron, calcium and phytochemicals

Brings down the incidence of colon cancer, constipation and gastro-intentional complications

Gluten-free, rich in antioxidants and easy to digest

Kodo millet (Varagu)
➤ Rich in polyphenols, an antioxidant compound and fibre
➤ Good for diabetes

NUTRITIONAL VALUE OF MILLET (per 100g)
Calories | 119   Protein | 3.5gm
Fat | 1.0gm   Calcium | 3.0mg
Carbs | 23.7gm

Pearl millet (Cumbu
➤ Widely grown variety of millet
➤ Helps in minimising type 2 diabetes

Barnyard millet (Kudiraivali)
➤ High in fibre, calcium and phosphorous
➤ Has low glycemic index and helps in type 2 diabetes

Little millet (Samai)
➤ High in iron content
➤ Beneficial in diabetes and stomach-related diseases

Foxtail millet (Thinai)
➤ Mostly grown in east Asia
➤ Controls blood sugar and cholesterol

Finger millet (Ragi)
➤ Popular in south India
➤ Rich in calcium, protein and iron
➤ Has anti-oxidant and anti-diabetic properties

MILLET VS RICE
➤ Rice contains 130 calories (per 100g) as against 119 calories in millet
➤ Rice is high in carbohydrates (28.7g) than millet (23.7g)
➤ Millet has a high calcium content (3mg) than rice (1mg)

Proso millet (Pani varagu)
➤ Extensively cultivated in India, Nepal, Russia, Ukraine and Turkey
➤ Is fit for dry-land and no-till farming

'India's Wealth, Millets for Health'

2023 has been declared as **International Year of Millets (IYM)** by UN on a proposal by India with the aim to create awareness about the health benefits of millets.

About Millets
- Major Millets in India: jowar (sorghum), bajra (pearl millet) and ragi (finger millet).
- Indigenous varieties of "small millets" like kodo, kutki, chenna and sanwa.
- Earliest evidence found of Millets found in Indus civilization : 3000 BC.
- It was ancient food grains first plants domesticated for food.

Climatic condition:
- Short growing season (70-100 days, as against 120-150 days for paddy/wheat)
- Lower water requirement (350-500 mm versus 600-1,200 mm).
- Can grow even in poor soil
- It is a Kharif crop

Major producers include Rajasthan (highest), UP, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.

Production by District
2018-2019, metric tons
1 - 10,000
10,001 - 125,000
125,001 - 569,710
Percentage shown (%)

Map is for representation purpose only

TYPES OF MILLETS
Pearl Millet   Finger Millet
Foxtail Millet   Barnyard Millet
Kodo Millet   Little Millet
Sorghum

India (accounting for 20% of world production), Nigeria and China are the largest producers of millets in the world, accounting for more than 55% of the global production.
- However, in recent years, millet production has increased dramatically in Africa.
Production of millets has increased from 14.52 million tonnes in 2015-16 to 17.96 million tonnes in 2020-21.

INDIA'S MILLETS MAP

Jowar is grown mainly in Maharashtra, Karnataka, Rajasthan, and Tamil Nadu; bajra mainly in Rajasthan, UP, Haryana, Gujarat

Jammu and Kashmir • Haryana • Rajasthan • Gujarat • Madhya Pradesh • Maharashtra • Telangana • Karnataka • Kerala • Uttarakhand • Uttar Pradesh • Meghalaya • West Bengal • Odisha • Chhattisgarh • Andhra Pradesh • Tamil Nadu

JOWAR
4.24 mn ha area
4.78 mn tonnes production

BAJRA
7.75 mn ha area
10.86 mn tonnes production
(In 2020-21)

MILLETS GROWN IN
130 countries, traditional food for more than 500 million people

'NUTRI-CEREALS'
Govt has declared millets 'powerhouses of nutrition'.

Foxtail Millet · Finger Millet · Barnyard Millet · Browntop Millet · Little Millet · Kodo Millet · Pearl Millet · Proso Millet · Sorghum

MONEY & BANKING

Domestic Systemically Important Bank (D-SIB)

The Reserve Bank of India (RBI) announced on 5-1-23 that the State Bank of I ndia (SBI), ICICI Bank and HDFC Bank will continue to be identified as Domestic Systemically Important Banks (D-SIBs). According to the central bank, D-SIBs are financial institutions that are large enough where they cannot be allowed to fall.

Due to the way the D-SIBs become completely enmeshed in cross-jurisdictional activities, their complex financial structures, and the lack of other alternatives, they are considered systematically important.

A failure of any of these banks can lead to systemic and significant disruption to essential economic services across the country and can cause an economic panic.

As a result of their importance, the government is expected to bail out these banks in times of economic distress to prevent widespread harm.

Additionally, D-SIBs follow a different set of regulations in relation to systemic risks and moral hazard issues.

The system of D-SIBs was adopted in the aftermath of the 2008 financial crisis where the collapse of many systematically important banks across various regions further fueled the financial downturn.

How are D-SIBs determined?

Since 2015, the RBI has been releasing the list of all D-SIBs. They are classified into five buckets, according to their importance to the national economy.

In order to be listed as a D-SIB, a bank needs to have assets that exceed 2 percent of the national GDP. The banks are then further classified on the level of their importance across the five buckets.

ICICI Bank and HDFC Bank are in bucket one while SBI falls in bucket three, with bucket five representing the most important D-SIBs.

Too Big to Fail

- Domestic systemically important banks (D-SIBs) classified into five grades (buckets)
- RBI to announce list every August starting this year
- Banks will have to fulfil extra capital requirement norms (common equity tier I capital)
- Banks must meet the extra norms in three years by April 1, 2019
- Common equity tier I capital usually comprises a bank's equity capital, retained earnings and share premium

Bucket	Banks	Additional common equity tier I need as % of RWAs*
5	—	1
4	—	0.8
3	SBI	0.6
2	—	0.4
1	ICICI	0.2

Vostro accounts

A Vostro account is an account that a domestic bank holds for a foreign bank in the domestic bank's currency, i.e., rupee.

A Vostro account is defined as an account that a correspondent bank holds on behalf of another bank.

Vostro is a Latin word that means "your", therefore, a vostro account implies that it is "your account".

An example of such an account would be HSBC vostro account is held by SBI in India.

The banks are acting in a fiduciary relationship and they share a principal-agent relationship. The correspondent foreign bank is a financial intermediary in the transactions that they are involved in.

The foreign bank acts as an agent that provides services such as executing wire transfers, performing foreign exchange, enabling deposits, enabling withdrawals, expediting international trade on behalf of the domestic bank.

It is most used in settlement of foreign exchanges or foreign trade.

No interest will be paid on the vostro account maintained, as per the directives that have been issued by the RBI in India.

An overdraft facility can only be availed if it is specifically sanctioned.

Vostro, Nostro and Loro Accounts

Vostro and Nostro accounts are often confused to be the same. While in essence, it is the same account that is being spoken about, the perspective from which it is being seen matters. In a vostro account, it is the correspondent foreign bank point of view, whereas in a nostro account, it is the point of view of the domestic bank.

Vostro accounts are maintained in the domestic currency whereas, nostro accounts in foreign currency.

A Loro account is a current account that is maintained by one domestic bank for another domestic bank in the form of a third party account, unlike nostro and vostro which is bilateral correspondence.

Showrooming

Showrooming refers to the practice of checking out a product in a retail store before buying it from online retailers. Shoppers tend to take advantage of low online prices as compared to the showroom price.

World Economic Situation and Prospects 2023

The World Economic Situation and Prospects 2023 is a report produced by the United Nations Department of Economic and Social Affairs (UN DESA), in partnership with the United Nations Conference on Trade and Development (UNCTAD) and the five United Nations regional commissions: Economic Commission for Africa (UNECA), Economic Commission for Europe (UNECE), Economic Commission for Latin America and the Caribbean (UNECLAC), Economic and Social Commission for Asia and the Pacific (UNESCAP) and Economic and Social Commission for Western Asia (UNESCWA). The United Nations World Tourism Organization (UNWTO) also contributed to the report.

Multiple shocks to the world economy

Persistently high inflation, which averaged about 9 per cent in 2022, has prompted aggressive monetary tightening in many developed and developing countries.

World output growth is projected to decelerate from an estimated 3 per cent in 2022 to only 1.9 per cent in 2023, marking one of the lowest growth rates in recent decades. Global growth is forecast to moderately pick up to 2.7 per cent in 2024, if, as expected, some macroeconomic headwinds begin to subside next year. Inflationary pressures are projected to gradually abate amid weakening aggregate demand in the global economy.

A sharp downturn in most developed economies

In the United States, gross domestic product (GDP) is projected to expand by only 0.4 per cent in 2023 after estimated growth of 1.8 per cent in 2022. Consumers are expected to cut back spending given higher interest rates, lower real incomes and significant declines in household net worth.

The European Union is forecast to grow by 0.2 per cent in 2023, down from an estimated 3.3 per cent in 2022, when further easing of COVID 19 restrictions and release of pent-up demand boosted economic activities. As the European Union continues its efforts to reduce dependence on fossil fuels from the Russian Federation, the region remains vulnerable to disruptions in the energy supply, including gas shortages.

The prospects for the economy of the United Kingdom are particularly bleak given the sharp decline in household spending, fiscal pressures and supply-side challenges partly resulting from Brexit. A recession began in the United Kingdom in the second half of 2022; GDP is projected to contract by 0.8 per cent in 2023.

Despite growing at a moderate pace, Japan's economy is expected to be among the bette rperforming developed economies in 2023.

The war in Ukraine heavily impacts near-term economic prospects for the Commonwealth of Independent States and Georgia.

Russian economy shrank less than initially expected in 2022, with GDP declining by only about 3.5 per cent due to a massive current account surplus, the continued stability of the banking sector and the reversal of initially sharp monetary tightening.

A worsening outlook in most developing regions

Growth in China is projected to moderately improve in 2023 after weaker-than-expected performance in 2022.

Growth will likely remain well below the pre-pandemic rate of 6 to 6.5 per cent.

In 2023, GDP growth in East Asia is forecast to reach 4.4 per cent, compared to 3.2 per cent in 2022, mainly reflecting the modest recovery of growth in China.

In South Asia, the economic outlook has significantly deteriorated due to high food and energy prices, monetary tightening and fiscal vulnerabilities. Average GDP growth is projected to moderate from 5.6 per cent in 2022 to 4.8 per cent in 2023. Growth in India is expected to remain strong at 5.8 per cent, albeit slightly lower than the estimated 6.4 per cent in 2022, as higher interest rates and a global slowdown weigh on investment and exports. The prospects are more challenging for other economies in the region. Bangladesh, Pakistan and Sri Lanka sought financial assistance from the International Monetary Fund (IMF) in 2022.

In Western Asia, oil-producing countries have emerged from the economic slump, benefitting from high prices and rising oil output as well as the recovery of the tourism sector. Average growth is projected to slow from an estimated 6.4 per cent in 2022 to 3.5 per cent in 2023, given worsening external conditions.

In Africa, economic growth is projected to remain subdued with a volatile and uncertain global environment compounding domestic challenges. The region has been hit by multiple shocks, including weaker demand from key trading partners (especially China and Europe), a sharp increase in energy and food prices, rapidly rising borrowing costs and adverse weather events.

Economic growth is projected to slow from an estimated 4.1 per cent in 2022 to 3.8 per cent in 2023.

Latin America and the Caribbean

Regional growth is projected to slow to only 1.4 per cent in 2023, following an estimated expansion of 3.8 per cent in 2022.

The region's largest economies – Argentina, Brazil and Mexico – are expected to grow at very low rates due to tightening financial conditions, weakening exports and domestic vulnerabilities.

The least developed countries, many of which are highly vulnerable to external shocks, will confront significant challenges in 2023. Growth is projected at 4.4 per cent in 2023, about the same rate as last year and significantly below the 7 per cent growth target set in SDG 8.

FINANCE & INSURANCE

The Securities and Exchange Board of India (Sebi) has asked stock exchanges to set up an Investor Risk Reduction Access (IRRA) platform to enable investors to square-off or close their open positions and cancel pending orders in case of a technical glitch at the stockbroker.

- Service to be available in case of disruption due to technical glitches or cyberattacks
- IRRA platform to facilitate squaring off open positions or cancelling of pending orders
- Stockbrokers can request the availability of the service; stock exchanges can also initiate it
- Investors to have log-in access through PAN/UCC upon authorization via OTP
- Stock exchanges asked to set up infrastructure by October 1, 2023

ORGANIZATIONS

Cooperation in a Fragmented World: Addressing Pressing Crises, Tackling Future Challenges

The first version of Pradhan Mantri Kaushal Vikas Yojana (PMKVY) scheme was launched in 2015 to encourage and promote skill development in the country by providing free short duration skill training and incentivizing this by providing monetary rewards to youth for skill certification. The overall idea was to boost employability of youth corresponding to the industrial demand.

Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)
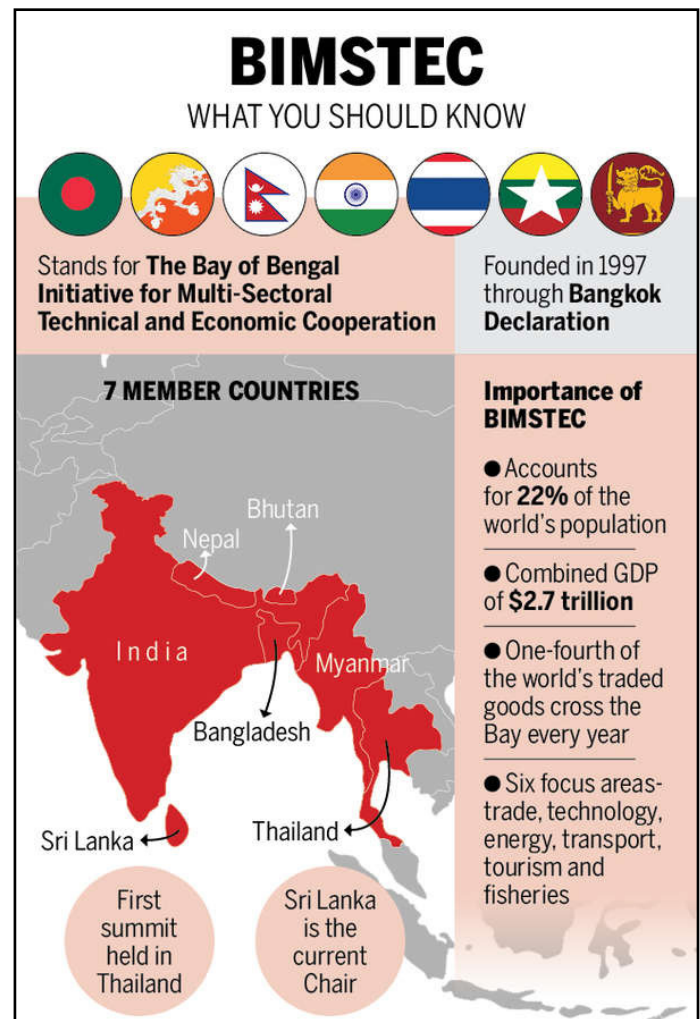
The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a regional organization that was established on 06 June 1997 with the signing of the Bangkok Declaration.

Initially known as BIST-EC (Bangladesh-India-Sri Lanka-Thailand Economic Cooperation), the organization is now known as BIMSTEC and comprises seven Member States with the admission of Myanmar on 22 December 1997, and Bhutan and Nepal in February 2004.

Bangladesh: Trade, Investment and Development

Bhutan: Environment & Climate Change

India: Security

Sub-sectors: Counter-Terrorism and Transnational Crime, Disaster Management, Energy

Myanmar: Agriculture and Food Security

Sub-sectors: Agriculture, Fisheries & Livestock

Nepal: People-to-People Contact

Sub-sectors: Culture, Tourism, People-to-People Contact (forums of think tanks, media etc.)

Sri Lanka: Science, Technology & Innovation (Sri Lanka)

Sub-sectors: Technology, Health, Human Resource Development

Thailand: Connectivity

G20: Bhopal declaration

India's presidency of G20 is a unique opportunity to galvanise the change — sustainable development for all, with special focus on children.

Bhopal declaration of G20 under "Think 20" meet also calls for investments in early childhood and adolescence, can be a powerful driver of inclusive economic growth.

It calls for inclusive development where every human being is a part of technology and green-led economic growth and development in the spirit of: One Earth, One Family, One Future.

The key recommendations of the Bhopal Declaration include the need for development transformation to support transitions towards 'Global South and Global Governance for LiFE (Lifestyle for Environment), and responsible consumption.

Bhopal Declaration has also emphasized promoting traditional medicine systems like AYUSH and encouraging value-oriented development in infrastructure development.

1st Sherpa Meeting Udaipur, Rajasthan set the stage for important conversations on some of the most pressing issues of our time, including technological transformation, green development and LiFE, spotlighting women-led development, accelerating implementation of the SDGs, facilitating inclusive and resilient growth, and multilateral reforms.

One of the key emphasis of the Indian Presidency in 2023 is to voice the needs and perspectives of the Global South in the G20. Given the fact that till 2025, the Presidency of G20 will be with an emerging market economy (Brazil in 2024 and South Africa in 2025).

RESOURCES

Cooperation in a Fragmented World: Addressing Pressing Crises, Tackling Future Challenges

The first version of Pradhan Mantri Kaushal Vikas Yojana (PMKVY) scheme was launched in 2015 to encourage and promote skill development in the country by providing free short duration skill training and incentivizing this by providing monetary rewards to youth for skill certification. The overall idea was to boost employability of youth corresponding to the industrial demand.

TRADE

Black Sea Grain Initiative Joint Coordination Centre

An "unprecedented agreement" on the resumption of Ukrainian grain exports via the Black Sea amid the ongoing war is "a beacon of hope" in a world that desperately needs it.

The UN plan, which also paves the way for Russian food and fertilizer to reach global markets, will help to stabilize spiralling food prices worldwide and stave off famine, affecting millions.

The initiative specifically allows for significant volumes of commercial food exports from three key Ukrainian ports in the Black Sea – Odesa, Chornomorsk, Yuzhny.

Ukrainian vessels will guide the cargo ships into international waters of the Black Sea, avoiding mined areas. The vessels will then proceed towards the Bosporus Strait along an agreed corridor.

Bosporus Strait

Bosporus Strait is a natural strait and an internationally significant waterway located in Istanbul in northwestern Turkey. It forms part of the continental boundary between Asia and Europe, and divides Turkey by separating Anatolia from Thrace. It is the world's narrowest strait used for international navigation.

Most of the shores of the Bosporus Strait, except for the area to the north, are heavily settled, with the city of Istanbul's metropolitan population of 17 million inhabitants extending inland from both banks.

The Bosporus Strait and the Dardanelles Strait at the opposite end of the Sea of Marmara are together known as the Turkish Straits.

Sections of the shore of the Bosporus in Istanbul have been reinforced with concrete or rubble and those sections of the Strait prone to deposition are periodically dredged.

Historically, the Bosporus was also known as the "Strait of Constantinople".

As a maritime waterway, the Bosporus specifically connects the Black Sea to the Sea of Marmara and thence to the Aegean and Mediterranean seas via the Dardanelles. It also connects various seas along the Eastern Mediterranean, the Balkans, the Near East, and Western Eurasia. Thus, the Bosporus allows maritime connections from the Black Sea all the way to the Mediterranean Sea and the Atlantic Ocean via Gibraltar, and to the Indian Ocean through the Suez Canal, making it a crucial international waterway, in particular for the passage of goods coming from Russia.
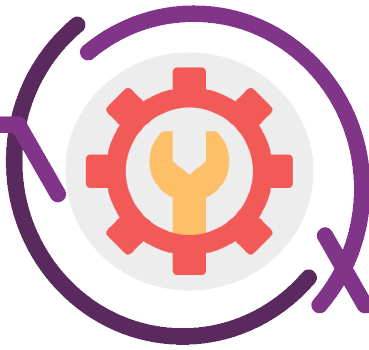
3. INDUSTRIAL ISSUES

INFRASTRUCTURE

Portal for mapping of Industrial Units and Laboratories launched.

This is a centralized platform for information on industrial units and laboratories across the country. This will enable analysis of test facilities in the country and help entrepreneurs in accessing information about testing facilities.

Bureau of Indian Standards (BIS)

Bureau of Indian Standards (BIS) completed 75 glorious years of its existence on 6th January 2022. BIS came into existence as Indian Standards Institution (ISI) in 1947. Through its core activities of Standardization and Certification, BIS has been contributing to national economy from past 75 years.

Standards National Action Plan (SNAP) 2022- 27:

It aims to serve as strong foundation for standardization to meet the emerging technologies and concerns of sustainability and climate change.
SNAP 2022 - 27 will play an important role in steering the national standardization efforts which would lead to standards becoming a key enabler of India's economic aspirations. The implementation of key recommendations and strategies of the document will be pivotal in enriching and strengthening "Quality Culture" in the Nation.

Revision Exercise of National Building Code of India (NBC 2016):

BIS, through its concerned technical committee, namely, National Building Code Sectional Committee, CED 46 is initiating the Exercise of Revision National Building Code of India to include sustainable city planning norms; new and sustainable building materials, design concepts, construction technologies and building and plumbing services and to deal with the various challenges being posed in the current scenario, without compromising on the safety of the occupants and assets in buildings and built environment.

Revised National Electrical Code of India 2023

The National Electrical Code of India 2023 (NEC 2023), a comprehensive electrical installations Code prepared by BIS, is a national instrument providing guidelines for regulating the Electrical Installations practices across the country.

India's first National Electrical Code was formulated in the year 1985, which was subsequently revised in the year 2011. The current revision includes the requirements of electrical installation as per the latest International best practices.

Some of the important new Chapters added in the revised NEC are requirements related to Electrical installations at special locations like Hospitals, Community facilities, Hotels, Swimming Pools, Amusement Parks, Supplies for Electric vehicles, multi-storied buildings etc.

MV Ganga Vilas

The world's longest river Cruise, MV Ganga Vilas, in Varanasi.

Operated by Antara Cruises, MV Ganga Vilas will traverse 3,200km through five states in India and parts of Bangladesh over 51 days. It will begin its journey from Varanasi in Uttar Pradesh and reach Dibrugarh in Assam via Bangladesh.

Besides connecting National Waterway 1 (NW1) which includes Ganga and National Waterway 2 (NW2) on Brahmaputra, the cruise will cross 27 river systems.

The 51 days cruise is planned with visits to 50 tourist spots including World Heritage Sites, National Parks, River Ghats, and major cities like Patna in Bihar, Sahibganj in Jharkhand, Kolkata in West Bengal, Dhaka in Bangladesh and Guwahati in Assam.

Vidisha becomes the first ever district in India for on ground deployment of innovative 5G use cases offered by startups

Vidisha, an aspirational district of Madhya Pradesh became the first ever district in India for on ground deployment of innovative 5G use cases offered by startups - a joint initiative by Vidisha District Administration and Centre for Development of Telematics (C-DOT), Department of Telecommunications (DoT).

To accelerate Digital Transformation across socio-economic verticals, the Department of Telecommunications (DoT), Under Telecom Startups & MSMEs Mission (TSuM) & 5G Vertical Engagement Partnership Program (VEPP) have been facilitating collaborations of Digital Communication Tech - startups & SMEs to potential user communities viz. State governments, Smart cities, Aspirational districts, vertical industries etc.

Centre for Development of Telematics (C-DOT), DoT being pioneer in emerging Digital communication Technologies, is front-ending the "5G use case promotional pilot" for deploying 5G/4G/IoT innovative solutions of Startups & SMEs at Vidisha (Aspirational district), Madhya Pradesh with a focus on Health, Agriculture, Diary, Education & Skill development, benefiting the Vidisha community at large.

MANUFACTURING & SERVICES

ZERO DEFECT ZERO EFFECT Scheme

Zero defect zero effect manufacturing (ZED) can lead MSMEs to assure customers, reduce wastages substantially, in crease productivity, expand their markets, apart from saving on energy, etc. The scheme will comprise of an extensive drive to create awareness in MSMEs about ZED and motivate them for ZED manufacturing and support them through navigating the various levels.

Objective of the scheme

The scheme envisages promotion of Zero Defect and Zero Effect (ZED) manufacturing amongst MSMEs and ZED Assessment for their certification so as to:

Encourage and Enable MSMEs for manufacturing of quality products using latest technology tools & to constantly upgrade their processes for achievement of high productivity and high quality with the least effect on the environment.

Develop an Ecosystem for Zero Defect Zero Effect Manufacturing in MSMEs, for enhancing competitiveness and enabling exports.

Promote adoption of Quality and recognizing the efforts of successful MSMEs.

Increase public awareness on demanding Zero Defect and Zero Effect Products through the ZED Rating and Grievance Redressal Portal.

ZED Portal:

The scheme is e-enabled. Applications of MSMEs will be received online and will be processed by NMIU/lAs. A unique user ID and password will be assigned/created for every Implementing Agency/IA. The other activities such as e-learning and data keeping, processing and maintenance will also be managed from the same platform. Online service support shall be provided through identified agency.

Accreditation / certification / standardization and verification

ZED Certification can be attained in five levels:

- **Level I:** Self Certification I BRONZE.
- **Level 2:** Conformity with Standards I SILVER.
- **Level 3:** Striving for Excellence I GOLD.
- **Level 4:** Achieving Excellence I DIAMOND.
- **Level 5:** ZED Certification I PLATINUM

A three tier structure is being implemented in the scheme;

National Monitoring and Implementing Units (NMIU) will be responsible for facilitating, implementing and monitoring of the scheme across the country.

Implementing Agencies (IAs) ⟷ **MSMEs**
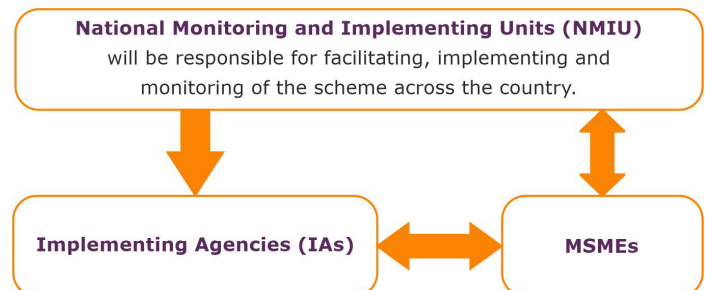
India's first Centre of Excellence of online gaming in Meghalaya

The Minister of State for Electronics & Information Technology (MeitY) and Skill Development & Entrepreneurship Rajeev Chandrasekhar announced that India's first Centre of Excellence (CoE) of online gaming will be set up in Shillong, Meghalaya by March 2023.
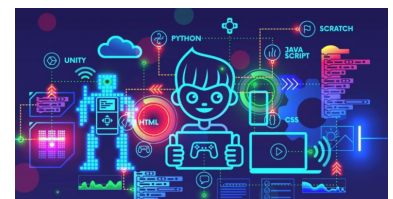
The CoE will be set up under Digital India Startup Hub through the Software Technology Parks of India (STPI). The STPI was set up in 1991 as an autonomous society in the field of Science and Technology under the MeitY.

Next Wave of Digital Technology Start-ups to come from North-East:

Digital Skills have become necessary to thrive in the post-Covid world. Understanding the significance of digital skills in today's era, the MeitY is re-launching Skill India through Pradhan Mantri Kaushal Vikas Yojana (PMKVY).

Some of the important new Chapters added in the revised NEC are requirements related to Electrical installations at special locations like Hospitals, Community facilities, Hotels, Swimming Pools, Amusement Parks, Supplies for Electric vehicles, multi-storied buildings etc.

India-US Startup SETU

Supporting Entrepreneurs in Transformation & Upskilling

The program aims to provide mentorship and customized assistance with deal flow of the best startups from across India to US-based Investors and startup ecosystem leaders.

The **Mentorship, Advisory, Assistance, Resilience, and Growth (MAARG)** program is a single stop solution finder for startups in India. The portal has been developed with the idea to be accessible from every corner of the country to connect with a mentor. A mentor will offer human intelligence in guiding the startups. The value of human intelligence is irreplaceable.

The portal is developed for startups in India that can be accessed from every corner of the country to request and connect with a mentor. The core features of the portal include:

- **Ease of Access:** The entire application process is enabled at a single go for theusers that can be accessed using a desktop or a mobile device.
- **Artificial Intelligence for Matchmaking:** Matchmaking of mentors and startups using Artificial Intelligence and sustaining the function with Machine Learning.

- **Scheduling:** The users can schedule meetings virtually by maintaining a calendar within the portal and raising connection requests.
- **Host Masterclasses:** The mentors can host masterclasses and classroom sections on the portal to address common issues raised by several startups.
- **User Custom Dashboard:** User-specific logins to see relevant information, analytics, features, etc. on a dedicated dashboard for startups and mentors. The dashboards will be used to disseminate all the functions and progress with the users.
- **Cohort-based programs:** Exclusive programs can be hosted on the portal that will allow startup ecosystem enablers to collaborate.
- **Outcome driven activities:** Monitoring matchmaking processes and mentor engagements to derive KPIs of the program.
- **Transparency:** The portal is enabled to accept of queries and grievances from all the users to ensure timely resolution of issues within the portal.

EMPLOYMENT

Pradhan Mantri Kaushal Vikas Yojana (2016 - 2020)

Pradhan Mantri Kaushal Vikas Yojana (2016 - 2020) is a modified and improved version of PMKVY 2015-2016. It is the flagship outcome-based Skill Training Scheme of the Ministry of Skill Development & Entrepreneurship (MSDE). This Skill Certification Scheme aims to enable and mobilize a large number of Indian youth to take up skill training and become employable and earn their livelihood.

Enable and mobilize a large number of youth to take up industry designed quality skill training, become employable and earn their livelihood.

Increase productivity of the existing workforce, and align skill training with the actual needs of the country.

Encourage standardization of the Certification process and put in place the foundation for creating a registry of skills.

Benefit 10 million youth over the period of four years (2016-2020).

The Scheme will be implemented through NSDC National Skill Development Corporation.

Pradhan Mantri Kaushal Vikas Yojana 3.0 (2020-21)

The first version of Pradhan Mantri Kaushal Vikas Yojana (PMKVY) scheme was launched in 2015 to encourage and promote skill development in the country by providing free short duration skill training and incentivizing this by providing monetary rewards to youth for skill certification. The overall idea was to boost employability of youth corresponding to the industrial demand.

After the successful implementation of PMKVY (2015-16) and learnings from the past, PMKVY 2.0 (2016-20) was launched by scaling up sectors, geographies and by greater alignment with other missions / programs of Government of India such as 'Make in India', 'Digital India' and 'Swachh Bharat Mission'. PMKVY 2.0 is being implemented since 15th July 2016 and was scheduled to be completed by 31st March 2020. The scheme has been extended for one year for skilling of migrant workers.

Based on the learnings of PMKVY 2.0 and to reorient the scheme to be in sync with the present scenario of policy changes and changing priority in different sectors, it is decided to speed up the implementation of PMKVY 3.0. The scheme shall be implemented in two phases: 1st phase shall be implemented on pilot basis during the year 2020- 21 known as PMKVY 3.0 (2020-21). The scheme shall initiate the creation of implementation framework for the second phase (2021-2026) of the scheme. This Guideline document is meant for the first phase of PMKVY 3.0 (2020-21).

The objectives of the scheme are to:

Create an ecosystem for the youth to make informed choices on the available skilling avenues.

Provide support to youth for skill training and certification.

Promote sustainable Skill Centres for greater participation of private sector.

Benefit 8 lakh youth over the scheme period (2020-21).

Target Beneficiaries

This scheme is applicable to any candidate of Indian nationality who

Is aged between 15-45 years.

Possesses an Aadhaar card and an Aadhaar linked bank account.

Fulfils other criteria for the respective job role as defined by the awarding body.

TECHNOLOGY

BharOS versus Android

BharOS- indigenous mobile operating system: The unveiling of **BharOS-** India's very own mobile operating system

Contrary to Google Android, which is owned by multinational company Google, BharOS is created by JandK Operations Private Limited (JandKops) incubated by IIT Madras Pravartak Technologies Foundation, a non-profit organization established by IIT Madras.

BharOS is a Linux-kernel-based operating system similar to Android, but with few differences. Unlike Android, it doesn't come preloaded with any apps, giving users the freedom to choose and download the apps they want.

BharOS can be installed on commercial off-the-shelf handsets. It is said to offer a secure environment for users with Native Over The Air' (NOTA) updates.

These updates are automatically downloaded and installed on the device, without the need for the user to manually initiate the process. This ensures that the device is always running the latest version of the operating system, which includes the latest security patches and bug fixes.

BharOS provides access to trusted apps from organisation-specific Private App Store Services (PASS PASS offers a carefully selected list of apps that have undergone thorough security and privacy evaluations to meet the standards of the organization.

The Centre for Development of Advanced Computing (CDAC), a government of India entity under the Ministry of Electronics and IT, introduced Bharat Operating System Solutions (BOSS) in 2007 as an alternative to Microsoft Windows.

Based on Linux, BOSS aimed to be a Made in India operating system. However, due to insufficient investment and government support, BOSS has become largely unknown and is reportedly facing a slow decline.

The software struggles with infrequent updates, limited coordination with hardware vendors, and inadequate customer support, leading to its fading popularity.

Fulfils other criteria for the respective job role as defined by the awarding body.

RESOURCES

Indo-Bangla Friendship Pipeline

Guwahati, Jan 8, The ambitious 130-km long Indo-Bangla Friendship Pipeline (IBFPL), constructed at a cost of Rs 377.08 crore, is likely to be commissioned by February 2023.

The international oil pipeline, IBFPL, will carry fuel from Assam-based Numaligarh Refinery Ltd's (NRL) marketing terminal at Siliguri in West Bengal to the Parbatipur depot of Bangladesh Petroleum Corporation (BPC).

ENERGY

ReNew Power Installs First 3x Platform Wind Turbine Generators in India

ReNew Power ("ReNew"), India's largest renewable energy company by operational capacity, today announced the installations of India's firstever 3x p latform Wind Turbine Generators (WTG) in Gadag, Karnataka.

The new WTGs will be a part of the country's first 'Round the Clock' renewable energy project, combining wind, solar and a Battery Energy Storage System (BESS). This project will produce enough energy to power over 1 million households in India annually.

The international oil pipeline, IBFPL, will carry fuel from Assam-based Numaligarh Refinery Ltd's (NRL) marketing terminal at Siliguri in West Bengal to the Parbatipur depot of Bangladesh Petroleum Corporation (BPC).

SPACE TECHNOLOGY

Aditya-L1
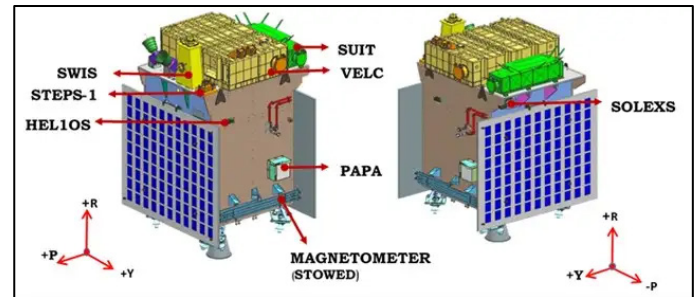
Aditya L1 shall be the first space based Indian mission to study the Sun.

The spacecraft shall be placed in a halo orbit around the Lagrange point 1 (L1) of the Sun-Earth system, which is about 1.5 million km from the Earth.

A satellite placed in the halo orbit around the L1 point has the major advantage of continuously viewing the Sun without any occultation/eclipses. This will provide a greater advantage of observing the solar activities and its effect on space weather in real time.

The spacecraft carries seven payloads to observe the photosphere, chromosphere and the outermost layers of the Sun (the corona) using electromagnetic and particle and magnetic field detectors.

Using the special vantage point L1, four payloads directly view the Sun and the remaining three payloads carry out in-situ studies of particles and fields at the Lagrange point L1, thus providing important scientific studies of the propagatory effect of solar dynamics in the interplanetary medium

The suits of Aditya L1 payloads are expected to provide most crucial informations to understand the problem of coronal heating, coronal mass ejection, pre-flare and flare activities and their characteristics, dynamics of space weather, propagation of particle and fields etc.
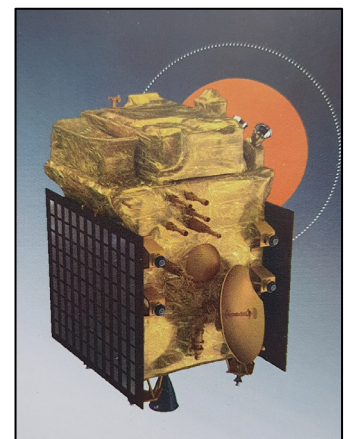
The major science objectives of Aditya-L1 mission are:

- Study of Solar upper atmospheric (chromosphere and corona) dynamics.
- Study of chromosphere and coronal heating, physics of the partially ionized plasma, initiation of the coronal mass ejections, and flares
- Observe the in-situ particle and plasma environment providing data for the study of particle dynamics from the Sun.
- Physics of solar corona and its heating mechanism.
- Diagnostics of the coronal and coronal loops plasma: Temperature, velocity, and density.
- Development, dynamics, and origin of CMEs.
- Identify the sequence of processes that occur at multiple layers (chromosphere, base, and extended corona) which eventually leads to solar eruptive events.
- Magnetic field topology and magnetic field measurements in the solar corona.
- Drivers for space weather (origin, composition, and dynamics of solar wind.

POLLUTION

Microplastic

Microplastics come from a variety of sources, including from larger plastic debris that degrades into smaller and smaller pieces. In addition, microbeads, a type of microplastic, are very tiny pieces of manufactured polyethylene plastic that are added as exfoliants to health and beauty products, such as some cleansers and toothpastes. These tiny particles easily pass through water filtration systems and end up in the ocean and Great Lakes, posing a potential threat to aquatic life.

Microbeads are tiny pieces of polyethylene plastic added to health and beauty products, such as some cleansers and toothpastes.

CLASSIFICATION OF MICROPLASTICS

(a) Primary microplastics: produced by the unintentional discharge of transitional plastic feedstock.
(b) Secondary microplastics: fragment which are produced by fragmentation of larger plastic trash.

SOURCES

(a) Domestic
- Cosmetic
- Washing of clothes
- Use in toothpaste
- Household wastes

(b) Industrial
- Construction
- Recycling

(c) Coastal
- Fishing activities including plastic, gears, nets
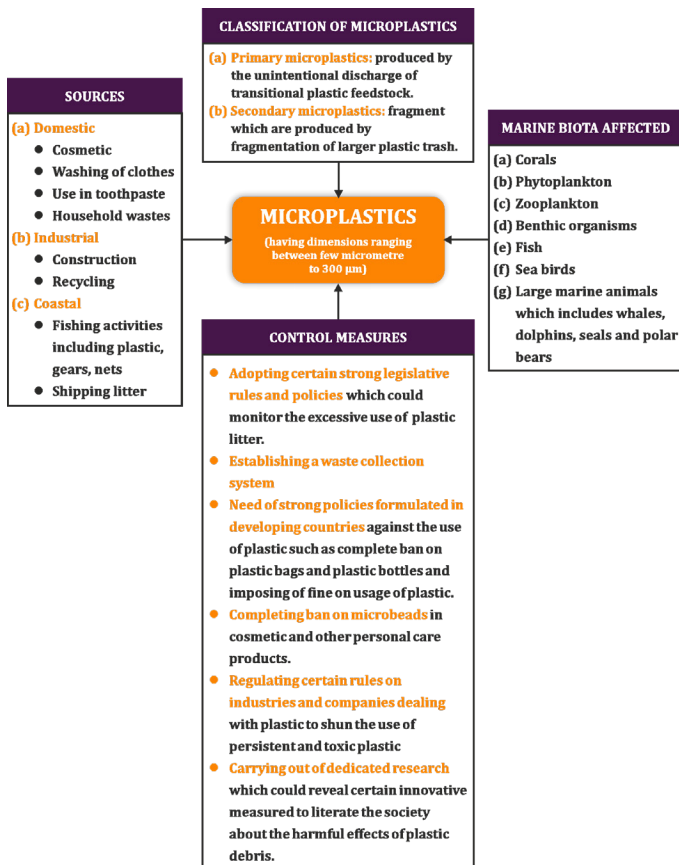- Shipping litter

MICROPLASTICS
(having dimensions ranging between few micrometre to 300 μm)

MARINE BIOTA AFFECTED

(a) Corals
(b) Phytoplankton
(c) Zooplankton
(d) Benthic organisms
(e) Fish
(f) Sea birds
(g) Large marine animals which includes whales, dolphins, seals and polar bears

CONTROL MEASURES

- **Adopting certain strong legislative rules and policies** which could monitor the excessive use of plastic litter.
- **Establishing a waste collection system**
- **Need of strong policies formulated in developing countries** against the use of plastic such as complete ban on plastic bags and plastic bottles and imposing of fine on usage of plastic.
- **Completing ban on microbeads** in cosmetic and other personal care products.
- **Regulating certain rules on industries and companies dealing** with plastic to shun the use of persistent and toxic plastic
- **Carrying out of dedicated research** which could reveal certain innovative measured to literate the society about the harmful effects of plastic debris.

Zebrafish: An emerging model to study microplastic and nano plastic toxicity

Microplastics (MPs) and nano plastics (NPs) have received global concern due to its widespread contamination, ingestion in aquatic organisms and the ability to cross the biological barrier.

However, our understanding of its bioaccumulation, toxicity, and interaction with other environmental pollutants is limited.

Zebrafish is increasingly used to study the bioaccumulation and toxicity of environmental contaminants because of their small size, ease of breed, short life cycle and inexpensive maintenance.

The transparent nature of zebrafish embryo and larvae provides excellent experimental advantages over other model organisms in studying the localization of fluorescent-labeled MPs/NPs particles.

Zebrafish outplays the traditional rodent models with the availability of transgenic lines, high-throughput sequencing and genetic similarities to humans. All these characteristics provide an unprecedented opportunity to investigate the toxicity of MPs/NPs and associated contaminants.

NPs **MPs**

Accumulation of MPs/NPs

Toxicity Endpoints

- Developmental Toxicity
- Reproductive Toxicity
- Neurotoxicity & Locomotor Toxicity
- Immunotoxicity
- Genotoxicity
- Intestinal Damage & Metabolome
- Oxidative Stress
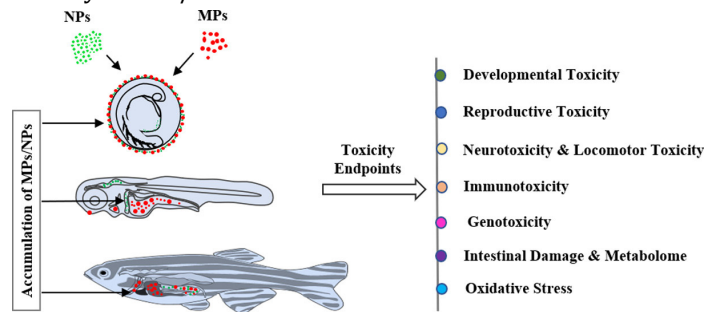
The Montreal Protocol

The Montreal Protocol on Substances that Deplete the Ozone Layer is the landmark multilateral environmental agreement that regulates the production and consumption of nearly 100 man-made chemicals referred to as ozone depleting substances (ODS).

Adopted on 16 September 1987, the Protocol is to date one of the rare treaties to achieve universal ratification.

The Montreal Protocol phases down the consumption and production of the different ODS in a stepwise manner, with different timetables for developed and developing countries (referred to as "Article 5 countries").

The Meeting of the Parties is the governance body for the treaty, with technical support provided by an Open-ended Working Group, both of which meet on an annual basis. The Parties are assisted by the Ozone Secretariat, which is based at UN Environment Program headquarters in Nairobi, Kenya.

The Multilateral Fund

The Multilateral Fund for the Implementation of the Montreal Protocol was established in 1991 under Article 10 of the treaty. The Fund's objective is to provide financial and technical assistance to developing country parties to the Montreal Protocol whose annual per capita consumption and production of ODS is less than 0.3 kg to comply with the control measures of the Protocol.

The Multilateral Fund's activities are implemented by four international agencies - UN Environment Program (UNEP), UN Development Program (UNDP), UN Industrial Development Organization (UNIDO) and the World Bank - as well as bilateral agencies of non-Article 5 countries.

Phase out of HCFCs – the Montreal Amendment

Hydrochlorofluorocarbons (HCFCs) are gases used worldwide in refrigeration, air-conditioning and foam applications, but they are being phased out under the Montreal Protocol since deplete the ozone layer. HCFCs are both ODS and powerful greenhouse gases: the most commonly used HCFC is nearly 2,000 times more potent than carbon dioxide in terms of its global warming potential (GWP).

Recognizing the potential benefits to the Earth's climate, in September 2007 the Parties decided to accelerate their schedule to phase out HCFCs. Developed countries have been reducing their consumption of HCFCs and will completely phase them out by 2020. Developing countries agreed to start their phase-out process in 2013 and are now following a stepwise reduction until the complete phase-out of HCFCs by 2030.

Phase down of HFCs – the Kigali Amendment

Another group of substances, hydrofluorocarbons (HFCs), were introduced as non-ozone depleting alternatives to support the timely phase-out of CFCs and HCFCs.

HFCs are now widespread in air conditioners, refrigerators, aerosols, foams, and other products. While these chemicals do not deplete the stratospheric ozone layer, some of them have high GWPs ranging from 12 to 14,000.

Overall HFC emissions are growing at a rate of 8% per year and annual emissions are projected to rise to 7-19% of global CO_2 emissions by 2050. Uncontrolled growth in HFC emissions, therefore, challenges efforts to keep global temperature rise at or below 2°C this century. Urgent action on HFCs is needed to protect the climate system.

The Parties to the Montreal Protocol reached an agreement at their 28th Meeting of the Parties on 15 October 2016 in Kigali, Rwanda to phase down HFCs. Countries agreed to add HFCs to the list of controlled substances and approved a timeline for their gradual reduction by 80-85 per cent by the late 2040s.

The first reductions by developed countries are expected in 2019. Developing countries will follow with a freeze of HFC consumption levels in 2024 and in 2028 for some nations.

The issue has been under negotiation by the Parties since 2009 and the successful agreement on the Kigali Amendment (Decision XXVIII/1 and accompanying Decision XXVIII/2) continues the historic legacy of the Montreal Protocol. The Kigali Amendment will enter into force on 1 January 2019 for those countries that have ratified the amendment.

The pathway to implement the HFC phase down is to reduce dependency on high-GWP alternatives and increase the adoption of low-GWP, energy-efficient technologies as part of the HCFC phase-out process under the Montreal Protocol. Such a "smart approach" can achieve the Montreal Protocol's objective of eliminating HCFCs while at the same time achieving energy efficiency gains and CO2 emissions reduction — a "climate co-benefit."

HFC PHASE-DOWN TIMELINE
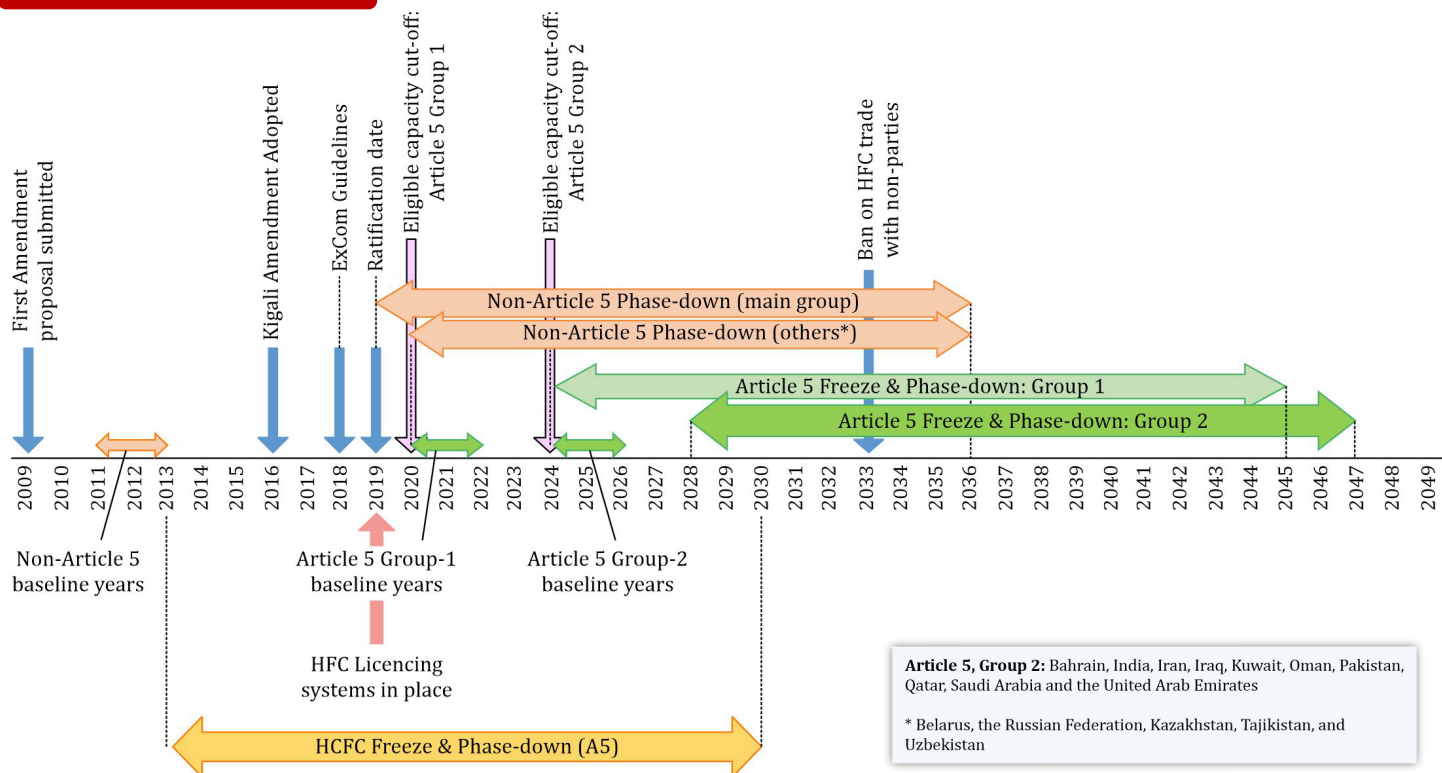
CONSERVATION

Bhitarkanika National Park

Nestled in the estuarial Brahmani-Baitarani region of the north-eastern Kendrapara district of Odisha, Bhitarkanika National Park is the second largest mangrove ecosystem in the country.

It is a 145 Sq km large national park which was designated on 16th September 1998 and obtained the status of a Ramsar site in August 2002 i.e, second Ramsar site of the State after the Chilika Lake. It is surrounded by Bhitarkanika Wildlife Sanctuary, which was declared a sanctuary on 21st April 1975 is spread over 672 Sq km. The national park and wildlife sanctuary is inundated by the rivers Brahmani, Baitarani, Dhamra, Pathsala.

Flora: Mangrove species, casuarinas, and grasses like the indigo bush.

Fauna: The Park is home to the saltwater crocodile, Indian python, black ibis, wild boar, rhesus monkey, chital, darter, cobra, monitor lizard. Olive Ridley turtles' nest on Gahirmatha and other nearby beaches. Bhitarkanika has one of the largest populations of endangered saltwater crocodile in India and is globally unique in that, 10 per cent of the adults exceed 6 m length.

Avian-Fauna: Birds such as Asian Open Bill, Cormorants, Darters, Black Ibis, Egrets, are frequently seen in the park. It is the home to winter migratory birds from Europe and Central-Asia as the park provides a congenial atmosphere and serene, pollution free environment.

Birds migrate thousands of miles to Bhitarkanika to escape the harsh winter in Ladakh, Mansarovar, himalayan region, Siberia, Kazaksthan, Mongolia, Russia, Afghanistan, Iraq, northern Asia and some central European countries. Almost eight different varieties of Kingfishers can also be spotted here.

Turtle Sanctuary: Located within the close vicinity of the Bhitarkanika National Park is Odisha's only Turtle Sanctuary. A part of the Gahirmatha Beach, the Turtle Sanctuary is the place where one can spot Olive Ridley Turtles. These turtles travel all the way from South Pacific Ocean to breed on the coast of Gahirmatha. Famous for its nesting beach for Olive Ridley Turtles, it is the one of world's most important nesting beach for turtles.

Buxwaha Forest

Buxwaha forest in Madhya Pradesh, a diamond mine. The proposed Bunder diamond block in the Chhatarpur district of Madhya Pradesh is a diamond mine project, which is now with Aditya Birla Group's Essel Mining & Industries Limited, is facing protests over ecological concerns.

It noted that the project, once operational, has the potential to become one of the largest diamond mines in the Asian region.

The Bunder mining project falls under the Bundelkhand region of India, which is a water-stressed area. Environmentalists believe that the huge water requirement for diamond mining would add to the water woes of the region.

The Buxwaha region of Chhatarpur district is already declared semi-critical by the Central Ground Water Authority.

Purse seines

Purse seines are used in the open ocean to target dense schools of single-species pelagic (midwater) fish like tuna and mackerel.
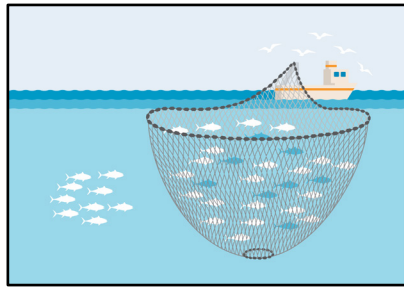
Purse seine fishing, deployed widely on India's western coasts, uses a large vertical net to surround dense shoals of pelagic or midwater fish in the open ocean, and then draws in the edges like tightening the cords of a drawstring purse. In some States, it is linked to concerns about the decreasing stock of small, pelagic shoaling fish such as sardines, mackerel, anchovies and trevally on the western coasts.

The scientific community argues that climatic conditions, including the El Nino phenomenon, are responsible for the declining catch of such fish in the last ten years. However, fishermen using traditional methods have placed the blame squarely on the rise of purse seine fishing, and fear a further fall in the availability of these small fish if the ban is lifted.

A major concern is the dwindling availability of oil sardines, a favourite of Kerala fish eaters. In 2021, Kerala recorded a catch of just 3,297 tonnes of sardine, a sharp decrease from the haul of 3.9 lakh tonnes in 2012. While traditional fish workers blame purse seines as a reason for the decrease in sardines in Indian waters, those using big boats with purse seine fishing nets claim that it is simply a more scientific way to catch fish, particularly from the first layer of the sea.

SC allows purse seine fishing beyond territorial waters of TN

The apex court gave conditional permission for the use of purse seine nets for fishing beyond the territorial waters of Tamil Nadu but within the Exclusive Economic Zone.

The United Nations Convention on the Law of the Sea (UNCLOS) defines an Exclusive Economic Zone (EEZ) as generally extending 200 nautical miles from shore, within which the coastal state has the right to explore and exploit, and the responsibility to conserve and manage, both living and non-living resources. Some proposals would calibrate certain disciplines depending on whether the subsidized fishing activity takes place within or beyond a member's EEZ.

The fisheries department of Tamil Nadu, in March 2000, had banned the use of purse seine nets within its territorial waters — 12 nautical miles (22 km from the coastline).

CLIMATE CHANGE

Sovereign Green Bonds

The Reserve Bank of India (RBI) will auction maiden sovereign green bonds (SGrBs) worth **Rs 8,000 crore** on Wednesday. This is part of the Rs 16,000 crore Sovereign Green Bond auction that the RBI will conduct in the current financial year.

Green bonds are bonds issued by any sovereign entity, inter-governmental groups or alliances and corporates with the aim that the proceeds of the bonds are utilized for projects classified as environmentally sustainable.

Green Bonds have emerged as an important financial instrument to deal with the threats of climate change and related challenges. According to the International Finance Corporation (IFC), a World Bank Group's institution, climate change threatens communities and economies, and it poses risks for agriculture, food, and water supplies.
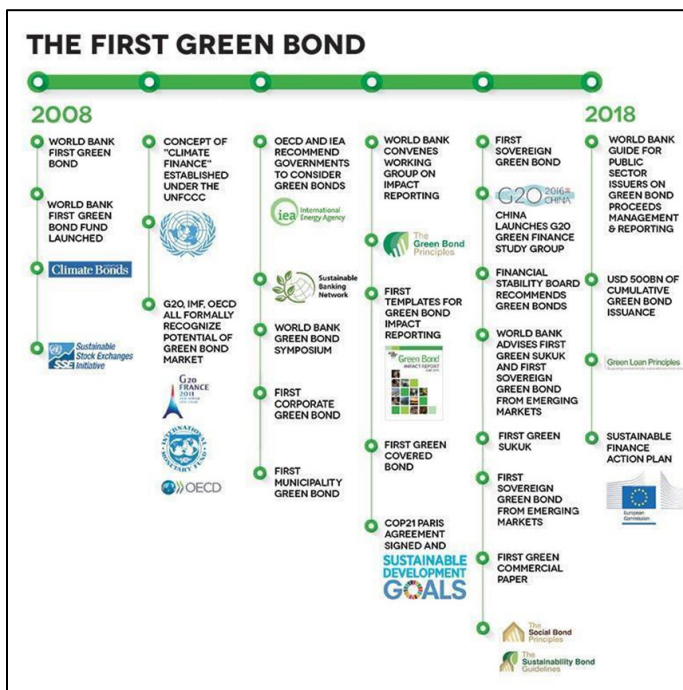
A green bond is a fixed-income instrument designed specifically to support specific climate-related or environmental projects.

- Green bonds finance projects aimed at energy efficiency, pollution prevention and sustainable development.
- Green bonds come with tax incentives such as tax exemption and tax credits, making them a more attractive investment compared to a comparable taxable bond.

- To qualify for green bond status, a bond is often verified by a third party such as the Climate Bond Standard Board.
- India is currently ranked 2nd (after China) among the emerging market economies in Sovereign Green Bonds issuance.

Pineapple Express

The Pineapple Express is a narrow region of atmospheric moisture **that builds up in the** tropical Pacific.

Atmospheric rivers are narrow regions in the atmosphere that transport much of the moisture from the tropics to northern latitudes. Atmospheric rivers are part of the Earth's ocean water cycle and are tied closely to both water supply and flood risks.

A well-known example of a strong atmospheric river is called the "Pineapple Express" because moisture builds up in the tropical Pacific around Hawaii and can wallop the U.S. and Canada's West Coasts with heavy rainfall and snow.

Prevailing winds cross over warm bands of tropical water vapor to form this "river," which travels across the Pacific as part of the global conveyor belt. When it reaches the west coast, the Pineapple Express can dump as much as five inches of rain on California in one day.

TEST YOUR KNOWLEDGE

1. Which of the following statements are correct for Ayushman Bharat Digital Mission.
1. It aims to digitalize public health
2. If focusses on escalated participation of private sector professionals in public health.
3. ABHA number (Ayushman Bharat Health Account) is a 16-digit number which is generated through Aadhar or Mobile number.
A. 1, 2   B. 2, 3
C. 1, 3   D. All
Ans. D

2. Jaga Mission, the largest land titling and slum upgradation scheme in India. Which of the following statements are correct.
1. It was founded in 2017.
2. It is related to Odisha
3. It focus on both urban and rural poor.
A. 1, 2   B. 2, 3
C. 1, 3   D. All
Ans. A
Sol. It focuses on urban poor.

3. "Survival of the richest", a book on socio-economic inequality, which of the following statements are correct.
1. It is authored by Douglas Rushkoff.
2. It was published on the opening day of World Bank, 2023.
3. It mentions that 1 percent in India now owns more than 40.5 percent of total wealth in 2021 while the bottom 90% has around 3 percent of total wealth.
A. 1, 2   B. 1, 3
C. 2, 3   D. All
Ans. B
Sol. It was published on opening day of World Economic Forum, 2023.

4. The policy framework Data Empowerment and Protection Architecture (DEPA) consists of

1. Identity and Privacy
2. Payment layer and Transaction
3. Data layer and commerce
4. Account Aggregators.
A. 1, 2 and 3   B. 2, 3 and 4
C. 1, 3 and 4   D. All
Ans. D

5. "BADAL" refers to
A. Cloud computing
B. Warship
C. Missile
D. Distributed ledger for Trustful commerce.
Ans. D
Sol. BADAL is a new digital money ledger (such as central bank digital currency on stable coins) with the new goods and services ledger, if is first such framework globally.

6. Kodo, Kutki, Chenna and Sanwa are
A. Indigenous tribes of North-East India.
B. Indigenous variety of small millets.
C. A folk dance form
D. None of the above
Ans. B

7. Which of the following statements are true about millets?
1. It is resistant to drought and heat.
2. It is high in protein, Vitamin-B, Vitamin-C, Iron, Calcium and Phytochemicals.
3. It is Gluten free and rich in Anti-oxidant.
A. 1, 2   B. 2, 3
C. 1, 3   D. All
Ans. C
Sol. Millets are not rich in Vitamin-C.

8. Choose the correct statements regarding Xenotransplantation.
1. It is related to any procedure involving transplantation, implantation or infusion from non-human animal body to humans.

2. It is not possible to transfer animal blood in humans.

A. 1 only

B. 2 only

C. Both

D. None

Ans.   A

Sol.   Blood transfusion is possible. Domestic pig blood closely resembles human blood.

9.   Which of the following statements are correct regarding Globalization 4.0?

1. World bank has converted a meeting on globalization 4.0

2. Theme was "shaping a new global architecture in the age of fourth industrial revolution".

3. Fourth industrial revolution an extension of third revolution, is a fusion of design innovations, new systems at a scale not seen before.

4. Third phase of globalization marbed the establishment of World Trade Organizations.

A. 1, 2, 3

B. 2, 3, 4

C. 1, 3, 4

D. All

Ans.   B

Sol.   Globalization 4.0 meeting was converted by World Economic Forum not World Bank.

10.   As per the recent RBI announcement which of the following banks are classified as Domestic Systemically Important Banks. (D-SIB).

1. State Bank of India.

2. ICICI Bank

3. HDFC Bank

A. 1, 2

B. 2, 3

C. 1, 3

D. All

Ans.   D

Sol.   D-SIBs are financial institutions which are large enough and hence these cannot be allowed to fail.

11.   Choose the correct statements.

1. A Vostro account is an account that a domestic bank holds for a foreign bank in the domestic bank's currency.

2. Nostro account is the same as Vostro account with the difference perspective.

3. A Loro account is a current account that is maintained by one domestic bank for another domestic bank in the form of third party.

A. 1, 2

B. 2, 3

C. 1, 3

D. All

Ans.   D

12.   "Showrooming" refers to

A. A modern fish catching technique

B. A mobile application

C. A new government initiative

D. None

Ans.   D

Sol.   It refers to checking the product in a retail store before buying if from online retailers.

13.   Consider the following statements about "Zero Defect and Zero Effect Scheme".

1. It focuses on medium, small and micro enterprises (MSMEs).

2. It is e-enabled and facilitate online services.

3. ZED certification can be attained in five levels.

A. 1, 2

B. 2, 3

C. 1, 3

D. All

Ans.   D

14.   India's first centre of Excellence of online gaming will be setup in

A. Delhi

B. Banglore

C. Chennai

D. Meghalaya

Ans.   D

15.   Mentorship, Advisory, Assitance, Resilience and Growth (MAARG) aims to provide mentorship and customized assistance with deal flow of the best startups from across India to US-based investors and startup ecosystem leaders. Which of the following statements are correct about MAARG.

1. It's under India-US startup SETU.

2. It provides human intelligence in startups.

3. It is a part of startup India.

A. 1, 2

B. 2, 3

C. 1, 3

D. All

Ans.   D

16. The objectives of Pradhan Mantri Kaushal Vikas Yojna 3.0 (2020-21) are

1. to create an ecosystem for youth to make informed choices on the available skilling avenues.

2. It promotes sustainable skill centre for greater participation of private sector.

3. It aims any Indian National in the age group 16-64 years.

A. 1, 2   B. 2, 3

C. 1, 3   D. All

Ans. A

Sol. Age group is 19-45 years.

17. Which of the following statements are correct about "Microplastic"?

1. Microbeds, a type of microplastic, are very tiny pieces of manufactured polyethlene plastic that are added as exfoliants to health and beauty products, such as cleansers and toothpastes.

2. These tiny particles easily pass through water filtration systems and end up in the ocean and great lakes, poinga potential threat to aquatic life.

3. Primary microplastic is produced by fragmentation of larger plastic trash.

4. Secondary microplastic produced by unintentional discharge of transitional plastic feed stock.

A. 1, 2   B. 2, 4

C. 3, 4   D. All

Ans. A

18. Zebrafish, choose the correct statements.

1. An emerging model to study microplastic and nano plastic toxicity.

2. It has the same genome sequencing as that of zebra.

3. Its transparent nature of zebrafish embryo and larvae provide excellent experimental advantages.

A. 1, 2   B. 2, 3

C. 1, 3   D. All

Ans. C

19. Which of the following statements are correct about Montreal Protocol.

1. It is based on substances that deplete ozone layer.

2. It was adopted in 1987.

3. Article-9 countries refers to developed nations.

4. Hydrochlorofluorocarbons are the potential gases which deplete ozone layer.

A. 1, 2 and 3   B. 2, 3 and 4

C. 1, 2 and 4   D. All

Ans. C

20. Bitarkanika National Park, which of the following statements are correct.

1. It is situated in north easter Kendrapara district of Odisha.

2. It is the largest mangrove eco system in the country.

3. It is famous for large scale nesting of live Ridley turtles.

A. 1, 2   B. 2, 3

C. 1, 3   D. All

Ans. C

Sol. Sunder ban in West Bengal is the largest mangrove. Bhitarkanika is second largest in India.

21. "Purse Seines" is

A. An android application to search live location

B. A variety of millet indigenous to India

C. A vertical fishing technique

D. None

Ans. C

22. BharOS an indigenous operating system. Find the correct statements about it.

1. BharOS is created by JandK incubated by IIT Madras Pravartak Technologies Foundation, a non-profit organization established by IIT Madras.

2. It comes with pre-loaded application.

3. It offers a secure environment for users with Native Over The Air (NOTA) updates.

A. 1, 2   B. 1, 3

C. 2, 3   D. All

Ans. B

23. Bhopal Declaration refers to
A. Bhopal Gas Tragedy.
B. G-20 Think-20 declaration about investment in inclusive economic growth.
C. United Nations Economic Programme meet in Bhopal.
D. None

Ans. B

24. Which of the following statements are true about MV Ganga Vilas.
1. Its world's longest river cruise in Varanasi
2. It covers a distance of 3200 km through five states in India and parts of Bangladesh in 91 days.
3. It connects National Waterway 1 and National Waterway 2.

A. 1, 2   B. 2, 3
C. 1, 3   D. All

Ans. D

25. Buxwaha forest, which of the following statements are correct.
1. A diamond mine in Madhya Pradesh.
2. It has environment issues of deforestation and worsening water crisis.
3. It is under the Bunder mining project falls under Bundelkhand.

A. 1, 2   B. 1, 3
C. 2, 3   D. All

Ans. D

❑ ❑ ❑ ❑