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JULY 2022



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GENERAL STUDIES-II

01 I2U2 SUMMIT

Context

- The first-ever I2U2 Virtual Summit was held comprising **India, Israel, the UAE, and the US**.

Objective

- The objectives of the project include **reducing trade barriers between the economies** of the four countries and harmonising the food safety and quality standards, adding that the initial list identified for the project **includes banana, potato, rice, spices and onions**.
- The leaders of India-Israel-United States-UAE or I2U2 have decided to ramp up partnership in the areas of **food security and clean energy, water, transportation, health and space**.

Food parks across India

- UAE has decided to invest **\$2 billion for food parks across India** incorporating state-of-the-art climate-smart technologies to reduce food waste, conserve fresh water and employ renewable energy sources.
- The group decided to advance a hybrid renewable energy project in Gujarat consisting of 300 megawatts of wind and solar capacity complemented by a battery energy storage system.



Roadmap for food park establishment

- India will provide “appropriate land” for “**food parks**” across the country that will be built in collaboration with **Israel, the United States and the United Arab Emirates**.
- The plan for the “integrated food parks” was announced in a joint statement after the leaders of the I2U2 grouping – India, Israel, the UAE and the U.S.
- The food parks aimed at **cutting down “food waste and spoilage”** are a few of the collaborations that the four countries declared.

About I2U2 group

- I2U2 stands for **India, Israel, the UAE, and the US**, and was also referred to as the ‘**West Asian Quad**’.
- The group was first conceptualised in October 2021, during a meeting of the foreign ministers of the four countries in Israel.
- The group’s aim is to discuss “common areas of mutual interest, to strengthen the economic partnership in trade and investment in our respective regions and beyond”.
- Six areas of cooperation have been identified by the countries mutually, and the aim is to encourage joint investments in **water, energy, transportation, space, health, and food security**.

02

INDIAN PHARMACOPOEIA COMMISSION CONFERENCE 2022

Context

- The Union Minister for Health and Family Welfare chaired IPC Conference 2022 and released the 9th edition of Indian Pharmacopoeia.

About the conference

- The theme of this year's conference was '**Addressing Medicine Quality for Future**'.
- The Union Minister for Health and Family Welfare speaking on the occasion emphasised the need to maintain a standard quality of medical products.
- He said that it is important to develop a **Swasthya and Samrudh Bharat**, to maintain standard quality of our medical products- **vaccines, medicines, equipment etc.**

India's vaccine capacity

- India is the world's largest supplier of generic medication and accounts for **20 percent of the worldwide supply of generics by volume.**
- During the Covid pandemic, India delivered accessible and affordable vaccines to 150 countries.

About Indian Pharmacopoeia

- The Indian Pharmacopoeia (IP) is published by the Indian Pharmacopoeia Commission (IPC) on behalf of the Ministry of Health & Family Welfare, Government of India to fulfil the requirements of the **Drugs and Cosmetics Act 1940.**
- IP prescribes the official standards for drugs produced and/or marketed in India and thus contributes in the control and assurance of the quality of the medicines.
- The standards of the IP are **authoritative and legally enforceable.**
- It intends to help in the licensing of manufacturing, inspection and distribution of medicines in our country.

03

APEX COMMITTEE FOR PERFORMANCE AND EFFICIENCY AUDIT

Context

- Recently, the Ministry of Defence has set up an institutional mechanism consisting of an Apex committee with Defence Secretary as Chairman to conduct a Performance and Efficiency Audit into various aspects of its activities.

More about committee

- This kind of audit is expected to provide valuable inputs to the top management of the Ministry of specific shortcomings, if any, in **planning and execution of projects, and suggest systemic improvements in internal controls, soundness of financial procedures, identification of risk factors, etc.**
- It is a major shift from the existing transaction-based compliance audit to carry out an outcome-based Performance/ Efficiency Audit aimed at enhancing overall efficiency.

Members of Committee

- The members of the committee include Vice Chiefs of the three Services, Secretary Defence (Finance), Chief of Integrated Staff Committee (CISC), Controller General of Defence Accounts (CGDA), Director General (Acquisition) and other senior officials of Ministry of Defence and Defence Research and Development Organisation (DRDO).

Focus area

- The broad areas that have been identified for the conduct of **Performance and Efficiency Audit** include **Defence Capital Procurements, provisioning, logistics, and inventory levels, Maintenance of platforms / assets, role and performance of Authority Holding Sealed Particulars (AHSP)** etc.
- The Apex committee can also recommend any other specific area for Performance and Efficiency Audit.

04 STATES' STARTUP RANKING 2021

Context

- Recently, the Ministry of Commerce and Industry has released the 3rd edition of Ranking of States on Support to Startup Ecosystems.

More about ranking

- The Department for Promotion of Industry and Internal Trade (DPIIT) under the Ministry of Commerce and Industry has been conducting the States' Start-up Ranking Exercise since 2018.
- The main objective is to facilitate the ease of building a start-up and doing business across the country.
- The States and UTs were evaluated across 7 broad Reform Areas consisting of 26 Action Points including;
 - Institutional Support
 - Fostering Innovation and Entrepreneurship
 - Access to Market
 - Incubation support
 - Funding Support
 - Mentorship Support to Capacity Building of Enablers

Categories

- For the purposes of the Ranking, States and Union Territories are classified into 5 Categories:
 - Best Performers
 - Top Performers
 - Leaders
 - Aspiring Leaders
 - Emerging Start-up Ecosystems



State Performance

- Gujarat and Karnataka appeared as the Best Performers in the States category.
- Meghalaya tops among UTs and North-eastern States category.
- Kerala, Maharashtra, Orissa and Telangana won the Top Performers award among states category.
- Jammu and Kashmir appeared as the Top Performer among UTs and NE states category.
- Assam, Punjab, Tamil Nadu, Uttarakhand and Uttar Pradesh have emerged as the winners in the Leaders states category.
- Chhattisgarh, Delhi, Madhya Pradesh and Rajasthan were declared Aspiring Leaders among the States.
- Andhra Pradesh and Bihar from the States category and Mizoram and Ladakh from the UTs/NE States have topped under the Emerging Start-up Ecosystem.

05

BRICS LABOUR AND EMPLOYMENT MINISTERS' MEETING 2022

Context

- Recently, the Union Minister for Labour & Employment attended the BRICS Labour and Employment Ministers' Meeting held under the Chinese Presidency.
- The Ministers of the member countries viz. Brazil, Russia, India, China and South Africa participated in the meeting.

Priority issues of the meeting

- **Discussions held on Promoting Green Jobs for Sustainable Development**
- **Developing Skills for Resilient Recovery**
- **Protecting Workers' Right in New Forms of Employment**
- The Declaration recognized the need for promoting green jobs for sustainable development, strengthening of cooperation in skills development and; protection of workers' rights in new forms of employment.

Measures by India

- During the session on discussion among BRICS Ministers, the Union Minister for Labour & Employment elucidated the steps taken by India to provide relief to workers during the pandemic.
- The minister said that various initiatives was taken by government of India:
 - **Providing free ration**
 - **Enhancing the number of days of assured employment under MNREGA**
 - **Collateral free loans provided to 2.9 million street vendors to help them resume their businesses under PMSVANidhi Yojana during the pandemic.**

Sector Council for Green

- The Union Minister for Labour & Employment has noted that climate change is necessitating a shift towards more sustainable development and green jobs.
- In this context the government has launched a **Sector Council for Green Jobs** that has been set up in India to develop strategy and implement programs for Skill development in the green sector.
- The variety of Decentralised Renewable Energy livelihood opportunities which are being developed in India, including myriad solutions like solar dryer, biomass powered cold storage/chiller, were also enunciated.
- In addition, the Minister also stressed upon the measures taken to harness the potential of the Blue Economy and Agro-Forestry in India.

Skill development initiatives

- The government of India has taken various skill development initiatives such as e-Shram Portal, conducting **All India Surveys of Migrant Workers and Domestic Workers** taken by the Government of India towards welfare of informal sector workers were also highlighted.
- The Minister also informed about the legislative initiatives taken by India such as the Code on Social Security, 2020, which defines the new forms of workers i.e., gig and platform workers and the steps taken to provide social security benefits to such workers were also emphasised.

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06 MANTHAN TRIBAL WELFARE SYMPOSIUM

Context

- Union Tribal Affairs Minister inaugurated a two-day symposium 'Manthan' on upliftment of tribal communities at Palghar in Maharashtra.

About Manthan Symposium

- The Symposium is focussing on the various programmes to be undertaken on Azadi Ka Amrit Mahotsav by Eklavya Model Residential Schools, Fees Control Authority, Grants Department and Tribal Museums which organise 'Janjatiya Gaurav Diwas' on birth anniversary of freedom fighter Bhagwan Birsa Munda.
- It also includes discussions on Scheduled Tribe Component.

07 MISSION VATSALYA SCHEME

Context

- Recently, the Ministry of Women and Child Development has sent its draft guidelines for Mission Vatsalya Scheme to States and Union Territories to seek their suggestions.

About Mission Vatsalya

- Mission Vatsalya is one of the new triad of schemes along with Mission Shakti, and Poshan 2.0, that aims at securing a healthy and happy childhood for every child.
- It focuses on **Child Protection Services and child welfare services**.
- It is essentially a renamed version of the pre-existing scheme called Child Protection Services.

Objective

- To secure a healthy and happy childhood for each and every child in India
- Ensure opportunities to enable them to discover their full potential
- Assist them in flourishing in all respects in a sustained manner
- Foster a sensitive, supportive and synchronised ecosystem for the development of children,
- Assist States/UTs in delivering the mandate of the **Juvenile Justice Act 2015** and achieve the **SDG goals**.



Components of Mission Vatsalya

- Components under Mission Vatsalya include:
 - Improvement in the functioning of statutory bodies
 - Strengthening service delivery structures
 - Upscale institutional care/services
 - Encouraging non-institutional community-based care
 - Emergency outreach services
 - Training and capacity building

08

SVANIDHI MAHOTSAV**Context**

- The Union Minister for Housing and Urban Affairs has recently inaugurated SVANidhi Mahotsav.

About SVANidhi Mahotsav

- SVANidhi Mahotsav is a festival for celebrating and recognizing beneficiary street vendor's growth story and their contribution towards the Indian economy.
- The festival aims to celebrate 75 years of India's independence with these nano-entrepreneurs, honouring their journey under PM SVANidhi scheme for demonstrating credit discipline, digital behaviour and displaying their astute business acumen.

Street Vendor and Economic growth

- The Street Vendors have been an essential part of India's economic growth story with linkages with the formal economy and play a significant role in reducing cost of living, by providing goods and services at affordable rates.
- The Ministry of Housing and Urban Affairs has organised '**SVANidhi Mahotsav**' - a cultural festival for celebrating the success of PM SVANidhi Scheme with the beneficiary street vendors & their families, from 09 July to 31 July, 2022 in 75 cities across 33 States/UTs of the country.

PM SVANidhi scheme

- PM SVANidhi scheme was launched in June, 2020 to facilitate working capital loans to the street vendors to help them restart their businesses which were adversely impacted due to the lockdowns imposed during COVID-19 pandemic.
- The scheme is the first comprehensive effort for financial inclusion of the street vendors.
- Prior to this Scheme, street vendors were dependent on the informal credit channels paying high rates of interest.

GENERAL STUDIES - III

01

SWACHH SAGAR, SURAKSHIT SAGAR CAMPAIGN**Context**

- Recently, the Ministry of Earth Sciences has launched a Coastal Clean Up Drive under Swachh Sagar Surakshit Sagar Campaign to clean 75 beaches across the country in 75 days.

Background

- The marine activities were first mentioned in the Rigveda and references to the interrelationships of the ocean, sea and rivers can be found in the Indian Puranas.
- The diverse evidence from **Indian socio-spiritual traditions, literature, poetry, sculpture, painting and from archaeology attest to the great marine traditions of India.**
- India has a rich marine history.
- India's coastline of more than 7,500 km reflects our vast ocean resources.
- Most importantly, the Indian Ocean is the only ocean named after a country, that is, India.

Aim of the campaign

- The Swachh Sagar, Surakshit Sagar campaign will be the first-of-its-kind and longest running coastal clean-up campaign in the world with the highest number of people participating in it.
- Through this campaign, a mass behavioural change among the masses is intended by raising awareness about how plastic usage is destroying our marine life.

- The participation of common man will convey the message of “Swachh Sagar, Surakshit Sagar” for the prosperity of not only coastal areas but also other parts of the country.
- The coastal clean-up drive will be carried out at 75 beaches across the country.
- A mobile app “Eco Mitram” has been launched to spread awareness about the campaign and also for the common people for voluntary registration for the beach cleaning activity.

Objectives of campaign

- Minimising the use of plastics
- Encouraging segregation of waste at source and waste management
- To reduce marine litter
- Running a cleanliness campaign along India’s entire coastline

Participation organisation in Campaign

This campaign will include:

- Ministry of Earth Sciences (MoES)
- Ministry of Environment Forest and Climate Change (MoEFCC)
- Indian Coast Guard
- National Disaster Management Authority (NDMA)
- Social organizations and educational institutions



02

3RD EDITION OF THE INDIA INNOVATION INDEX

Context

- Recently, NITI Aayog’s has recently released the 3rd edition of India Innovation Index.
- Karnataka, Manipur and Union Territory of Chandigarh topped their respective categories.

Details about the index

As per the index:

- **Karnataka** topped the list in the major states category
- **Manipur** took the numerous uno position in the north east and hill states category
- **Chandigarh** scored over others in the union territory category
- **Karnataka** was followed by **Telangana, Haryana, Maharashtra** and **Tamil Nadu**. **Chhattisgarh, Odisha, Bihar** and **Gujarat** were at the bottom of the index.

Pillar of Index

- The index is based on seven pillars: **human capital, investment, knowledge workers, business environment, safety and legal environment, knowledge output, and knowledge diffusion.**
- These pillars were divided across **66 indicators this time from 36 earlier** to determine the innovation capacity of states/UTs.

Innovation index

The table lists the score and ranking of 17 major States in the third edition of NITI Aayog's India Innovation Index. Karnataka ranked first followed by Telangana and Haryana while Chhattisgarh, Odisha and Bihar were ranked at the bottom of the index



State	Score	Rank	State	Score	Rank
Karnataka	18.01	1	M.P.	12.74	13
Telangana	17.66	2	Gujarat	12.41	14
Haryana	16.35	3	Bihar	11.58	15
Maharashtra	16.06	4	Odisha	11.42	16
Tamil Nadu	15.69	5	Chhattisgarh	10.97	17

Recommendation

- The report has recommended a vast scale up in **R&D spending from current about 0.7% of GDP to over 2% of GDP** which would play an instrumental role in India achieving the goal of a \$5 trillion economy and further influence its innovative footprint across the globe.
- It has also recommended an increased role of the private sector in R&D resulting in innovation.
- The report has also recommended bringing growth to human capital to also boost knowledge capital as the vast divide now was coming in the way of large-scale innovation.
- Among other recommendations, the report said there was also a need to fill the gap between industry demand and what we produce through our education systems.
- Universities have the potential to become the go-to-place for industries, for any sort of innovation.
- The report has also suggested that the country India needs to undertake efforts in creative goods and services, which have been ignored for a long time while also pushing more start-ups to file patents across India.
- It suggested promoting the spirit of competitive federalism, which forces states/UTs to perform well, and ensures encompassing growth.

Evolutions of India innovations index

- The Global Innovation Index (GII) was first launched in 2007 to broaden the view on innovation—i.e., moving from just analysis based on research and development expenditure.
- To celebrate innovation in the backdrop of the fourth industrial revolution, the framework for India Innovation Index 2021 has been mapped with GII indicators.
- After rigorous discussions with experts, the index was approved.
- This is against the backdrop of India's aim to break into the top 25 countries in the Global Innovation Index (GII) from its current 46th position.
- For this, states need to improve their existing innovation outcomes, which requires bolstering efforts to improve factors that enable innovative systems.

03 NATIONAL CONCLAVE ON DRAGON FRUIT

Context

- Recently, the Ministry of Agriculture & Farmers Welfare held a national Conclave Dragon Fruit.

Objective

- The objective of this conclave was to give thrust to **increase the area, production and productivity, marketing, branding of Dragon Fruit as well as to increase farmer income.**

Cultivation in India

- There has been a steep increase in dragon fruit cultivation in Maharashtra, Karnataka, Andhra Pradesh, West Bengal, Telangana, Tamil Nadu, Odisha, Gujarat and the Andaman and Nicobar Islands, as well as in many north eastern states.
- The country produces approximately 12,000 tonnes of the fruit every year.



About dragon fruit

- It is a species of wild cactus which is indigenous to South and Central America.
- The fruit's flesh is usually white or red.
- The total lifespan of a Dragon fruit plant is **fifteen to twenty years**.
- They grow in regions where summer temperatures rise above forty degrees Celsius.
- It grows in all kinds of soil and does not require much water.
- World's largest producer and exporter- Vietnam.

04

NATIONAL CONFERENCE ON FOOD AND NUTRITION SECURITY

Context

- Recently, the Department of Food and Public Distribution had organised a one-day national conference on food and nutrition security.

Aim of the Conference

- The conference is aimed at facilitating cross-learning, disseminating best practices for schemes under Public Distribution System (PDS) and strengthening the focus on nutritional security.
- It also includes the discussion on:
 - **Food fortification**
 - **Diversification of food baskets**
 - **Crop diversification**
 - **Integrated Annavitran Portal 2.0**
 - **Reforms in the PDS and storage sector**
- The conference has served as a platform to reflect upon the challenges and opportunities in the true spirit of cooperative federalism for achieving the transformation of the food and nutrition security ecosystem in the country.

Public distribution system in India

- India's targeted public distribution system, under the National Food Security Act, 2013 (NFSA) is the largest public food-security program in the world.
- This system manages the food security requirements of around 80 crore beneficiaries across India, through the country-wide network of more than 5.33 lakh fair price shops.
- The food security response of the government through Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) combined with the "One Nation One Ration Card" (ONORC) during the COVID-19 pandemic served as a lifeline for the people and is being hailed globally as a shining example for its efficiency and sensitivity towards poor and vulnerable sections of the society.

05

INDIA STACK KNOWLEDGE EXCHANGE 2022

Context

- As a part of the Digital India Week celebrations a three day dedicated event titled 'India Stack Knowledge Exchange' programme was organised.

Thematic sessions

- The programme came to its culmination with the three brainstorming thematic sessions on:
 - **Urban Stack**
 - **Technology Stack for e-Commerce**
 - **Space Technology Stack**

Urban Stack

- **Smart Cities Mission**, an ambitious project built around the 4 Quadrant approaches of Information, Communication, Prediction and Management, also includes the 3Ps of deployment - **People, Policies & Processes and Platforms**.
- The mission aims to meet the aspirations of India's population living in cities through various urban development projects.

Technology Stack for e-Commerce

- **Open Network for Digital Commerce** is a freely accessible government-backed platform that aims to democratise e-commerce by moving it from a platform-centric model to an open network for buying and selling of goods and services.
- It is a not-for-profit organisation that will offer a network to enable local digital commerce stores across industries to be discovered and engaged by any network-enabled applications.

Space Technology Stack

- This session was based on ISRO's vision to harness space technology for national development, while pursuing space science research and planetary exploration.
- The thematic session gave insight into space technologies developed indigenously.
- It showcased Space Technology applications, namely, Satellite Communications, Navigation, Earth Observation, and Geospatial Data Dissemination.

06

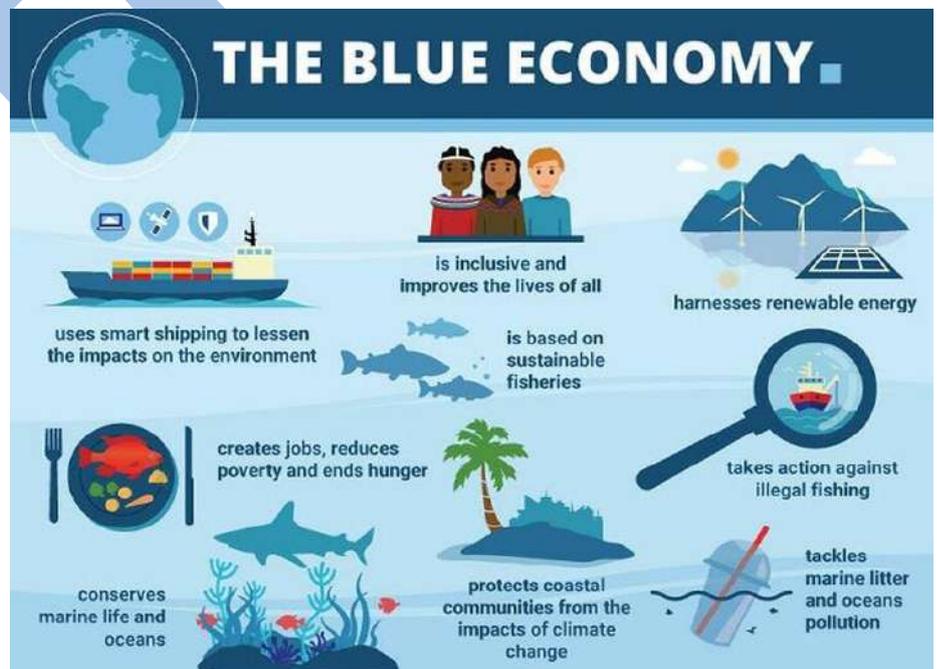
BLUE ECONOMIC POLICY

Context

- Recently, the Minister of State for Earth Sciences informed that the government is finalising the National Policy on Blue Economy for the country.

About Blue economy

- Blue economy essentially refers to the multitude of ocean resources available in the country that can be harnessed to aid the production of goods and services because of its linkages with economic growth, environmental sustainability, and national security.
- The blue economy is a vast socio-economic opportunity for coastal nations like India to utilise ocean resources for societal benefit responsibly.



Draft Blue Economy policy

- The draft Blue Economy policy framework envisages the optimal utilisation of all sectors of the maritime domain, (living, non-living resources, tourism, ocean energy, etc.) for sustainable development of coastal areas.
- This policy document contains key recommendations on National Accounting Framework for Blue Economy and Ocean Governance, Coastal Marine Spatial Planning and Tourism Priority, Marine Fisheries, Aquaculture and Fish Processing. Manufacturing, Emerging Industries, Trade, Technology, Services and Skill Development,

Logistics, Infrastructure and Shipping, Coastal and Deep-Sea Mining and Offshore Energy and Security, Strategic Dimensions and International Engagement.

Thematic areas

- The draft document focuses on seven thematic areas such as
 - National accounting framework for the blue economy and ocean governance
 - Coastal marine spatial planning and tourism
 - Marine fisheries
 - Aquaculture, and fish processing
 - Manufacturing, emerging industries, trade, technology, services, and skill development
 - Logistics, infrastructure and shipping including transshipment
 - Coastal and deep-sea mining and offshore energy; security, strategic dimensions and international engagement.

NEWS IN BRIEF

India Designates 5 New Ramsar Sites

- According to the Ministry of environment of forest and climate change, Five more Indian sites, **three from Tamil Nadu and one each from Mizoram and Madhya Pradesh**, have been recognised as wetlands of international importance under the Ramsar Convention.
- India's total of Ramsar sites now has risen from 49 to 54.

New wetland sites

The new sites include:

- The **Karikili Bird Sanctuary** is located in Kanchipuram district, Chennai.
- The **Pallikaranai Marsh Reserve Forest** is described as "one of the last remaining natural wetlands of Chennai city."
- The **Pichavaram Mangrove Forest** near Chidambaram, in Cuddalore district, is the world's second largest mangrove forest.
- **Sakhya Sagar Lake** is located in Shivpuri district of Madhya Pradesh. It is surrounded by the Madhav National Park.
- **Pala Wetland** is the largest lake in Mizoram, the wetland is about 360 km from capital city Aizawl.

Natural Farming Conclave

- Recently, the Prime Minister had addressed the National Conclave on Natural Farming and urged farmers to take up Natural Farming.
- The conclave was also attended by the Governor and Chief Minister Gujarat.
- The Prime Minister highlighted the role of **Sarpanches and congratulated the farmers for moving ahead** in the direction of a natural way of farming.



Atal VayoAbhyuday Yojana

- The Department of Social Justice and Empowerment has reviewed the National Action Plan for Sr Citizens (NAPSrC) and renamed it as Atal VayoAbhyuday Yojana (AVYAY) for welfare of Senior Citizens across the Country.

Components of the AVYAY scheme:

- Integrated Programme for Senior Citizens (IPSrC)
- State Action Plan for Senior Citizens (SAPSrC)
- Rashtriya Vayoshri Yojana' (RVY)
- Livelihood and Skilling Initiatives for Senior Citizens - (i) Senior Able Citizens for Re-Employment in Dignity (SACRED) (ii) Action Groups Aimed at Social Reconstruction (AGRASR Groups): ElderlySelf-Help groups
- Promoting silver economy
- Channelizing CSR funds for Elderly care
- Scheme for Awareness Generation and Capacity Building for welfare of Senior Citizens - Training, Awareness, Sensitization, Setting up of National Helpline for Senior Citizens.

National Emblem cast on the roof of new Parliament Building

- The Prime Minister has recently unveiled the National Emblem cast on the roof of the New Parliament Building.
- The inaugurated Parliament Building is a part of the **Central Vista Project**.
- The National Emblem is made of bronze with a total weight of 9500 Kg and is 6.5 m in height.
- A supporting structure of steel weighing around 6500 Kg has been constructed to support the Emblem.



PARIMAN: The Geo-Portal for NCR

- Recently, the Union Ministry of Housing & Urban Affairs has made the Geo-Portal known as 'PARIMAN' open to the Public.
- This Geo-Portal will help to improve decentralised planning and management in the NCR region.
- The Portal consists of around 179 Layers presented as Line, Point & Polygon feature covering details of various sectors like **Land Use, Transport, Industries, Water, Power, Health, Shelter, Heritage & Tourism, Disaster Management, etc.**
- The portal was developed by **National Informatics Centre (NIC)**

Autonomous Flying Wing Technology Demonstrator

- In a major breakthrough, the Defence Research and Development Organisation (DRDO) on Friday successfully carried out the maiden flight of the **Autonomous Flying Wing Technology Demonstrator** from the Aeronautical Test Range, Chitradurga, Karnataka.
- This flight marks a major milestone in terms of proving critical technologies towards the development of future unmanned aircraft and is a significant step towards self-reliance in such strategic defence technologies.
- The Unmanned Aerial Vehicle is designed & developed by Aeronautical Development Establishment (ADE), Bengaluru, a premier research laboratory of DRDO.
- It is powered by a small turbofan engine. The airframe, undercarriage and entire flight control and avionics systems used for the aircraft were developed indigenously.



India's largest floating solar power project

- India's largest floating solar power project has now become fully functional at Ramagundam in Telangana.
- The National Thermal Power Corporation (NTPC) has set up the **100-megawatt (MW) plant** through Bharat Heavy Electricals (BHEL) under Engineering, Procurement and Construction (EPC) contract.
- The NTPC has set up the plant in the reservoir of its thermal power plant, saving valuable land resources, and also conserving water by reducing evaporation.
- The floating platform consists of one inverter, transformer and a HT breaker. The solar modules are placed on floaters manufactured with High Density Polyethylene (HDPE) material.



Operation NARCOS

- The Railway Protection Force (RPF) recently recovered narcotics products worth Rs. 7.40 Crore under its "Operation NARCOS".
- Railway Protection Force as one of the laws enforcing agencies that has gained prominence in recent times.
- RPF has been empowered to conduct search, seizure and arrest under NDPS Act since April 2019 and has been actively participating in the efforts of the Government to restrict this illegal

National Apprenticeship Promotion Scheme

- Recently, the Ministry of Skill Development and Entrepreneurship (MSDE) has announced that the **National Apprenticeship Promotion Scheme (NAPS) will be a part of Direct Beneficiary Transfer (DBT) Scheme** providing direct government benefits to all apprentices.
- With the launch of the DBT scheme, the government will directly transfer its contribution to bank accounts of apprentices through National Skill Development Corporation (NSDC), 25% of the stipend payable up to Rs. 1500/- per month.
- The scheme will give a boost to the Skill India Mission by creating sustainable skill development strategies in association with the government, businesses, and educational systems.

BILATERAL AGREEMENTS AND SUMMITS

India-Africa Trade and Investment Agreement

- Recently the government of India has emphasised upon the need for a trade and investment agreement between India and Africa.
- Addressing the Special Ministerial Session at the 17th CII Exim Bank Conclave on India-Africa Growth Partnership today, Minister of Commerce & Industry said that going forward, the economic outlook, in the long run, is going to be promising for both India and Africa, because this is where the markets and opportunities are present.
- India wants partnership on terms that will be comfortable and beneficial for Africa.

India's commitments

- India is committed to the economic resurgence of Africa.
- India has experience with digital revolution to support Africa's growth, extend **education, health, spread digital literacy and quality infrastructure could be harnessed.**
- India is also pursuing deeper engagement with several developed countries and that India recently concluded a Comprehensive Economic Partnership (CEPA) with UAE, and Economic Cooperation and Trade Agreement with Australia.
- India's experience in creating start-up ecosystem can benefit Africa
- India's digital initiatives like UPI, ONDC can benefit Africa immensely

India-EU Trade and Investment Agreements

- India and the European Union have recently concluded the first round of negotiations for India-EU Trade and Investment Agreements, including the Geographical Indicators (GI).
- During this Round 52 technical Sessions covering **18 policy areas of FTA and 7 Sessions on Investment Protection and GIs were held.**
- The second round of negotiations is scheduled to take place in September 2022 at Brussels.

India - EU trade value

- India's bilateral trade with the EU amounted to USD 116.36 billion in 2021-22.
- Despite the global disruptions, the bilateral trade achieved an impressive annual growth of 43.5% in 2021-22.
- Currently the EU is India's second largest trading partner after the US, and the second largest destination for Indian exports.
- The trade agreement with the EU would help India in further expanding and diversifying its exports of **goods and services, including securing the value chains.**
- Both sides are aiming for the trade negotiations to be broad-based, balanced, and comprehensive, based on the principles of fairness and reciprocity.

MILITARY EXERCISES AND INITIATIVES

EX VINBAX 2022

- Recently the 3rd edition of Vietnam-India Bilateral Army Exercise "Ex VINBAX 2022" was conducted in India.
- The exercise is a sequel to previously conducted bilateral exercise in Vietnam in 2019 and a major milestone in strengthening the bilateral relations between India and Vietnam.
- India and Vietnam share a **Comprehensive Strategic Partnership and defence cooperation** is a key pillar of this partnership.
- Vietnam is an important partner in India's Act East policy and the Indo-Pacific vision.
- The theme of Ex VINBAX - 2022 is employment and deployment of an Engineer Company and a Medical Team as part of the United Nations Contingent for Peacekeeping Operations.
- The conduct of Bilateral Army Exercise as a field training exercise with enhanced scope from previous editions of bilateral exercise will strengthen mutual confidence, interoperability and enable sharing of best practices between the Indian Army and Vietnam People's Army.

Swavlamban

- Recently the 'Swavlamban', the maiden seminar of the Naval Innovation and Indigenisation Organisation (NIIO), was unveiled by the Prime Minister.
- The two-day seminar saw enthusiastic participation by the academia, industry, policy makers, think tanks, students and senior government officials.
- The highlight of the seminar was the release of the iDEX DISC7 (SPRINT) challenge by the Prime Minister.
- **SPRINT (Supporting Pole-vaulting in R&D through iDEX, NIIO and TDAC)** is a collaborative project between the Defence Innovation Organisation (DIO) and NIIO aimed at developing at least 75 indigenous technologies / products as a part of Azadi Ka Amrit Mahotsav.

Suraksha Manthan-2022

- The Desert Corps of the Indian Army has recently organised the "Suraksha Manthan 2022", on aspects of **Border & Coastal Security at Jodhpur (Rajasthan).**
- A joint training calendar was also formulated to achieve a higher degree of interoperability and jointness amongst the security forces.
- Current security threats and challenges, along with joint mitigation response, were deliberated upon and such scenarios would now form part of the forthcoming exercises.
- It was further decided to create an enabling security environment and develop a tangible capability development road map to achieve the same.
- During the course of the discussions, aspects of interoperability, operational cohesion and logistics were ironed out in order to enhance overall security along the International Boundary (IB) and coastal sectors.

Y- 3023 Dunagiri

- Recently, the defence minister launched Y- 3023 Dunagiri, Project 17A frigate built by Garden Reach Shipbuilders Limited (GRSE) in Kolkata.
- Christened after a mountain range in the state of Uttarakhand, 'Dunagiri' is the fourth ship of P17A Frigates.
- These are follow-on of the P17 Frigates (Shivalik Class) with improved stealth features, advanced weapons and sensors and platform management systems.
- P17A ships have been designed in-house by the Indian Navy's Directorate of Naval Design (DND), which has successfully spear-headed design of numerous classes of indigenous warships in the past.
- The first two ships of P17A Project, were launched in 2019 and 2020 at MDL and GRSE respectively.
- The third ship (Udaygiri) was launched at MDL on 17 May 2022 earlier this year.

INAS 324 Squadron

- Recently, the Indian Navy commissioned a new Indian Naval Air Squadron 324 at eastern Naval Command.
- INAS 324 has been named "KESTRELS" which are birds of prey and have good sensory capabilities symbolising the envisaged role of the Aircraft and the Air Squadron.
- The unit is the Eastern Seaboard's first Naval Squadron to use indigenously designed and built Advanced Light Helicopter (ALH) MK III (MR) helicopters.

INS Tarkash

- Indian Navy's stealth frigate INS Tarkash visited Djibouti as part of her long-range overseas deployment, followed by a Maritime Partnership Exercise with Sudan Navy.
- INS Tarkash is a **state-of-the-art stealth frigate** of the Indian Navy.
- INS Tarkash is a state-of-the-art platform and has a **weapon-sensor** fit that enables her to address threats in all dimensions.



Hello Everyone!!
I'm Shubham Shukla and have secured AIR 43 in UPSC CSE 2021.

I have a lot of people to thank and the team at Apti Plus is one of them. I have been associated with them via their Mens for success which was one of the best and of notch sources of answer writing.

I was also part of their interview program which helped me score a very high 193 in interviews.

Thank you Team Apti Plus + Goodluck!
Yours Truly
SHUBHAM SHUKLA
Supreme Singla

STUDENT OF **APTI PLUS**
SHUBHAM SHUKLA
AIR 43 UPSC CSE 2021

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AND MANY MORE...

YOJANA

Contents

General Studies-I

- Tribal Songs of Chhattisgarh
- The North Eastern Milieu

General Studies-III

- Policies on Scheduled Tribes
- Healthcare Challenges
- Indigenous Culture

APTI PLUS

01 TRIBAL SONGS OF CHHATTISGARH

GS Syllabus Covered

GS- I: Indian culture will cover the salient aspects of Art Forms, literature and Architecture from ancient to modern times.

GS-II: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Introduction

- Traditional songs and music form the identity of the tribal culture.
- They reflect their natural spirit, unconditional love, and innate energy at every stage of their life. The tribal area of **Chhattisgarh** always resonated with the sound of traditional tribal songs and music.

Background

- The forest areas and tribal settlements of Chhattisgarh, began the revolt against the British at the very beginning of the freedom struggle, even before the urban areas.
- The history of the freedom movement in India conveys the pain of subjugation and exploitation.
- During that period, a different genre of literature was created in the primary language of every State of the country which inspired the national consciousness among the citizens.
- Established writers of major languages, through their patriotic writings, described subjugation as the biggest curse and inspired the **struggle for independence and self-sacrifice**.

Traditional songs and music

- Traditional songs and music form the identity of the tribal culture.
- They reflect tribals' natural spirit, unconditional love, and innate energy at every stage of their life.
- The tribal area of Chhattisgarh always resonated with the sound of traditional tribal songs and music.
- Initially, the tribal songs in their dialects, reverberated with the rebellion of their area, and then with the movement that was prevalent in the country.
- The themes of these songs are **incidents of tribal revolts and the national freedom struggle**.
- The two biggest incidents of tribal revolt in the national Chhattisgarh emerge with the most poignant details in these songs.
- The first incident is related to Sonakhan's landlord. **Veer Narayan Singh**, taking an army of tribal farmers to war with the British army and his public hanging in 1857.
- The second one is related to the great upsurge "**Bhumkal'** in

Dance forms of Chhattisgarh

The Chhattisgarh is home to some of the oldest tribal communities in India. There are several types of tribal groups, each having their own distinctive customs, traditions and lifestyle.

Panthi
Panthi is performed on Maghi Purnima. The artists move around a jarikhamb set up for the event, passing on the soul of their master's renunciation and the teachings of holy person artists like Kabir, Ramdas and Dadu.

Karma
Karma is a famous festival which begins from the 11th day of the Bhadrap month during autumn season, people worship Karam Devta, who is considered as the cause of good and bad fortune.

Sua
Sua nach is Popularly known as the parrot dance. This traditional form of dancing is performed by keeping a parrot in a bamboo-pot and form a circle around it.

Gedi
Gedi is one of the most prominent performing of the district of Dantewada in Chhattisgarh. Representing the rich cultural heritage and traditional legacies of the region.

Pandavani
Pandavani is a society song structure performed prevalently. It portrays the account of the Pandavas, the main characters in the epic Mahabharata. The specialists in the Pandavani portrayal comprise of a lead craftsman and some supporting vocalists and artists.

Raut
Raut Nacha enact the scene of the violent battle between King Khansa and the cowherds who belonged to the Yadav community of the region. Raut Nacha glorifies the age old truth of the triumph of truth over evil.

For More Details Visit : <http://sanskritichhattisgarh.in/>

Bastar in 1910, under the leadership of Gundadhur.

Bhumkal Song in Bhatri Dialect

- Among all the tribal dialects of Bastar, Bhatri is one of the most illustrative.
- In this dialect, "Bhumkal Geet" i.e, "Upsurge song" is a witness to the freedom struggle of Bastar.
- This song describes the entire **Bhumkal rebellion**.

Halbi Song

- In the Bastar region of Chhattisgarh, the Halba tribe is considered very hardworking and advanced.
- Various songs in the Halbi dialect of this tribe echo the freedom struggle.
- This Halbi folk song is a great treasure of the tribal folk tradition.

Gondi Songs

- In Chhattisgarh, the **Gond tribe has been predominant** and many songs composed in their Gondi dialect became a part of community life in the tribal area.
- In this fight for freedom, men will carry an axe on their shoulders and women, a shovel in their hands.
- Baigas, who are forest dwellers, will support by **shooting arrows and slingshots**.
- All the Gonds will keep new and sharpshooting guns.
- Guns are filled with such poisonous bullets from which no enemy can escape.

Baiga Song

- The Baigatribe, living in the central part of Chhattisgarh, is a unique tribe.
- It has its own distinct cultural identity and its folk songs and dances are highly impressive.

Oraon Song

- Oraon is a dominant tribe in the north of Chhattisgarh.
- Many songs were composed in the **Oraon dialect of this tribe**, which motivated the national movement of the entire region.
- These songs, resonating in the countryside settlements and tribal areas are a poignant expression of the tribals' consciousness of freedom and their struggle for the country's liberation.
- They also tell that the seeds of **India's freedom struggle** were sowed in the **folk culture**.

I had a great experience with APTI PLUS. I had found their Mock Test Series. The feedback given in the test series helped me immensely to fine-tune my answers. I was a reader of the IAS Gazette magazines too and found it a great supplement for organized current affairs preparation. I also had attended the offline mock interview of APTI PLUS. The support was great. The organized class was very useful but more importantly, the advisors' feedback session was extremely detailed. Abhijit Sir of APTI PLUS was very cordial and made sure my overall experience was very positive. All in all, I would strongly recommend APTI PLUS for serious aspirants.

— Abhijit Ray
AIR 50, UPSC CSE 2021

STUDENT OF **APTI PLUS**
ABHIJIT RAY
AIR 50 UPSC CSE 2021

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02 THE NORTH EASTERN MILIEU

GS Syllabus Covered

GS-I: Indian culture will cover the salient aspects of Art Forms, literature and Architecture from ancient to modern times.

GS-II: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Background

- The word 'tribe' has a Roman origin that was derived from latin word '**tribus; meaning 'the poor'**'.
- It was used to specify the masses in **Roman society**.
- In the sixteenth century, it gained popularity in English usage to denote a community in claim of descent from an ancestor.
- Tribal communities in India inhabit all parts of the country except the **States of Punjab, Haryana and Delhi, and the Union Territories of Chandigarh and Puducherry**.
- They constitute 8.6 per cent of India's total population and are classified into about seven hundred communities which includes both 'major tribes' and 'sub-tribes'.

Tribal population in India

- Around **12 percent** of the total tribal population in India lives in the **North Eastern States**.
- But unlike central Indian States, where the tribal population is a minority, tribal communities constitute more than eighty per cent of the State population in **Mizoram, Meghalaya and Nagaland**.
- Indeed, NER (North Eastern Region) distinguishes itself in being home to at least 133 Scheduled Tribe groups, out of a total 659 such distinct groups presently identified in India.

Rani Gaidinliu (1915-1993)

Rani Gaidinliu was a Naga spiritual leader and political activist. She joined the fight against the British at the early age of 13, after which she became the leader of the Heraka movement and led revolts against the British, leading to a 14-year-long imprisonment. She was released after Indian Independence, and was subsequently awarded the Padma Bhushan.



Ecology and Inhabitants

- North Eastern Region has remained a backward and less-developed region of the Indian subcontinent though it covers **7.9 percent geographical area of the country**.
- The region has magnificent hills, deep gorges, wandering rivers and rivulets, undulating land, fertile valleys and varied flora & fauna.
- The region shares as much as 4200 km of international boundary with four nations – **Bangladesh, Bhutan, China, and Myanmar**.
- At the same time, it is joined with the rest of India by means of a narrow route popularly known as the **Siliguri corridor or the "Chicken's Neck"**.
- **Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, and Sikkim** could be described as hilly, whereas Assam is largely a plain.

Agricultural practice

- Agriculture being the main occupation and source of livelihood for the farmers in the North Eastern Region.
- The intensive cultivation of crops and wide range of crop diversification in agriculture has not been the history in the region.
- The forest products have been the source of food and fuel.
- Two distinct types of agricultural practice in NER may be observed:
(i) **settled agriculture in the plains, valleys and gentler slopes**

(ii) slash and burn cultivation (Jhum cultivation)

Culture and Tradition

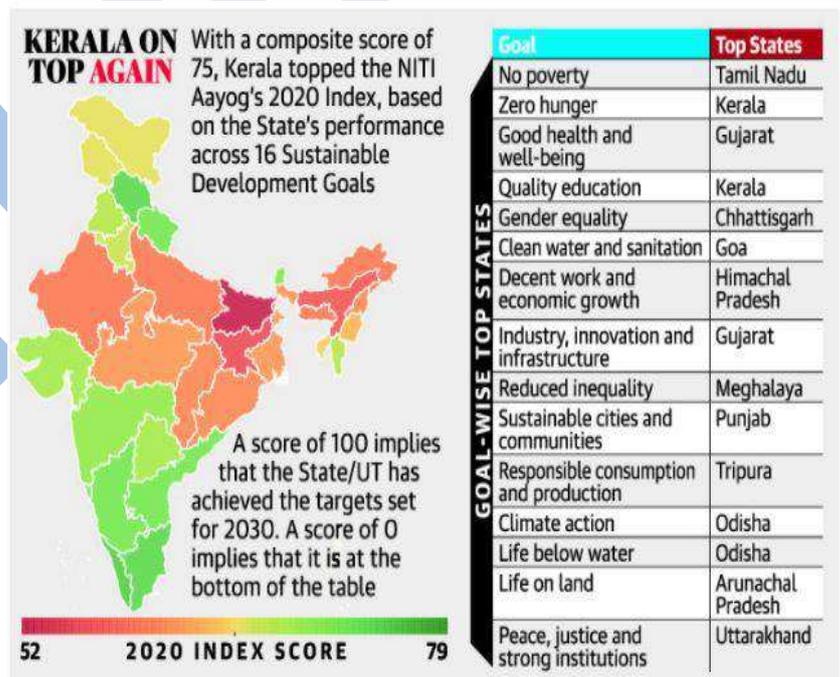
- The **North Eastern Region (NER)** can be regarded as a repository of traditional knowledge systems.
- NER is often described as the cultural mosaic of India being receptive to diverse tribal communities, linguistic, and ethnic identities.
- On the basis of one or the other factor like **socio-cultural similarity, linguistic affinity, ethnic affiliation and common territory**, these tribal communities may conveniently be put under certain groups like the Boro, the Khasi, the Naga, the Lushei Kuki, the Arunachali and others.
- The tribal communities of the North East have their own traditional system of governance.
- In the socio-political life of tribal communities, monarchy and democracy coexist in principle. The members of the tribes are united by kinship and marriage; thus, it becomes difficult to differentiate between the political and domestic matters.
- Linkage segmentation is the chief principle of the political structure of the tribal communities.

Recent Changes

- As per 2011 Census, sex ratio is highest in Manipur (992), followed by Meghalaya (989) and Mizoram (976), and lowest in Sikkim (890).
- The percentage of population living in rural areas is highest in Assam (85.92) and lowest in Mizoram (48.49).
- Infant Mortality Rate was recorded highest in Assam (54), followed by Meghalaya (47) and Mizoram (35). It is the lowest in Manipur (10).

SDG India Index

- NITI Aayog has been publishing the **SDG India Index annually since 2018**.
- The third edition of the **NITI Aayog SDG India Index (2020-21)** computes goal-wise scores on the **16 SDGs for each State and UT**, and a qualitative assessment on Goal 17, covering 17 parameters.
- Special attention is being paid to achievement of SDGs in the North East, with a North Eastern Region (NER) District SDG Index 2021-22 developed by NITI Aayog.
- The Index is constructed from 84 indicators and covers 15 global goals, 50 SDG targets, and 103 districts in the eight States of NER.
- The index will facilitate in identifying crucial gaps and inform interventions to fast-track progress towards achieving the SDGs in the region.



03 POLICIES ON SCHEDULED TRIBES

GS Syllabus Covered

GS-II: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

GS-II: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Introduction

- The term '**Scheduled Tribes**' first appeared in the Constitution of India.
- **Article 366 (25)** defined scheduled tribes as "such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this constitution".

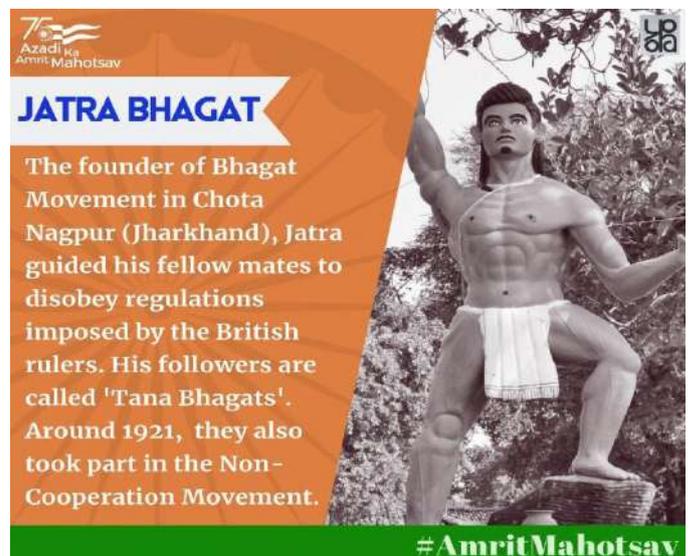


Background

- The framers of the Constitution took note of the fact that certain communities in the country were suffering from **extreme social, educational and economic backwardness** on account of the primitive agricultural practices, lack of infrastructure facilities and geographical isolation.
- In order to uplift such communities, a provision was made in the Constitution of India, in the form of reservation for them in education, employment and in the governing bodies, as **Scheduled Castes (SCs) and Scheduled Tribes (STs)**.
- STs are notified in 30 States/UTs and the number of individual ethnic groups, etc., notified as STs is 705.

Constitutional safeguards for STs

- The Constitution makers adopted specific measures to protect the rights of STs.
- **Article 46** of the Constitution provides that 'the State shall promote with special care, the educational and economic interest of the weaker section of the people, and, in particular, the Scheduled Castes and the Scheduled Tribes, and **shall protect them from social injustice and all forms of exploitation**.
- Similarly, **Articles 15 and 16** empowered the Government for making special provisions for the Scheduled Tribes.
- In addition to the constitutional provisions, the Parliament has passed the **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989** 'to prevent the commission of offences or atrocities against the members of Scheduled Castes and Scheduled Tribes and to provide relief and rehabilitation for the victims of atrocities.
- The **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006** 'recognises and vests forest rights and occupation on forest land to Scheduled Tribes'



National Commission for Scheduled Tribes

- To protect the rights of Scheduled Tribes, the constitutions makers created the **National Commission for Scheduled Tribes (NCST)** which is duty-bound to act as a watchdog and think tank for the STs.

- NCST is a **constitutional body** established under **Article 338A** of the Constitution of India to protect the rights of the tribal people and ensure the responsibilities of different institutions for their welfare.
- Its organisational structure comprises a **Chairperson, Vice-Chairperson, and three Members, appointed by the President of India.**
- The Commission has a permanent Secretariat in New Delhi, six regional offices across the country, and has the **powers of a Civil Court.**

Power and mandate of NCST

- To investigate and monitor all matters relating to the **safeguards provided for the Scheduled Tribes.**
- To inquire into specific complaints with respect to the **deprivation of rights and safeguards of the Scheduled Tribes.**
- To participate and advise on the planning process of **socio-economic development of the Scheduled Tribes** and to evaluate the progress of their development under the Union and any State.
- To make such reports and recommendations as to the measures that should be taken by the Union or any State for the effective implementation of those **safeguards and other measures for the protection, welfare and socio-economic development of the Scheduled Tribes.**
- To present to the President, annually and at such other times, as the Commission may deem fit, reports upon the working of those safeguards.
- The **Union and every State Government shall consult the Commission** on all major policy matters affecting Scheduled Tribes.

Grievance Redressal

- National Commission for Scheduled Tribes (NCST) as a **constitutional body**, has played a key role in the advancement and in securing the rights of STs in India.
- It receives a number of representations from **individuals, civil societies, and non-governmental organisations** regarding injustice being meted out to persons belonging to STs.
- The Commission enjoys cooperation and assistance from all organs of the state.
- NCST has also **launched an e-portal** www.nestgrams.gov.in for the public to register their complaints.

Way forward

- Planning and effective implementation of appropriate schemes of development are imperative so that the tribal communities can realise their full potential.
- The **National Commission for Scheduled Tribes (NCST)** is committed to associate itself with the planning process to fulfil the responsibility entrusted by the Constitution of India.



04

HEALTHCARE CHALLENGES

GS Syllabus Covered

GS-II: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

GS-II: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

Introduction

- Healthcare comprises **hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment.**
- It has become one of India's largest sectors, both in terms of revenue and employment.
- India's healthcare delivery system is categorised into two major components public and private. The government, i.e., public healthcare system, comprises limited secondary and tertiary care institutions in key cities and focuses on providing basic healthcare facilities in the form of **primary healthcare centres (PHCs) in rural areas.**
- The private sector provides a majority of **secondary, tertiary, and quaternary** care institutions with major concentration in metros and tier-I and tier-II cities.

Healthcare of Tribal community

- The distinct **socio-cultural-political** context of each tribe dictates a focused understanding on their health status and planning for appropriate health services.
- The main sources for health data for tribal people in India are the **demographic health surveys conducted periodically by the government.**
- However, their methodologies do not allow for reliable estimates or disaggregation at the local levels.
- The routine health information systems of the government also do not capture the tribal identity of those interacting with government health services.

Tribal Health Report

- Currently, the efforts of gathering and visualising information on tribal health is undertaken by large government task forces like the **Tribal Health Report** published by the expert committee in 2018, or through local civil society initiatives focusing on a particular condition or an event/landscape.
- The most significant limitation is that the different conversations on health seldom acknowledge the impact of various critical social determinants of health and the people's struggle with forest rights that impact these determinants significantly.
- Unfortunately, assessments of many key social determinants by health researchers are few.

Health Status

- Despite decades of focus on reproductive and child health across the country, there still remains severe deficiencies for access to **antenatal, delivery and postnatal services across all tribal communities** irrespective of the region they belong to.
- A uniform family welfare approach across the country prevents adaptation to family welfare needs of **Particularly Vulnerable Tribal Groups (PVTG)** and other tribal communities.
- **Anaemia and other nutritional deficiency** disorders are higher among tribal women and children, contributing to adverse pregnancy outcomes and increased vulnerability of tribal children.
- **Malaria** takes a higher toll in tribal areas than elsewhere in the country.
- Prevalence of **HIV/AIDS** is comparatively higher in the **northeast Indian tribal areas.**

Environmental health

- Environmental health is a neglected area in general but in tribal communities, it is a key social determinant of health.

- Tribal areas are undergoing rapid transition due to **pressures of mining, resource extraction** and often adverse impacts of other policies.
- However tribal health systems are not prepared to deal with health problems arising out of such transitions.
- The health services in tribal areas lack specific programmes and guidelines to organise care and referral for these conditions.

Health Systems

- Tribal health services are severely underfinanced and need higher allocations to **improve equitable growth**; uniform per capita across tribal and non-tribal areas contributes to poor performance.
- There is a disproportionate shortage of health workers in tribal areas; moreover, tribal representation in the health workforce is considerably inadequate, further hampering adaptation and implementation of **health programmes** in these areas.
- Several social determinants severely affect tribal health such as geographical isolation, migration, displacement and armed conflict requiring targeted approaches.
- Tribal health has no special or additional focus in the overall national and State health plans thereby it finds no explicit focus in the corresponding policies and programmes.
- **Civil society and non-profit NGOs** play a key role in delivering services in several tribal areas, and often advocating for tribal specific issues.

Challenges in Healthcare

Healthcare Applications offers an end-to-end solution from ERP (back office) to e-Health including solutions for patient management and accounting as well as seamlessly integrated clinical solutions provided by partners.

Healthcare Applications brings clinical processes, patient service and back office together as one.

- Managing Limited Budgets
- Managing Regulation / Legal Requirements
- Managing Increased Patient Expectations
- Managing Competition

Need for a Special Focus

- The term Scheduled Tribes (STs) is a broad category that has over 700 communities with wide differences in genetic, ethnic, cultural and social differences between them.
- The persistent poor health outcomes of tribal people, their particular **socio-economic and political scenario** and decades of marginalisation from the social, economic, political and cultural mainstream, necessitate a special approach towards our tribal people, especially their health.
- The need of the hour is to go beyond describing problems in **health services**, and focusing on collaborative partnerships with **civil society and community-based organisations** to customise and implement local health reforms in partnership with the communities.

PUBLIC ADMINISTRATION

by
Mr. Sachin Jain
Ex IRS Officer
8 yrs+ Experience

Classes starting from
2nd week of August

05

INDIGENOUS CULTURE**GS Syllabus Covered**

GS-II: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

GS-II: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Introduction

- Indigenous communities around the world are bearers of **strong traditional culture, art, craft and knowledge of the environment**.
- The cultures and diversity of indigenous people in India are fascinating.
- It is estimated that there are more than **476 million indigenous** people in the world, spread across 90 countries and representing 5000 different cultures.
- They make up 6.2 percent of the global population and live in all geographic regions.
- Roughly 104 million people, which is 8.6 per cent of the national population, live in such communities.
- Some regions having large concentrations of such communities are the **North Eastern States, Rajasthan and West Bengal**.

Traditional knowledge and cultural expressions

- Indigenous communities' traditional knowledge and cultural expressions reflect their scientific living, advanced technologies and high level of human skills.
- Their intimate knowledge of the **local flora and fauna, seeds, medicines, agriculture, fishing, architecture, textile, food, etc.**, provides the basis for a truly sustainable path of development.
- A **World Bank Report** on indigenous people's states that, "While Indigenous Peoples own, occupy, or use a quarter of the world's surface area, they **safeguard 80 per cent of the world's remaining biodiversity**."

The Adis of Arunachal Pradesh

- The Adis constitute one of the numerous indigenous communities of Arunachal Pradesh.
- The literal meaning of **Adi** is "hill" or "mountain top".
- Adis speak the **Sino-Tibetan language**.
- Adis, like most other **indigenous communities**, are dependent on nature and are fully self-sufficient in their livelihood and lifestyle.
- All their resources come from the forests which they also protect as their life source.
- Adis live in typical raised houses which are usually rectangular and are built on stilts.
- Majority of the Adi men-folk are good craftsmen, and have a unique way of building houses using different types of plant materials.

The Tangsas of Arunachal Pradesh

- The Tangsa community inhabit the **Changlang district of eastern Arunachal Pradesh**, located in the lap of Patkai hills.
- The Tangsas have a rich cultural heritage and are the bearers of traditional knowledge and skills of **natural food processing and preservation, sustainable cooking, weaving, architecture and basketry**.
- These communities actively continue with the **indigenous bamboo tea-making**.
- Bamboo is not only used for traditional tea-making but has an overarching utility in the Tangsa lifestyle too.
- The staple diet of Tangsas and their traditional cuisine consisting of rice, meat, and fish are all cooked in bamboo tubes directly placed on fire.

The Kalbelias of Rajasthan

- Kalbelia is a unique community of **traditional snake-charmers by profession**.

- They belong to the family of Navnaths, a nomadic community from the Yogi sect.
- Locally, they are also referred to as '**ghoomantar**', meaning the ones who wander.
- A few decades ago, they settled in Chopasni region of Jodhpur in Rajasthan, where around 200 Kalbelias reside.
- Since the enactment of the **Wildlife Act of 1972** and subsequent ban on snake-handling, the Kalbelias have lost their traditional profession and pursued their performing art for their livelihoods.
- The Kalbelia tradition is rich in **indigenous music, songs, dance and handicrafts** (embroidery and ethnic jewellery) all combining together to create this vibrant and colourful folk form.
- They are also known for their extensive knowledge of local **flora and fauna, and making of traditional medicines from natural ingredients.**
- **Kalbelia women** as dancers play a vital role in taking their cultural tradition forward and enjoy equal participation in the practice of this art form.

The Rajbongshis of West Bengal

- Rajbongshi is an indigenous community living in **West Bengal, Assam, Arunachal Pradesh, Meghalaya and various North Eastern** parts of India.
- The word 'Rajbongshi' literally means 'royal community', as they are believed to have hailed from the ancient Koch kingdom.
- They are one of the largest and ancient ethnic groups of **North and South Dinajpur of West Bengal.**
- Agriculture is the main pillar of their rural economy, owing to the rich and conducive natural conditions.
- Gomira dance, locally known as MukhaNach, is a form of ritualistic dance or musical folk theatre, practised by this community by putting on Gomira wooden masks of different forms of deities.
- Gomira dance is mainly organised to appease the village deity, Goddess Chandi, and usher in her blessings.
- Dhokra or jute mat weaving is an indigenous tradition practised by the Rajbongshi women in the villages of Uttar and Dakshin Dinajpur districts.
- Dhokra products have already made a distinctive mark in the handicraft and home design space.

Conclusion

- It is evident that these **unique traditional knowledge systems, art and crafts** have a deep-rooted relationship of interdependency and reverence with nature.
- When the world is struggling for solutions and success in reaching the **Sustainable Development Goals by 2030**, there are hundreds of indigenous communities across the country which do not have any carbon footprint of their traditional ways of living.
- These communities are mostly self-sufficient and live with their **wisdom of nature and culture** that need to be recognised and protected urgently.

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KURUKSHETRA

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APTI PLUS

* The table of content is segregated as per its relevance with Mains Syllabus of CSE Examination.

* The article mention under GS paper in table of content might be important for many other topics in GS Papers as well.

* The details relevance of each article/Topics with respect to GS syllabus has been mention at the starting of each article.

01 ROLE OF WOMEN IN WATER CONSERVATION

GS Syllabus Covered

GS - I: Role of women and women's organization, population and associated issues, poverty and developmental issues, urbanization, their problems and their remedies.

GS - II: Government policies and interventions for development in various sectors and issues arising out of their design and implementation

Introduction

- **Women and water** are linked in several ways, a vital linkage being their role in water management.
- Recognising the fact that women have always been burdened with water collection and management at the household level.

Women's Role in Water Conservation

- The **UN in 2010 estimated that over 800 million people** still live without access to 'improved sources of drinking water'.
- Invariably, the burden of water collection in water deprived households falls on the shoulder of women.
- In fact in **80 percent** of these types of households, **women and girls** are responsible for the collection of water from distant water sources.
- There is a need to tackle the injustice of water insecurity to improve the lives of the people of India but there must be a recognition of the plight of women and young girls who are particularly vulnerable due to water insecurity.

Jal Jeevan Mission

- The **National Policy for Women** in 2016 was a major step towards recognising the pressure that inadequate water supply places on women.
- The policy recommended that it is imperative to design all relevant government programmes on water management keeping in mind that women are the primary stakeholders.
- The Prime Minister envisaged a plan to improve the lives of all citizens by providing every household with **clean tap water by 2024**.
- To achieve this objective, the **Jal Jeevan Mission** was launched on August 15, 2019, under the ambit of the Ministry of Jal Shakti.
- The stated objective of the Jal Jeevan Mission is to provide **Functional Household Tap Connections (FHTCs)** to every rural household.
- Community infrastructure such as schools, Gram Panchayat buildings, health centres and other such locations were given particularly high emphasis as they can service the needs of the many.

Access to water

- The government upgraded existing programmes that attempted to **improve access to water, and implemented several steps that called for building infrastructure**.
- It was decided that the government must continue to monitor tap connections and ensure that they maintain their functionality.
- Further, a community approach to water management was to be taken.
- This holistic approach to development had an immediate impact on the daily lives of millions of Indians.
- At the start of the Jal Jeevan Mission, only 17 percent or 3.23 crore households in India had household tap water connections which has currently reached at almost 6 crore more households who had gained access to **Functional Household Tap Connections (FHTCs)**.
- At this pace, the government is well on track to achieve its target of Functional Household Tap Connections in **every rural household by 2024**.

Women in Jal Jeevan Mission

- During the World Water Day on 22 March 2022, the Prime Minister said that no one understands the value of water better than women.
- He said that if water conservation is handed over to women, they will ensure unimaginable positive results.
- Its main base is a mass movement and public participation.
- This mission to empower women to manage water resources is based on research that women are more efficient at water management.
- The **Jal Jeevan Mission** has placed an emphasis on including women as **decision-makers on water management, a role traditionally that has been denied to them.**

Subcommittees of the Gram Panchayats

- The Jal Jeevan Mission envisions subcommittees of the Gram Panchayats to take up the **role of planning, operations, implementation, management, and maintenance of the infrastructure provided under the Jal Jeevan Mission.**
- These subcommittees, namely **Village Water and Sanitation Committee (VWSC)/ Pani Samiti/ User Groups**, etc, usually comprise 10 to 12 members and have a 50 percent representation of women as well as a proportional representation of the weaker sections of the concerned area.
- The government has laid out that every village must have five women that have been trained to test water samples for any kind of contamination.
- These women will be trained to use Field Test Kits (FTK) which can test **9 parameters such as pH, alkalinity, chloride, nitrate, total hardness, fluoride, iron, residual free chlorine and H₂S.**

Conclusion

- The Government of India had taken cognisance of this fact and despite a global pandemic it has taken major steps over the past few years to alleviate the scourge of water scarcity.
- The Jal Jeevan Mission has placed an emphasis on including women as decision-makers on water management, a role traditionally that has been denied to them.
- The key is to empower the decision-makers through this mission, involving women in both upfront operations in the **Village Water and Sanitation Committee** through a quota as well as train them to complete backend functions such as testing of water purity, etc.

02

JAL SHAKTI ABHIYAN: CATCH THE RAIN

GS Syllabus Covered

GS-II: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Introduction

- The Ministry of Jal Shakti has launched a nation-wide campaign "**Jal Shakti Abhiyan: Catch the Rain**" (**JSA:CTR**) **focusing on saving and conserving rainwater** with the theme "Catch the rain, where it falls, when it falls" from 29 March 2022 to 30 November 2022 in the pre-monsoon and monsoon periods of 2022, covering both urban and rural areas of all the districts in the country.

Jal Shakti Abhiyan 2019

- To address the problem of **water conservation**, the government has launched the **Jal Shakti Abhiyan (JSA)** in 2019.
- This was a time-bound, mission mode water conservation campaign, implemented in 1,592 blocks of 256 water-stressed districts of the country.
- JSA was a collaborative effort of various ministries of the Government of India and state governments.
- The JSA aimed at making **water conservation a jan andolan through extensive communication and involvement of communities.**

Focus area of Jal Shakti Abhiyan

- The Jal Shakti Abhiyan focused on five aspects:
 - 1) Water conservation and rainwater harvesting
 - 2) Renovation of traditional and other water bodies
 - 3) Reuse of water and recharging of structures
 - 4) Watershed development
 - 5) Intensive afforestation

Jal Shakti Abhiyan: Catch the Rain 2021

- Encouraged by this, the “Jal Shakti Abhiyan: Catch the Rain” (JSA:CTR) campaign with the theme “Catch the Rain, where it falls, when it falls” was launched by the Prime Minister in march 2021.
- The campaign implemented by **National Water Mission (NWM)**, had the following five focused interventions.
 - a) Rainwater harvesting and water conservation
 - b) Enumerating, geo-tagging and making inventory of all water bodies; preparation of scientific plans for water conservation
 - c) Setting up Jal Shakti Kendras in all districts
 - d) Intensive afforestation
 - e) Awareness generation



Jal Shakti Abhiyan: Catch the Rain 2022

- Building on the success of the **Jal Shakti Abhiyans of 2019 and 2021** in generating awareness amongst the citizens of the country, this year ‘Jal Shakti Abhiyan: Catch The Rain-2022’ (JSA:CTR-2022) campaign was launched by President of India in march 2022.
- JSA:CTR-2022 is being taken up in all districts of the country with the main theme Catch the Rain, where it falls, when it falls.
- Under this campaign activities are also undertaken under the following new interventions in the campaign in addition to the activities considered under interventions of JSA: CTR-2021:
 - a) **Spring Shed Development and Management**
 - b) **Wetland Development and Management**
 - c) **Catchment area protection and development**



Amrit Sarovars

- India is celebrating the Azadi ka Amrit Mahotsav, marking **75 years of Independence**.
- It has been decided that, in order to commemorate this momentous occasion, 75 water bodies will be created or rejuvenated in every district.
- These will be called **Amrit Sarovars**.
- The creation/rejuvenation of the Amrit Sarovars will be a special effort under **JSA-CTR 2022**.
- As a part of this exercise, district authorities have been requested to:

(i) Identify possible sites for the **creation of new water bodies**.

The exercise may also include afforestation/ tree planting around water bodies and its catchment area.

(ii) In case of rejuvenation of existing water bodies, there are detailed guidelines that have been issued by the **National Water Mission**.

- Rejuvenation may include cleaning/ desilting, removal of encroachments, ensuring that the channels for water flow are clear and treatment of the catchment area.

02

AGNI MISSION: LEVERAGING TECHNOLOGY AND INNOVATION FOR CLEAN WATER

GS Syllabus Covered

GS - II: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

GS - III: Conservation, environmental pollution and degradation, environmental impact assessment.

Introduction

- AGNIi is one of the nine missions under the **Prime Minister's Science, Technology, and Innovation Advisory Council**, working under the aegis of the **Office of the Principal Scientific Adviser** and executed at Invest India, the **National Investment Promotion and Facilitation Agency**.
- The mission aims to support the national efforts to **boost the innovation ecosystem** in the country by connecting innovators across industry, individuals and the grassroots to the market and helping commercialise innovative solutions.

Focus of AGNIi Mission

AGNIi's approach focuses on the following:

1. Bridging the Gap between Innovators and Adopters:

- AGNIi helps resolve the mismatch between innovations and adopter needs.
- AGNIi partners with agencies and organisations to understand their strategic, policy, and programmatic priorities.
- AGNIi innovation teams reach out across **innovator networks to identify these Indian technologies**.

2. Creating a Scalable Impact:

- AGNIi helps Indian technologists and innovators engage major adopters and their networks.
- AGNIi institutional partnerships establish channels that help to better understand community needs, to build relevant technology use cases, and to facilitate end-user adoption.

3. Empowering the Bottom of the Pyramid:

- A primary AGNIi aim is to ensure that Government's guiding principle of Antyodaya that the poor, marginalised, and those left behind are engaged to the maximum possible extent.
- AGNIi seeks, in its partnerships, to **ensure that grassroots and field-level insights** are prioritised in AGNIi operational scenarios, and technology stack development.

4. Supporting the Competitiveness and Capturing the Value of Indian Technology:

- AGNIi has refined its technological focus.
- This includes engaging Indian innovation in the **domains of artificial intelligence, quantum computing, robotics, cyber-physical, materials, and energy**.

Building India's Clean Water Technology Ecosystem

- AGNIi extensively interacts and collaborates with innovators and technology providers to address India's pressing clean water challenges.
- The clean water management ecosystem in India is at a growth stage wherein increasing resources are being infused to **develop sustainable, low-cost, and cutting-edge technologies**.

1. Improving Water Availability

- Innovative technology solutions like **Atmospheric Water Generators (AWGs)** are alternatives that can help make affordable clean water available to Indian citizens.
- AWGs essentially extract water from humid ambient air and convert the same into potable water.
- Technological solutions can help restore these water bodies and reverse the effects of pollution. Such innovations utilise artificial intelligence based electromagnetic mapping technology that enables them to predict presence of perennial water sources with high accuracy (90 percent and above) and develop the source within 100-120 days.

2. Improving Water Quality

- Availability of water is half the battle won.
- The other half is to ensure that the available **water is free of contaminants and fit for human consumption** as otherwise it has severe repercussions for human health.
- In the context of water quality, innovative technology solutions can be broadly classified into **two categories**:

2.1 Filtration solutions:

- The Indian innovation ecosystem provides various sustainable water filtration and membrane-based cost-effective technologies for treating water.
- Indian startups have developed patented water purifier technologies to produce clean potable water.

2.2 Monitoring solutions:

- Water monitoring systems essentially utilise sophisticated tools such as IoT that enables low-cost, low-power, and real time monitoring of water quantity (water levels, flow, soil moisture, and rainfall intensity) and quality (pH, conductivity, turbidity, dissolved oxygen, trace metals, and microorganisms).

3. Collaborating for Clean Water

- AGNIi collaborates with various stakeholders to fulfil India's clean water needs.
- These stakeholders include non-profit organisations, government departments, ministries, and corporates among others.

3.1. Quenching Eastern India's thirst:

- Metallic groundwater contamination is a major problem in the Ganga-Brahmaputra plains of India.
- As a result, a large section of the Indian population that resides in these fertile river basins faces severe drinking water quality challenges.
- In this context, **AGNI collaborated with Aga Khan Foundation** in December 2018 to conduct a technology scouting exercise for identification of affordable water filtration technologies to be deployed by the Foundation in selected sites in Eastern India.
- AGNIi recommended **water purification technologies** developed by **Bhabha Atomic Research Centre (BARC)**.
- These technologies addressed issues related to arsenic, iron, and multi-contaminants.

3.2. Strengthening Grassroots Networks

- MeitY's CSC network with its strong on ground presence can play a pivotal role in facilitating adoption of clean water technologies to rural remote areas of the country.
- To this end, AGNIi collaborated with CSC in February 2021 to organise a technology showcase for VLEs of Uttar Pradesh.
- These solutions ranged from water filtration technologies to water portability solutions. Multiple engagements were facilitated between the VLEs and innovators for deploying these solutions in remote areas of Uttar Pradesh.

3.3. Partnering with Global Stakeholders

- WaterAid, a multinational NGO works towards empowering local communities and ensures delivery of right innovations and technologies in pursuit of clean water and sanitation for all.
- WaterAid partnered with AGNIi to organise a virtual technology showcase in early November 2021.

Conclusion

- AGNIi remains committed to help India achieve its climate related goals, better public health outcomes, improve agricultural and industrial output, and propel the country towards timely achievement of SDG 6 as well as overall better socio-economic and human development outcomes.
- Government of India's AGNIi Mission based on its past achievements, is set to play a pivotal role in facilitating high impact, affordable, scalable, and sustainable technological solutions along with relevant stakeholders for clean water provisioning across rural and urban areas, inclusive of geographically difficult and remote locations of the country.

03 KEEPING WATER RESOURCES CLEAN

GS Syllabus Covered

GS-II: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

GS-III: Conservation, environmental pollution and degradation, environmental impact assessment.

Introduction

- India is endowed with a **rich diversity of natural resources**, water being one of them.
- About **71 percent** of the **earth’s surface is covered with water**.
- With continuous rise in population, the demand for water in India is expected to rise drastically. To reduce the burden of waterborne diseases, **clean drinking water** is a prerequisite which ultimately helps in **overall improvement of public health**.
- It is of utmost importance to periodically assess and monitor groundwater levels to understand availability and quality of water resources over time and across aquifers.

Impacts of climate change on water resources

- The report on **“India’s Initial National Communication to the United Nations Framework Convention on Climate Change”** published by the Ministry of Environment, Forests and Climate Change, in the year 2004 identifies the following projected impacts of climate change on water resources.
- Projected climate change resulting in warming, increase in sea level and melting of glaciers will adversely affect the water balance in different parts of India and quality of groundwater along the coastal plains.
- Climate change is likely to affect groundwater due to changes in **precipitation and evapo-transpiration**.
- Rising sea levels may lead to increased saline intrusion into coastal and island aquifers, while increased frequency and severity of floods may affect groundwater quality in alluvial aquifers. Increased rainfall intensity may lead to higher runoff and possibly reduced recharge.

National Water Mission

- The Mission was devised to **ensure integrated water resource management helping to conserve water, minimize wastage and ensure more equitable distribution both across and within states**.

5 TIPS TO KEEP WATER SAFE & CLEAN

1. DISPOSE PHARMACEUTICALS WISELY
According to WHO, the concentration of pharmaceuticals in surface and groundwaters depends mostly on the right wastewater treatment methods (usually the detected volume is less than 0.1 µg/l or 100 ng/l). Nevertheless, any of us should understand that flushing chemicals only dilutes them.

2. DON'T POUR DETERGENTS DOWN DRAINS
The same problem is observed with detergents and chemicals used for fertilisation. These products don't dissolve but pollute waters and the ground. Serious health effects have witnessed due to polluted water consumption.

3. PROTECT YOUR PRIVATE WELL
EPA recommends test waters in private wells at least annually to avoid bacterial contamination or treat water timely. 35% of water wells in Ireland were observing water quality issues.

4. PRESERVE NATURAL RESOURCES
It seems to be an obvious and easy-to-follow tip, but so many of us forget that the Earth and its riches found in forests, fields, rivers and lakes - all that are the miraculous source of life and it's in our hands to keep our surroundings clean and fight against pollution.

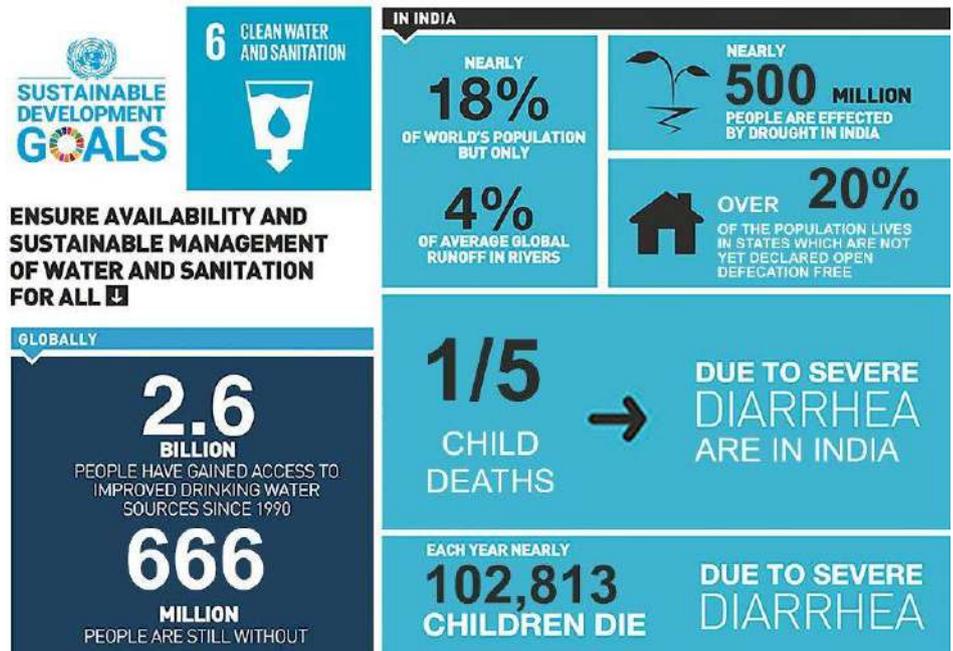
5. REDUCE WATER USAGE
Water is a finite resource so next time you find yourself about to waste or contaminate water, think of somebody across the world who has to live some days without an adequate supply of clean drinking water. LEAVE NO ONE BEHIND on World Water Day and every day.

Designed by: **H2O labcheck**
Dedicated to: **27 MARCH WORLD WATER DAY**

- The Mission takes into account the provisions of the **National Water Policy** and to optimize water use by increasing water use efficiency by **20 percent** through regulatory mechanisms with differential entitlements and pricing.
- It aims that a considerable share of the water needs of urban areas are met through recycling of waste water.
- It also ensures that the water requirements of coastal cities with inadequate alternative sources of water are met through adoption of new and appropriate technologies such as low temperature desalination technologies that allow for the use of ocean water.

Sustainable Development Goal (SDG) 6

- The objective of **Sustainable Development Goal (SDG) 6** focuses on the sustainable management of water resources, wastewater and ecosystems so as to ensure safe drinking water and sanitation for all.
- In the **2030 Agenda for Sustainable Development**, countries have committed to engage in systematic follow-up and review of progress towards the Goals and Targets, using a set of global indicators.
- As per the records mentioned by the United Nations around 56 percent of the world's domestic wastewater is safely treated.



Government measures

- The Ministry of Jal Shakti launched **Jal Shakti Abhiyaan**.
- It is a **time-bound, mission-mode water conservation campaign**.
- The Mission aims to achieve the objective to provide safe and adequate drinking water through individual household tap connections by 2024 in rural India.
- The intervention areas under this programme include water conservation and rainwater harvesting; renovation of traditional and other water bodies/tanks; reuse and recharge structures; watershed development; and intensive afforestation.

Jal Abhyaranya Programme

- Scarcity of water in mountainous regions has always been a matter of concern.
- According to a **Niti Aayog report**, nearly half of the perennial springs have already dried up or are turning seasonal by limiting flow only during monsoon.
- Discharge of springs has reduced substantially directly impacting the people socially and economically.
- Under the **National mission on Himalayan studies programme** of the Ministry of Environment, Forest and Climate Change, the G.B. Pant National Institute of Himalayan Environment is taking lead in maintaining the Geo Database of spring inventory and developing demonstrative models of Gram Jal Abhyaranya in at least one village of selected districts of 12 IHR States.

Way Forward

- With continuous rise in population, the demand for water in India is expected to rise drastically. To reduce the burden of waterborne diseases, clean drinking water is a prerequisite which ultimately helps in overall improvement of public health.

- It is critical that we understand that pro-environmental behaviour is required to save our precious natural resources.
- Although change in behaviour for positive environmental actions can't be achieved overnight, it is a constant process.

04

NATURE BASED SOLUTIONS FOR URBAN WATER MANAGEMENT

GS Syllabus Covered

GS - III: Conservation, environmental pollution and degradation, environmental impact assessment.

Science and Technology- developments and their applications and effects in everyday life.

Introduction

- India is **world's sixth-largest economy**, is home to more than 4,400 cities and towns out of which 53 cities have a million-plus population.
- Moreover, it is predicted that about **60 percent of the world population** will be living in urban areas by 2025 wherein India will nearly add about 416 million urban dwellers to cities by 2050. Increasing urbanization and changing climatic trends with a limited resource base has created an undue pressure on the natural resources making the cities vulnerable to climate changes.
- The **Global Climate Risk Index 2021** ranks India as the 7 most-affected country from climate-related extreme weather events such as storms, floods, heatwaves, etc.

Environmental issues

- There are several environmental issues persisted in the cities such as **air pollution, waste contamination, water pollution** and more, challenges associated with the urban water sources are more imperative to be put on table for discourse.
- As per the **World Bank report 'High and Dry: Climate Change, Water and the Economy'**, water scarcity, aggravated by climate change, could cost some regions up to 6 percent of their GDP.
- The **Fifth Assessment Report of Intergovernmental Panel on Climate Change (IPCC)** while assessing hydrological impacts of climate change also projected that global warming can have huge implications on water resources.
- As per the assessment by NITI Aayog, over 21 major Indian cities including **Delhi, Bengaluru, Hyderabad, and Chennai**, would run out of groundwater very soon, affecting nearly 100 million people.

Traditional knowledge

- The Vedas and other ancient Indian scriptures make references to **wells, canals, tanks, and dams**.
- The traditional knowledge aligned with nature always played an important role in maintaining and restoring ecological balance, acting as a source of drinking water, groundwater recharge, flood control, while ensuring livelihood opportunities to people.
- As per the **International Union for Conservation of Nature (IUCN)**, nature-based solutions are "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.

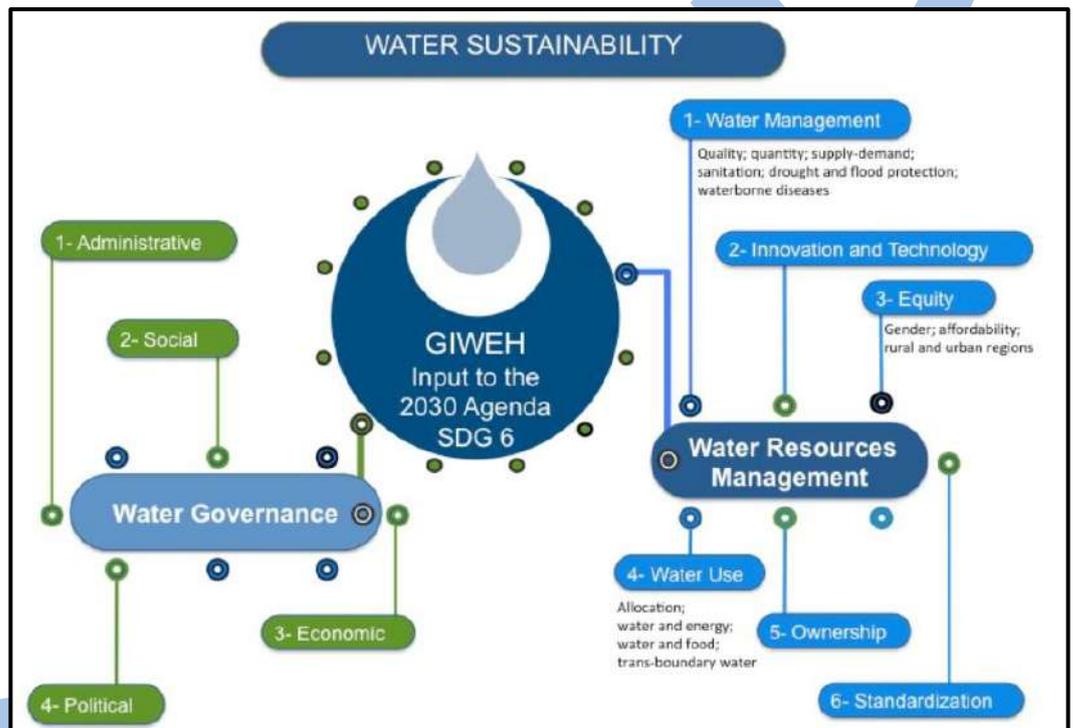


Nature-based solutions

- **Nature-based solutions (NBS)** generate economic gains through immediate job creation, increased business productivity and tourism.
- The nature-based solutions can be explored to look at **water management through a different lens**.
- NBS for water resources management involve the planned and deliberate use of ecosystem services to **improve water quantity and quality and to increase resilience to climate change**.
- NBS for water have **high potential to contribute to the achievement of SDGs and targets of the 2030 Agenda for sustainable development**.
- Nature-based solutions to manage water sector involves enhancing and delivering natural ecosystem services such as **mangroves protecting shorelines from storms, peatlands sequestering carbon, wetlands filtering contaminated water, lakes storing large water supplies, and floodplains absorbing excess water runoff**.

Blue-green infrastructure

- Endorsing blue-green infrastructure in the cities, **creation and maintenance of urban green spaces is also recommended**.
- Creating urban green spaces is a **holistic and a comprehensive approach** to convert concrete jungle into a liveable natural space with blue water bodies and green tree plantations.
- By integrating **grey and green infrastructure**, cities are also investing in sustainable drainage systems'; reducing hardened and impervious surfaces allowing water to infiltrate into the ground.





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05

SKILLING RURAL WORKFORCE FOR WATER MANAGEMENT**GS Syllabus Covered**

GS-II: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

GS-III: Conservation, environmental pollution and degradation, environmental impact assessment.

Introduction

- Water management is the control and movement of water resources to **minimize damage to life and property and to maximize efficient beneficial use.**
- **India accounts for 2.4% of the world's total area and has 18% of the world's population; but has only 4% of the total available fresh water.**
- So, it's not very surprising if India faces a perennial challenge of water shortage.
- Good water management of dams and levees reduces the risk of harm due to flooding.
- **Irrigation water management systems** make the most efficient use of limited water supplies for agriculture.
- While India is one of the more severely affected countries, water scarcity is a global problem.

Global scenario

- Presently, many developing countries are facing an increased amount of water pollution, Oceans, rivers, canals, dams, ponds and groundwater, they all are subject to pollution.
- The worsening situation of water scarcity as well as the looming challenge of climate change, have prompted the United Nations to paint a grim picture of the days to come which fears that by **2025, half of the countries worldwide will face water stress or outright shortages.**
- By **2050, as many as three out of four people around the globe could be affected by water scarcity.**
- According to the **Intergovernmental Panel on Climate Change, by 2050, more than one billion people in Asia alone are projected to experience negative impacts on water resources as a result of climate change.**

Facts of UN report on water scarcity

- Around **700 million people in 43 countries** suffer today from **water scarcity.**
- By 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world's population could be living under water stressed conditions.
- With the existing climate change scenario, almost half the world's population will be living in areas of high-water stress by 2030, including between 75 million and 250 million people in Africa.
- In addition, water scarcity in some arid and semi-arid places will displace between 24 million and 700 million people.
- **Sub-Saharan Africa** has the largest number of water-stressed countries of any region.

Going Beyond Awareness Building

- Spreading awareness and imparting skills for better management of water is what we need to continue as we strive to instil a sense of responsibility and accountability among the people towards the judicious use of our valuable water resources.
- Even today there are people following conventional modes of water conservation and engaged in activities like rejuvenation of defunct water bodies and building new water resources successfully.

Government Initiatives

- In December 2019, while launching the **Atal Jal Yojana**, the Prime Minister had urged farmers to opt for less water intensive crops and irrigation methods that will help conserve water.
- The Atal Jal Yojana is aimed at **improving groundwater level in seven states.**
- Under the central government programmes lakhs of people have been trained in water management issues already.

- For example, more than **7 lakh Swachhagrahis** are part of the **Swachh Bharat Mission**, who have been imparted with skills and knowledge around sanitation which is deeply linked with water issues as well.
- Under the **Atal Bhujal Yojana** too, there are thousands of **Bhujal Jankars** (people knowledgeable in ground water issues) and a sizable workforce is available under the Jal Jeevan Mission as well.

The Silent Heroes

- While important programmes are already in place and **new local-regional-national programmes** are getting regularly conceptualised and introduced by the governments.
- There are a few bright instances of civil society organizations and volunteers making admirable contributions to the society by working among the people to transform the situation.
- A shining example in this context is that of the **Tarun Bharat Sangh**, headed by the "Water Man" **Mr. Rajendra Singh**, who has been working for restoring and reviving water conservation structures across many states in the country for a few decades.

06

WATER MANAGEMENT IN AGRICULTURE

GS Syllabus Covered

GS-III: Conservation, environmental pollution and degradation, environmental impact assessment.

Introduction

- Water is of fundamental importance to human development, the environment and the economy.
- Access to water and water security is paramount to **improving food security, incomes and livelihoods of rural communities**.
- **Agricultural water management (AWM)** seeks to use water in a way that provides crops and animals the amount of water they need, enhances productivity, and conserves natural resources for the benefit of downstream users and ecosystem services.
- **Demand for water** from various sectors of economy (urban, industry, and agriculture) is rapidly **increasing while the supply of freshwater is constant**.

Water usage in Agriculture sector

- Agriculture sector uses **89 percent of the groundwater for irrigation**, while **11 percent** is consumed in the domestic and industrial uses.
- Overall, the agriculture sector is the largest freshwater user in the country accounting for almost **85 percent** of the total water usage.
- This is mainly due to cultivation of water intensive crops such as rice, wheat, sugarcane and cotton, and very low irrigation efficiency.
- Water table is receding at an **alarming rate of 0.3 metre per year**.
- The unsustainable groundwater use necessitates demand management and supply augmentation measures for increased water use efficiency in the agriculture sector.
- Further, the **National Water Policy 2012 recommends** conservation of existing **water bodies, rivers, river corridors, etc.**

Managing Water at Source

- Government has envisioned '**Creation and Expansion of Irrigation Facilities**' into its top agenda to mitigate recurrent famines and hunger.
- During initial years, development of canal irrigation remained a priority area.
- As a result, the area irrigated by canals increased from 71 lakh hectares during 1950-51 to 144 lakh hectares during 1980-81; and further reached a **peak level of 173 lakh hectares** by the year 1991-92.
- But the share of canal irrigation in the total irrigated area has declined from 37.5 percent in 1984-85 to 23.43 percent in 2014-15.
- **New agronomic practices** such as raised bed planting, ridge-furrow method of sowing, sub-surface irrigation and precision farming are also helpful in increasing irrigation efficiency.

- There are some specific reasons for making **canal irrigation unpopular**:
 1. Low reliability and reduced flow of water at source
 2. Poor maintenance of canal and tributaries
 3. Poor utilisation of the irrigation potential created
 4. Increase in cultivation of water intensive crops
 5. Adoption of water intensive practices.

Pushing Irrigation to New Heights

- Among various schemes launched by the Central Government, **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)** is the most comprehensive one aiming at protective irrigation for all agricultural farms in the country. Launched in 2015-16, it has the following 4 major components:
 1. Accelerated Irrigation Benefit (AIBP)
 2. Har Khet Ko Pani (HKKP), Programme
 3. Per Drop More Crop (PDMC)
 4. Integrated Watershed Programme
- The programme has also led to **increase in productivity, vegetative cover, livelihood opportunities and household incomes causing socio-economic transformation.**
- In addition to efficient use of water, micro irrigation ensured higher productivity, reduction in labour cost, saving in power consumption, and reduction in fertilizer use.

Conservation is Another Key

- Among various **water conservation techniques**, **mulching** is a simple, 'easy-to-do', effective and comparatively low cost means that reduces water loss by checking evaporation from soil surface.
- **Mulch is any covering material**, either organic or inorganic, applied on soil surface to create a barricade which does not allow **escape of soil moisture.**
- **Plastic film lining** has proved to be an effective tool against loss of water through seepage in canals, ponds and reservoirs.
- **Rainwater harvesting and recharging groundwater** is one of the most popular strategies by which rainwater is gathered and stored for irrigation during lean periods.
- **Rainwater harvesting systems** are cost-effective and considerably easy to maintain with the additional **benefit of recharging local aquifers.**

Other important measures

- The Ministry of Jal Shakti, under its National Water Mission, launched a special awareness programme called '**SahiFasal**' in 2019 to nudge the farmers to **grow less water intensive crops in water stressed areas.**
- The major works taken up under natural resource management include construction of check dams, ponds, renovation of traditional water bodies, land development, embankment, fields bunds, field channels, plantations, contour trenches, etc.
- Encouraged by the results, many States are pooling their own resources along with **MGNREGS funds to take up water conservation works.**
- A national evaluation has found an increase in productivity, income of farmers, fodder availability acreage and significant rise in water table due to NRM works.



Way Forward

- Management of water in agriculture is vital not only for increasing productivity of crops but also for **sustainable employment and income in the agriculture sector**.
- Creating appropriate infrastructures and adopting scientific management practices will help augment water resources and improve the efficiency of the facilities.
- The future programmes and policies of the Government for irrigation development need to be focused on:
- Increasing per capita availability of water
- Reduction in cost and time of irrigation projects
- Rationalisation of water rates
- Better maintenance of works and infrastructures
- Sustainable management of all natural resources including water

07 REJUVENATION OF RIVERS

GS Syllabus Covered

GS-III: Conservation, environmental pollution and degradation, environmental impact assessment.

Introduction

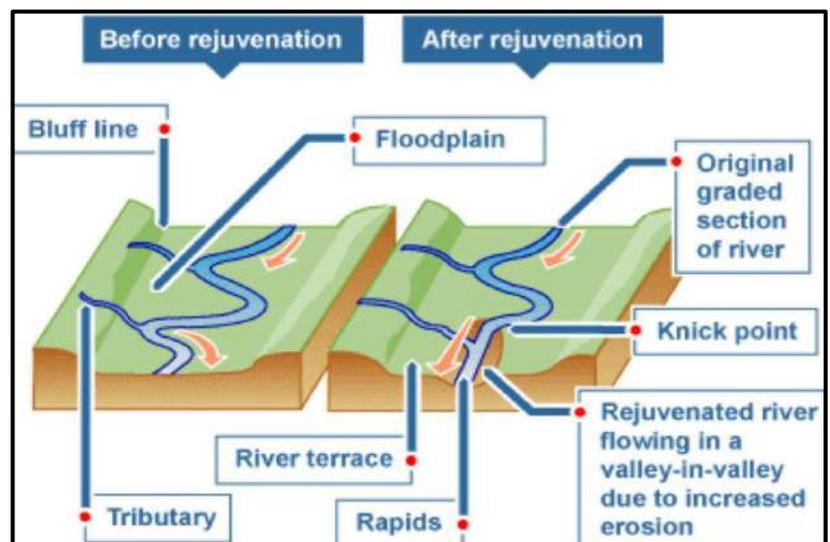
- River rejuvenation is an effort **aimed at restoring poor health of overexploited and polluted rivers** and requires an understanding of the causes for the poor health and the restoration efforts.
- Depending on the level of deterioration, river rejuvenation aims at a new sustainable healthy river ecosystem that would go a long way in **sustaining millions of livelihoods**.

Background

- Post economic liberalization in 1991, India's economy in essence remains agrarian with an estimated **65-70 percent of the population depending on farmland** for sustenance, either as a landowner or farm worker.
- It means that water for irrigation has a direct bearing on not just the survival of rural India but also plays a decisive role in the country's food security.
- While the **Green Revolution in the 1960** enabled vast improvement in **agricultural productivity**, it also unleashed a surge in groundwater exploitation by using bore wells.
- Inefficient and unsustainable farming practices and loss of forests to farmlands depleted the access to water for agricultural and household use in rural India.
- Incidentally, India ranks 120th of 122 countries in a global water quality index.

Importance of River

- Rivers are undoubtedly one of the **most ancient sources of water**.
- All the rivers and their tributaries are conventionally and dynamically the source of livelihood and help directly and indirectly in sustaining a diverse array of sectors – **agriculture, power generation, fisheries, navigation, transport and tourism, poultry and livestock farming, pottery, sand mining, art and craft, several small and medium scale industries, etc.**
- Rivers also are integral to large-scale industries, such as leather industries, pharmaceuticals, electronics, textile, paper, tanneries, fertilizer, and oil refineries.



Future threat

- It is anticipated that by 2030, 40 percent of the Indian population may not have drinking water if no effective measurement, including river rejuvenation, is executed.
- According to the '**Composite Water Management Index (CWMI) report**, nearly 600 million Indians face high-to-extreme water stress – where more than 40 percent of the annually available surface water is used every year-and about.
- The situation will likely worsen as the water demand will exceed the supply by 2050.
- The **NITI Aayog report** also stated if mitigation measures are not implemented, India can face a **6 percent loss** in its **gross domestic product (GDP) by 2050**.

Composite Water Management Index

- The National Institution for Transforming India (NITI) Aayog has developed the Composite Water Management Index (CWMI) to enable effective water management in different states. While Indian cities are grappling with water supply, the Aayog has called for "immediate action" as growing scarcity will also hit **India's food security**.

Natural method of water management

- Green Infrastructure such as **rain gardens, constructed wetlands or infiltration trenches** can help filter out pollutants before they go into the river.
- Preserve natural features, such as floodplains with a natural vegetation buffer along streams that can slow, filter, and store polluted runoff.
- Street sweeping such as picking up pollutants before they go down the catch basin and into the waterways.
- **Separating sewer and stormwater lines**, the city municipality should upgrade old infrastructure and separate storm water pipes from rainwater pipes.
- There are various adverse effects of river pollution.

Government Intervention

- The government has launched an ambitious mission to **rejuvenate the rivers**.
- The government stated that it has identified the **growing water crisis on account of depleting freshwater resources**.
- Various treatment models for **natural, agriculture and urban landscape** have been outlined in each of the delineated riverscapes.
- In agricultural landscapes it proposes agroforestry (bund and block plantations), high-density plantations, fodder plantations and plantation of fruit trees.
- In the urban landscapes a call for **riverfront development, eco-park development, industrial and educational estate plantations, and avenue plantations** have been maintained.
- The creation of an additional carbon sink of 2.5 billion to 3 billion tons equivalent through additional forest and tree cover by 2030 made just before the **2015 Paris Climate Agreement**.
- **Restoration of 26 million hectares of degraded lands by 2030** as a land degradation neutrality target under United Nations Convention to Combat Desertification and halting the biodiversity loss by **2030 under Convention on Biological Diversity and Sustainable Development Goals**.

Way forward

- Currently, in India there is an urgent need to resolve a looming water crisis that threatens to spill over to unprecedented levels.
- The situation of water crisis can threaten the socio-economic fabric unless water supply and flows are uninterruptedly distributed across the country.
- The need of the hour is to focus primarily on restoring the poor health of these overexploited and polluted water bodies.