

# OFFICERS' Pulse

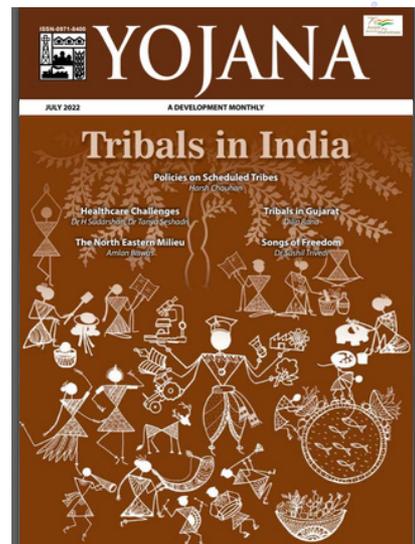
JULY 2022

IN DEPTH



The Indian EXPRESS

DownToEarth Business Standard



**Current Affairs Monthly**  
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## 1) The poor state of India's fiscal federalism

### Context

- In his last speech, in 1949, to the Constituent Assembly, **B.R. Ambedkar** sounded a note of caution about the Indian republic entering a **life of contradictions**. "In politics we will have equality and in social and economic life we will have inequality. These conflicts demanded attention: fail to do so, and those denied will blow up the structure of political democracy", he warned, though **Jawaharlal Nehru** truly believed that inequities could be addressed through his trust with the planning process.
- A **degree of centralisation in fiscal power** was required to address the concerns of socio-economic and regional disparities, he felt. This asymmetric federalism, inherent to the Constitution, was only accelerated and mutually reinforced with political centralisation in recent years.
- While States lost their capacity to generate revenue by surrendering their rights in the wake of the **Goods and Services Tax (GST) regime**, their expenditure pattern too was distorted by the Union's intrusion, particularly through its centrally sponsored schemes.

### Politicized Institution

- Historically, **India's fiscal transfer worked through two pillars**, i.e., the **Planning Commission** and the **Finance Commission**.
- But the waning of planning since the 1990s, and its **abolition in 2014**, led to the Finance Commission becoming a major means of fiscal transfer as the commission itself broadened its scope of sharing all taxes since 2000 from its original design of just

two taxes — income tax and Union excise duties.

- Today, it is often criticised that the Finance Commission has become a politicised institution with **arbitrariness and inherent bias towards the Union government**.

### Hollowing out Fiscal Capacity

- The **ability of States to finance current expenditures from their own revenues has declined** from 69% in 1955-56 to **less than 38%** in 2019-20.
- While the expenditure of the States has been shooting up, their revenues did not. They still **spend 60% of the expenditure** in the country — 85% in education and 82% in health.
- Since States cannot raise tax revenue because of curtailed indirect tax rights — subsumed in GST, except for petroleum products, electricity and alcohol — the **revenue has been stagnant at 6% of GDP in the past decade**.
- Even the increased share of devolution, mooted by the **Fourteenth Finance Commission**, from 32% to **42%**, was subverted by raising **non-divisive cess and surcharges** that go directly into the Union kitty.
  - *The Union government does not have to share cesses and surcharges with the states as they are not part of the divisible pool of taxes that needs to be shared with states.*
- This **non-divisive pool in the Centre's gross tax revenues shot up to 15.7%** in 2020 from 9.43% in 2012, shrinking the divisible pool of resources for transfers to States.

### Centrally Sponsored Schemes

- By turning States into mere implementing agencies of the

Union's schemes, their **autonomy has been curbed.**

- There are **131 centrally sponsored schemes** and States required to share a part of the cost. They spend about 25% to 40% as matching grants at the expense of their priorities.
- These schemes, driven by the **one-size-fits-all approach**, are given precedence over State schemes, undermining the electorally mandated democratic politics of States.
- The diversion of a State's own funds to centrally sponsored schemes, thereby depleting resources for its own schemes, violates constitutional provision.

### Deepening Inequality

- This political centralisation has only deepened inequality. The **World Inequality Report**, (released by the World Inequality Lab) estimates that the **poorest half of the population in India has less than 6% of the wealth while the top 10% nearly grab two-third of it.**
- This is one of the consequences of India's **poor record of taxing its rich.** Its **tax-GDP ratio** has been one of the lowest in the world — **17%** of which is well below the average ratios of emerging market economies and OECD countries' about 21% and 34%, respectively.
- If taxing on agriculture income was resisted in the 1970s when the sector prospered, corporate tax has been slashed by successive governments thanks to a pro-business turn in the 1990s.
- Also, India's **income tax base has been very narrow. Indirect tax still accounts for about 50% of total taxes.**

### Conclusion

- India's fiscal federalism driven by political centralisation has deepened socio-economic inequality, belying the dreams of the founding fathers who saw a cure for such inequities in planning. It has not altered inter-state disparities either.
- If there was anything that alleviated poverty, reduced inequality and improved the well-being of people, these were the time-tested schemes of State governments, but they are now under threat.

## 2) A plan that is much more than just planting trees

### Context

- India celebrates Van Mahotsav ("celebrate the forest") as a one-week tree-planting festival in the first week of July every year.
- In today's world, forests need to be celebrated more than ever before. Simultaneously, more forests need to be created and restored. However, there is much debate about the efforts around tree planting.

### Forest Landscape Restoration

- According to the **International Union for Conservation of Nature (IUCN)**, **deforestation and forest degradation contribute around 12% of global greenhouse gas emissions.**
- The **total area occupied by primary forests in India has decreased by 3.6%.**
- Typically, governments have relied on **afforestation and reforestation** as a means of establishing trees on non-treed land. These strategies have now evolved. The focus is now on **forest landscape restoration** — the process of regaining ecological functionality and improving human

welfare across deforested or degraded forest landscapes. This approach keeps in mind multiple land uses and people's needs in the short and long terms.

- Forest landscape restoration seeks to **involve communities** in the process of designing and executing **mutually advantageous interventions** for the upgradation of landscapes. Nearly two billion hectares of degraded land in the world (and 140 million hectares in India) have scope for potential restoration as forest land.
- A crucial aspect of this process is to **ensure the diversity of the species while planting trees**. **Natural forests with diverse native tree species** are more efficient in sequestering carbon than monoculture tree plantations. An international study published earlier this year in the journal, *Science*, found that diversifying species in forest plantations has a **positive impact on the quality of the forests**.
- In Punjab, for instance, the community is proactively planting native species such as Jhand (*Prosopis cineraria*), Desi Kikar (*Acacia nilotica*) and Pharwan (*Tamarix aphylla*), which are resilient and acclimatised. And most of these saplings have a **high survival rate of 90%**, a vital requirement for sustainable reforestation activities.
- Planting diverse species is also **healthier for local communities and their livelihoods**.

### Benefits of Tree Planting

- Tree planting comes with **varied environmental and ecological benefits**. Forests are integral in **regulating ecosystems, influencing the carbon cycle and**

**mitigating the effects of climate change.**

- Annually, **forests absorb roughly 2.6 billion tonnes of carbon dioxide**. This absorption includes nearly 33% of the carbon dioxide released from burning fossil fuels.
- But beyond the environmental benefits, there is the **human dimension** that is at the front and centre. Millions of lives and livelihoods are intertwined with our forests. Forests are a boon for local communities and their livelihoods by functioning as a **resource base for goods and services**.
- Forest ecosystems **enrich soil fertility and water availability, enhancing agricultural productivity, and in turn the rural economy**.
- Tree planting **prevents erosion and stems flooding**. Sustainable forest crops **reduce food insecurity and empower women**, allowing them to gain access to more nutritional diets and new income streams.
- **Agroforestry lessens rural-to-urban migration** and contributes to an **increase in resources and household income**. Planting trees is deeply linked to the **'wholistic' well-being of all individuals, the community, and the planet**.

### Initiatives & Challenges

- The span **2021-2030** has been declared as the **UN Decade on Ecosystem Restoration**, emphasising efforts to restore degraded terrestrial ecosystems including forests.
- In 2011, the **Bonn Challenge** was launched with a global goal to **restore 150 million hectares of degraded and deforested landscapes by 2020 and 350 million hectares by 2030**. India

joined the Bonn Challenge in 2015, pledging to **restore 26 million hectares of degraded and deforested land by 2030.**

- There are a myriad of government programmes such as **Compensatory Afforestation, the National Afforestation Programme, the National Mission for a Green India (Green India Mission), the Nagar Van scheme and the Forest Fire Prevention and Management Scheme.**
- There is a spotlight on youth via the **Green Skill Development Programme for youth** who aspire to attain employment in the environment and forest sectors.
- However, forest restoration in India faces hurdles in terms of the **identification of areas for restoration, a lack of importance accorded to research and scientific strategies in tree planting, stakeholders' conflicts of interest, and financing.**

#### Way Forward

- To be successful, forest landscape restoration must be implemented proactively, bolstering landscapes and forest ecosystems to be durable and adjustable in the face of future challenges and societal needs.
- It also needs the **involvement and the alignment of a host of stakeholders** including the community, champions, government and landowners.
- The restoration of natural forest ecosystems can be strengthened through **participatory governance by engaging stakeholders** —as in the case of **Punjab.**
- Vulnerable forest-dependent communities should be factored in, and any effort should be tailored to the local socio-economic context and landscape history of a region.

### 3) A community and a health issue of concern

#### Context

- Despite the reading down of Section 377 of IPC by the Supreme Court (thereby decriminalising same-sex relations between consenting adults in the Navtej Singh Johar case), the NALSA judgment (under which the Supreme Court for the very first time recognised transgendered persons as a “third gender”) as also successive progressive movements, India’s class, caste and regionally diverse LGBTQIA++ communities remain at risk of life-long mental illnesses and challenges.
- This can take the form of severe mental illness or transient and long standing dysfunctional harmful behaviours.

#### Stigma and Suffering

- This is caused by **life-long dissonance, deep-rooted stigma, discrimination and often abuse**, that the community experiences. It often leads to extreme distress and poor self-worth, resulting in self-hate and suffering.
- Sexual orientation and gender identity are rarely discussed in our social, educational or familial environments, and if ever done, these discussions are **stigmatising.**
- While the mental health needs of the LGBTQIA++ communities are not different from others, their identities, social contexts and the discrimination give them stressors that **impact their mental health**, relentlessly, from a young age.
- **LGBTQIA++ youth** are likely to suffer **1.75 times more anxiety and depression** than the rest of society while the **transgender community** is even more vulnerable as its members suffer

### 2.4 times higher anxiety and depression.

- In India and elsewhere, from an early age, everyone is pressured, openly or structurally, into accepting gender roles and sexual identities. Those who do not comply are bullied, abused, and assaulted under the pretence of correcting them.

### Inadequate Health Services

- A large majority of the psychiatrists in India still consider diverse sexual orientations and gender identities as a **disorder** and practice 'correctional therapy'.
- India needs **comprehensive long-term solutions** that make queer mental health a priority and address community needs. These solutions must engage with all stakeholders, including educational institutions, communities, health-care providers, mental health professionals, police personnel and families who are often a key source of mental health stress.
- This is not easy as this is not a priority for the Government and funding agencies, and is also neglected in society.

### Awareness Building

- One way to change the status quo is to **ensure that every aspect of mental health work in India must include aspects of queer mental health issues**, especially in schools and universities, to destigmatise diverse gender and sexual identities.
- A key aspect is building **self-care skills among queer adolescents and youth**. Strong components of behaviour change and awareness and also building capacity are important ways to build agency among these youth populations.
- The society needs a **movement on queer mental health** guided by

non-discrimination and public awareness in order to change social attitudes. **Community building** is an important part of improving the mental health for LGBTQIA++ people.

- We need to create **supportive, safe and educative spaces, access points for health care and information on mental health**. The challenge is on how to address these issues in a holistic way when institutions are so queerphobic.

### Conclusion

- Ignoring the mental health needs of LGBTQIA++ communities comes at a great cost to them and to society.
- Without addressing both the preventive and support aspects of the mental health of LGBTQIA++ people we will compound an already neglected problem of mental illness that will be hard to handle in the future. This would not just be injustice, but also a crisis created by deliberate neglect.

## 4) India needs to scale up direct nutrition interventions

### Context

- It is disconcerting that even after seven decades of Independence, India is afflicted by public health issues such as **child malnutrition (35.5% stunted, 67.1% anaemic) attributing to 68.2% of under-five child mortality**.
- Poor nutrition not only adversely impacts health and survival but also leads to **diminished learning capacity, and poor school performance**.

### POSHAN Abhiyaan

- The Government is giving an aggressive push to the National Nutrition Mission (NNM), rebranding it the **Prime Minister's Overarching Scheme for Holistic Nutrition, or POSHAN Abhiyaan**.

- It has the **objective of reducing malnutrition in women, children and adolescent girls.**
- The **Ministry of Women and Child (MWCD)** continues to be the nodal Ministry with a vision to align different ministries to work in tandem on the **“window of opportunity” of the first 1,000 days in life** (270 days of pregnancy and 730 days; 0-24 months).
- POSHAN Abhiyaan rightly places a special emphasis on selected high impact essential nutrition interventions, combined with nutrition-sensitive interventions, which indirectly impact mother, infant and young child nutrition, such as improving coverage of maternal-child health services, enhancing women empowerment, availability, and access to improved water, sanitation, and hygiene and enhancing homestead food production for a diversified diet.

#### NFHS Survey

- Data from the **National Family Health Survey (NFHS)-5 2019-21**, as compared to NFHS-4 2015-16, reveals a **substantial improvement** in a period of four to five years in several proxy **indicators of women’s empowerment.**
- There is a substantial increase in antenatal service attendance (58.6 to 70.0%); women having their own saving bank accounts (63.0 to 78.6%); women owning mobile phones that they themselves use (45.9 % to 54.0%); women married before 18 years of age (26.8 % to 23.3 %); women with 10 or more years of schooling (35.7% to 41.0%), and access to clean fuel for cooking (43.8 % to 68.6%).
- But, during this period, the country has not progressed well in terms of **direct nutrition interventions.**

- **Preconception nutrition, maternal nutrition, and appropriate infant and child feeding** remain to be effectively addressed.
- India has **20% to 30% undernutrition even in the first six months of life** when exclusive breastfeeding is the only nourishment required. Neither maternal nutrition care interventions nor infant and young child feeding practices have shown the desired improvement. A **maternal nutrition policy** is still awaited.

#### Need for Maternal Nutrition Policy

- Despite a policy on infant and young child feeding, and a ban on sale of commercial milk for infant feeding, there has **only been a marginal improvement in the practice of exclusive breastfeeding (EBF).**
- Creating awareness on EBF, promoting the technique of appropriate holding, latching and manually emptying the breast are crucial for the optimal transfer of breast milk to a baby.
- **Well-planned breastfeeding counselling** given to pregnant women during antenatal checkup prior to delivery and in follow up frequent home visits makes a significant difference.

#### Complementary Feeding Practices

- NFHS-5 also confirms a **gap in another nutrition intervention — complementary feeding practices**, i.e., complementing semi-solid feeding with continuation of breast milk from six months onwards.
- Poor complementary feeding is often due to a **lack of awareness** to start feeding at six to eight months, what and how to feed appropriately

family food items, how frequently, and in what quantity.

- The fact that **20% of children in higher socio- economic groups are also stunted** indicates poor knowledge in food selection and feeding practices and a child's ability to swallow mashed feed.

### Revisiting ICDS

- There is a pressing need to revisit the system spearheading POSHAN and overhaul it to remove any flaws in its implementation.
- There is a need to revisit the nodal system for nutrition programmes existing since 1975, the Integrated Child Development Scheme (ICDS) under the Ministry of Women and Child and examine whether it is the right system for reaching mother-child in the first 1000 days of life.
- There is also a need to explore whether there is an **alternative way to distribute the ICDS supplied supplementary nutrition** as Take-Home Ration packets through the Public Distribution (PDS) and free the anganwadi workers of the ICDS to undertake timely counselling on appropriate maternal and child feeding practices.

### Way Forward

- The government needs to systematically review the status, and develop and test a new system that would combine the human resource of ICDS and health from village to district and State levels.
- This would address the mismatch that exists on focussing on delivery of services in the first 1000 days of life for preventing child undernutrition by having an effective accountable system.
- In addition to this, **mass media or TV shows** could organise discourses on care in the first 1,000

days to reach mothers outside the public health system.

## 5) The President is not a mere rubber stamp

### Context

- Droupadi Murmu sworn in as the 15th President of India.

### Debates in Constituent Assembly

- There was a great deal of debate in the Constituent Assembly on the post of President. The main question debated therein was whether India should have a **directly elected President or an indirectly elected one**. The Assembly opted for an **indirectly elected President**.
- **Dr. B.R. Ambedkar** said: "Our President is merely a nominal figurehead. He has no discretion; he has no powers of administration at all."
- **Article 53** of the Constitution says that "the executive power of the Union shall be vested in the President and shall be exercised by him either directly or through officers subordinate to him in accordance with this Constitution."
- However, the **President exercises these powers only on the aid and the advice of the Council of Ministers**.

### Method of Election

- It is an indirect election in the sense that the people do not directly elect the President.
- Under **Article 54**, the President is elected by an **electoral college** consisting of only the elected members of both Houses of Parliament and the elected members of the State and Union Territory Assemblies.
- However, a matter of importance in this context is the vote value of Members of the Legislative Assemblies (MLAs) and the formula

for its computation. This value is calculated by first dividing the total population of the State (as per the 1971 Census) by the total strength of the Assembly, and then the quotient is divided by one thousand. The result is the value of a vote.

### People and their Role

- The point is that in the computation of the value, the **population of the State figures in a significant way**. In other words, the population of the country is a crucial factor in the election of the President, which means the **people's presence in the process of electing the President is very much visible**.
- This gives a wider base to the President than a mere vote by the legislators on the basis of one member, one vote. This also gives the President a **greater moral authority**. So, the Indian President is not and cannot be a mere rubber stamp.
- He/She does not directly exercise the executive authority of the Union, but he can **disagree with the decision of the Council of Ministers, caution them, counsel them, and so on**.
- The President can ask the Cabinet to **reconsider its decisions**. However, if the Cabinet, after such reconsideration, sends the same proposal back without any change, the President will have to sign it. That is because under the Cabinet system of government, it is the Cabinet which is responsible for the government's decisions. The President is in no way personally responsible for those decisions which he or she approves.

### Not a Rubber Stamp

- The Constitution of India wants the **President to be vigilant and responsive**, and gives the freedom

to him or her to take a broader view of things uninfluenced by the narrow political view of the executive.

- This point becomes clearer when we take a look at the **oath the President takes before entering office**. The oath contains **two solemn promises**. First, the **President shall preserve, protect and defend the Constitution**. Second, the **President shall devote himself or herself to the service and the well-being of the people of India**.
- There were Presidents such as Rajendra Prasad and Sarvepalli Radhakrishnan who openly differed with the government on certain policy issues and could exert tremendous influence on the government.

### Conclusion

- Thus, it is possible for a President to disagree with the government or intervene on behalf of the citizenry against the tyranny of the executive and persuade it to give up its ways. The solemn oath the President takes requires him or her to do it.

## 6) The scale of municipal finances is inadequate

### Context

- The **health of municipal finances** is a critical element of municipal governance which will determine whether India realises her economic and developmental promise.
- The **74th Constitution Amendment Act** was passed in 1992 mandating the setting up and devolution of powers to urban local bodies (ULBs) as the lowest unit of governance in cities and towns.
- Constitutional provisions were made for ULBs' fiscal empowerment. However, three

decades since, growing fiscal deficits, constraints in tax base expansion, and weakening of institutional mechanisms that enable resource mobilisation remain challenges. Revenue losses after implementation of the Goods and Services Tax (GST) and the pandemic have exacerbated the situation.

### Sources of Revenue

- Recently, the Indian Institute for Human Settlements (IIHS) analysed data from 80 ULBs across 24 States between 2012-13 and 2016-17 to understand ULB finance and spending, and found some key trends.
- The first is that **ULBs' own sources of revenue were less than half of their total revenue**, with large untapped potential. The ULBs' **key revenue sources** are taxes, fees, fines and charges, and transfers from Central and State governments, which are known as intergovernmental transfers (IGTs).
- The **share of own revenue** (including revenue from taxes on property and advertisements, and non-tax revenue from user charges and fees from building permissions and trade licencing) to total revenue is an **important indicator of ULBs' fiscal health and autonomy**.
- This ratio reflects the ULBs' ability to use the sources they are entitled to tap, and their dependency on IGTs. Cities with a higher share of their own revenue are more financially self-sustaining.

### Share of Own Revenue

- The study found that the **ULBs' own revenue was 47% of their total revenue**. Of this, **tax revenue** was the largest component: around 29% of the total. There was a 7%

increase in own revenue from 2012-13 to 2016-17, but ULBs still lacked revenue buoyancy as their **share in GDP of own revenue was only 0.5%** for the five-year period.

- **Property tax**, the single largest contributor to ULBs' own revenue, accounted for only about 0.15% of the GDP. The **corresponding figures for developing and developed countries were significantly higher** (about 0.6% and 1%, respectively) indicating that this is not being harnessed to potential in India.
- Estimates suggest that Indian ULBs' can achieve these levels. It is **essential that ULBs leverage their own revenue-raising powers** to be fiscally sustainable and empowered and have better amenities and quality of service delivery.

### Dependent on IGT's

- The study noted that **many ULBs were highly dependent on IGTs**. Transfers from the Central government are as stipulated by the Central Finance Commissions and through grants towards specific reforms, while State government transfers are as grants-in-aid and devolution of State's collection of local taxes.
- Stable and predictable IGTs are particularly important since ULBs' own revenue collection is inadequate. The scale of IGTs in India remained at around **0.5% of GDP, which is far lower than the international average of 2% to 5% of GDP**.
- This can be improved by increasing the revenue assigned to ULBs from the State governments, and by allocating a share of the State and Centre's GST proceeds to ULBs. IGTs can also incentivise ULBs to

deliver better service quality and maintain fiscal discipline.

### Operations and Maintenance

- The study revealed that **Operations and maintenance (O&M) expenses are on the increase but still inadequate.** O&M expenses are crucial for the upkeep of infrastructure and for maintaining quality of service delivery.
- For instance, O&M expenses incurred in 2016-17 covered only around a fifth of the requirement forecast by the High-Powered Expert Committee for estimating the investment requirements for urban infrastructure services.
- O&M expenses should ideally be covered through **user charges**, but **total non-tax revenues, of which user charges are a part, are insufficient to meet current O&M expenses.** Cost recovery for services such as water supply, solid waste management, transportation and waste water management are thus clearly inadequate.
- The non-tax revenues were short of the O&M expenditure by around 20%, and this shortfall contributed to the increasing revenue deficit in ULBs. **Increasing cost recovery levels** through improved user charge regimes would not only improve services but also contribute to the financial vitality of ULBs.

### Conclusion

- The scale of municipal finances in India is undoubtedly inadequate. A ULB's own revenue resources are far below the estimated potential.
- **Tapping into property taxes, other land-based resources and user charges** are all ways to improve the revenue of a ULB.
- IGTs assume significance in the fiscal composition of ULBs, and a

stable support from Central and State governments is crucial till ULBs improve their own revenues.

- Measures need to be made to also cover O&M expenses of a ULB for better infrastructure and service.

## 7) India's climate imperative Context

- The heatwaves that scorched Rajasthan, Uttar Pradesh, Gujarat, and New Delhi this year; torrential downpours in south India in 2021; and the super cyclone Amphan that battered West Bengal and Odisha in 2020 are symbols of man-made climate change.
- But India, like elsewhere, still attributes these catastrophes to the wrath of mother nature rather than anthropogenic global warming.

### Increasing Impacts of Climate Change

- **Temperatures over the Indian Ocean have risen by over 1°C** since the 1950s, increasing extreme weather events. **India is the fourth worst-hit in climate migration.**
- **Heat waves** in India have claimed an estimated 17,000 lives since the 1970s.
- **Labour losses** from rising heat, by one estimate, could reach ₹1.6 lakh crore annually if global warming exceeds 2°C, with India among the hardest hit.
- India needs a **two-part approach**: one, to **adapt to climate impacts by building resilience** against weather extremes, and two, to **mitigate environmental destruction** to prevent climate change from becoming more lethal.

### Climate Resilience

- Extreme heat waves hit swathes of India. Heatwaves are aggravated by **deforestation and land degradation**, which also **exacerbate fires.**

- Agriculture, being water-intensive, does not do well in heat wave-prone areas. A solution is to **promote agricultural practices which are not water-intensive and to support afforestation** that has a salutary effect on warming.
  - **Climate-resilient agriculture** calls for diversification — for example, the cultivation of multiple crops on the same farm. There will need to be more **localised food production**.
  - **Financial transfers** can be targeted to help farmers plant trees and buy equipment — for example, for drip irrigation that reduces heavy water usage.
  - **Weather based crop insurance schemes** can transfer some of the risks of extreme heat faced by industrial, construction and agricultural workers to insurers.
  - Floods and storms are worsened by vast **sea ingress and coastline erosion** in the low-lying areas in the south. Southern States need **stronger guidelines to avoid construction in locations with drainages**.
  - It is vital to **map flood-risk zones** to manage vulnerable regions.
- Environment Impact Assessments** must be mandatory for commercial projects.
- **Kerala** has some flood-resistant houses constructed on pillars. Communities can build **round-shaped houses**, considering optimum aerodynamic orientation to reduce the strength of the winds.
  - **Roofs with multiple slopes** can stand well in strong winds, and **central shafts** reduce wind pressure on the roof by sucking in air from outside.

### Arresting Runaway Climate Change

- Adaptation alone will not slow climate damages if the warming of

the sea level temperatures is not confronted. Leading emitters, including India, **must move away from fossil fuels**. But climate mitigation everywhere is painfully slow, because of a **lack of political will**.

- India has made slow progress in choosing **2070** as its **target for net zero emissions**. Meanwhile, a big part of climate action lies in **protecting and expanding forest coverage**. Regulation needs to be tightened and enforced to ensure forest protection while acquiring land.
- **Management of dams** can exacerbate glacier lake outbursts and floods. Nearly 295 dams in India are more than 100 years old and need repairs. In stemming landslides in Uttarakhand, **regulations must stop the building of dams on steep slopes and eco-fragile areas, as well as the dynamiting of hills, sand mining, and quarrying**.
- Dams in the southern States can moderate floods, but only if operated year-round to anticipate the need to control flows during floods.

### Way Forward

- **India's share in disaster management should be raised to 2.5% of GDP**.
- **Climate finance** is most suited for large-scale global funding from the World Bank, the International Monetary Fund, and the Asian Development Bank. But **smaller-scale financing** can also be vital: the **World Food Programme's funding for Nepal and Bhutan** for community-based adaptation and agricultural resilience for vulnerable communities provides an interesting model.

- **States can tap into the Union government's resources**, financial and technological, from early warning meteorological systems to centrally sponsored climate schemes.
- **MGNREGA funds** can be used for climate adaptation in agriculture, waste management and livelihoods. States could make **compensatory payment to local self-government resources** being used for climate adaptation.
- For public pressure to drive climate action, we need to consider climate catastrophes as largely man-made.

## 8) Diabetes: An Un-negotiated Menace

### About Diabetes

- Diabetes is a chronic disease that occurs **when the pancreas is no longer able to make insulin, or when the body cannot make good use of the insulin it produces.**
- Insulin is a hormone made by the pancreas that acts like a key to let glucose from the food we eat pass from the bloodstream into the cells in the body to produce energy. All carbohydrate foods are broken down into glucose in the blood. **Insulin helps glucose get into the cells.**
- Not being able to produce insulin or use it effectively leads to raised glucose levels in the blood (known as **hyperglycaemia**). Over the long-term high glucose levels are associated with damage to the body and failure of various organs and tissues.

### Types of Diabetes

- There are three main types of diabetes – **type 1, type 2 and gestational.**
  - **Type 1 diabetes** can develop at any age, but occurs **most**

**frequently in children and adolescents.** When you have type 1 diabetes, your **body produces very little or no insulin**, which means that you need daily insulin injections to maintain blood glucose levels under control. Scientists think type 1 diabetes is caused by **genes and environmental factors**, such as viruses, that might trigger the disease.

- **Type 2 diabetes is more common in adults and accounts for around 90% of all diabetes cases.** When you have type 2 diabetes, **your body does not make good use of the insulin that it produces.** Type 2 diabetes is caused by several factors, including **lifestyle factors and genes.** The cornerstone of type 2 diabetes treatment is a healthy lifestyle, including increased physical activity and healthy diet. However, over time most people with type 2 diabetes will require **oral drugs and/or insulin** to keep their blood glucose levels under control.
- **Gestational diabetes (GDM)** is a type of diabetes that consists of high blood glucose **during pregnancy** and is associated with complications to both mother and child. GDM **usually disappears after pregnancy** but women affected and their children are at increased risk of developing type 2 diabetes later in life.

### Current Scenario

- **India** is often referred to as the **diabetes capital of the world.** India already has a significant health burden caused by diabetes and estimates suggest 77 million

adults have diabetes and this number is expected to almost double to 134 million by 2045.

- Over the past decade, cases of both Type 1 and Type 2 diabetes have seen an increase among children and adolescents. **India has the highest estimated prevalence of Type 1 diabetes in people under 20 years** (229,400) followed by the US (157,900) and Brazil (92,300).
- Research shows that **Covid-19 has also been a big factor for the rise in Type 1 diabetes** cases since the onset of the pandemic as SARS-CoV-2 virus can destroy insulin-producing cells.

### Type 2 diabetes soaring among youth

- More than Type 1, the **exponential rise of Type 2 diabetes among younger populations** warrants concern because the **condition is preventable**.
- A new research has warned that **more than half of men (55%) and some two thirds (65%) of women aged 20 years in India will likely develop diabetes**, with most of those cases (around 95%) likely to be type 2 diabetes.
- The **rise in Type 2 diabetes is parallel to the increase in obesity among children**. As per the World Obesity Federation, India has a **childhood obesity risk score of 4/11 (with 11 being the highest risk)**, and is likely to miss the World Health Organization's target of **"no increase in childhood obesity prevalence by 2025"**.
- The federation says at current rate obesity will increase to 6.2% among adolescents and 10.8% among children aged 5-9 by 2030.

### Impact on Demographic

- Doctors describe diabetes as **"accelerated ageing"** which may

lead to a decrease in life expectancy.

- Greater prevalence of diabetes puts the **younger populations at higher risk of mortality and morbidity**.
- **Urbanization, decreasing diet quality and decreased levels of physical activity** are all contributing to this hidden epidemic in India.
- Such high probabilities of developing diabetes will have severely negative implications for India's already strained health system and also out-of-pocket expenditure on diabetes treatment by patients.

### Way Forward

- The first step is an **increased focus on screening**. There are no guidelines to screen for Type 1 diabetes. It is typically diagnosed on the basis of severity and symptoms, which can appear suddenly.
- With Type 2 diabetes, onset is insidious and diagnosis can be missed for years. Currently, screening is done for people above 30. A 2021 study argues this bar **needs to be reduced to 25 years**.
- **Childhood and adolescent obesity** also needs attention, due to which there is a steady rise in Type 2 diabetes in these age groups.

## 9) Spread of Miyawaki based Forests

### What is Miyawaki based Forest?

- Miyawaki is a **Japanese technique of growing dense plantations in a short time**. This method originated in Japan and is now increasingly adopted in other parts of the world. It is named after the Japanese botanist and plant ecologist **Akira Miyawaki**.

- With this method of plantation, an **urban forest can grow within a short span of 20-30 years** while a conventional forest takes around 200-300 years to grow naturally.
- In the Miyawaki technique, **various native species of plants are planted close to each other** so that the greens receive sunlight only from the top and grow upwards rather than sideways. As a result, the plantation becomes approximately **30 times denser, grows 10 times faster and becomes maintenance-free after a span of 3 years.**

### Miyawaki Process

- The **native trees** of the region are identified and divided into **four layers** namely **shrub, sub-tree, tree, and canopy.**
- The quality of soil is analysed & biomass which would help enhance the perforation capacity, water retention capacity, & nutrients in it, is mixed with it.
- A mound is built with the soil and the **seeds are planted at a very high density** of three to five saplings per square meter.
- The ground should be covered with a **thick layer of mulch to hold the moisture.**
- Such fast-growing plantations can be used for wood lots, recreational uses like bird watching, bushwalking, and wildflower appreciation.

### A Reality Check

- In theory, the Miyawaki method offers a **holistic solution to several urban woes, including the heat island effect, air and noise pollution and land crunch for greenery.**
- This afforestation method is fast gaining attention across the country, from civic bodies and

forest department officials to private groups and nonprofits.

- Some experts suggest that cities like Bengaluru, Chennai and Hyderabad that are cramped with concrete jungle, Miyawaki forests are a great way of not only achieving **quick greenery** but also **mitigating carbon emissions, purifying air with more oxygen and restoring soil and biodiversity.**

### What are the concerns related to the Miyawaki method?

#### A Woodland at Best:

- Miyawaki plantation **does not fit the definition of natural forest**, especially in India, which has hundreds of forest types spread across geographies.
- **Natural forest formation process is slow** as trees grow at their pace, enabling the soil conditions to change, microbes, earthworms and insects to flourish and host a wide range of biodiversity. A natural forest **also allows a food chain to be established** but such is not the case with Miyawaki technique.
- People who have implemented this method mention that the number of reptiles has increased in their area as predators such as mongoose or birds of prey cannot enter the dense vegetation.

#### Other Threats:

- It is found that the Miyawaki technique is an **effective solution for places like Punjab which have less forest cover** and is the best solution to **bring back nutrients and life to the soil**, damaged by excessive use of pesticides and insecticides during farming.
- However, such plantations in arid areas like Punjab and Rajasthan will **require copious quantities of**

water, prompting more groundwater extraction, unless wastewater is utilized for watering the saplings.

- Besides, **in case of a drought or intense condition, Miyawaki forests in arid areas can become more susceptible to catching fire.** In such a scenario, all the carbon captured by the plants will go up in smoke along with the immense amount of water and money invested in the forest.
- Experts suggest that **leaving the land alone or introducing natural ecological restoration** will help the environment in multiple ways and enable more diversity than Miyawaki woodland. A degrading land can start taking shape by hosting biodiversity in three to five years and sequestering more carbon, which is the objective of tree plantation.

#### **Not a Sustainable Solution:**

- As per studies carried out by environmentalists in Delhi, the only real outcome of Miyawaki method is a quick green patch in a relatively short time. However, apart from having an aesthetic value or a superficial feeling of contributing towards nature, the plantations do not serve their true purpose.
- The study highlights that **if the objective is to restore a degraded tract or in any sense to add richness or diversity to a habitat, then Miyawaki forests are not even close to being a solution.**

#### **Conclusion**

- There is a need to better understand the local ecology before undertaking such greening exercises as it will take time to understand long-term effects of Miyawaki forests on ecology.

## **10) Assam Floods**

### **Context**

- Assam has been ravaged by two bouts of floods in quick succession.

### **Geomorphological Factors**

- Assam's geologic history makes it naturally susceptible to floods. The state is traversed by two mighty river systems—**the Brahmaputra in the north and the Barak in the south.**
- Assam is located at the **easternmost part of the Indian tectonic plate.** This is also the point where the Indian tectonic plate has been thrusting underneath the Eurasian plate, creating a **subduction zone and the Himalayas.**
- This means this land of plains and river valleys is surrounded by high hills and steep gorges, through which the Brahmaputra, Barak and their 44 major tributaries flow into the state.
- The **heavy siltation** and the role it plays in changing the rivers' flood plains makes the situation worse.
- Since Assam also receives **heavy rainfall** due to its unique geography— **the southwest monsoon winds take a swirl over the state** before moving westward and causing heavy rainfall as Assam is surrounded by the hills of Arunachal Pradesh, Meghalaya and Nagaland—the rivers overflow the banks almost around the same time, causing widespread floods.



### The Root Cause

#### Barriers Erased:

- Trees usually act as a natural protection against floods, more so in hills, as their root systems bind the soil and along with other vegetation reduce surface run-off that can add to the floods. Over the last two decades, **tree cover loss** in many districts of Assam has been drastic.
- Between 2000 and 2021, the state lost tree cover around 287,000 hectares (ha), which is a 10% decrease from the 2000 level. The resultant **increase in soil erosion** in these areas deposits sand and debris that **raises the riverbeds and intensifies the floods** as the tributaries flow into Assam.
- **Wetlands or beels** in Assam are another source of natural protection against floods. These act as sponges, breaking the flow of the floodwaters. Many of these ecologically important natural resources have deteriorated in recent years.
- **Rapid urbanization, industrial activities and lack of government**

**intervention** are major factors for the degradation.

#### Change in Course of River:

- Another cause for the floods is the rapid change in the courses of rivers. An **increase in heavy rainfall in shorter spans of time** can alter the natural flow of the river.
- This trend is clearly visible in at least two major tributaries of the Brahmaputra: **Subansiri and Dibang**. They have drastically altered their course in recent years uprooting several villages along the way.
- Evidence from maps along with records of flood history data show that **recurring large floods have breached the embankments, causing erosion of banks and changes in the river's course**.

#### Soaked and Sceptical

- Other than the unique geomorphology, **human-induced factors** have made Assam devastatingly flood prone. This factor is the **changes in climate**, particularly in rainfall patterns.
- According to latest data with **NITI Aayog, Assam is home to 10 of the top 13 districts in India that are most vulnerable to climate change**.
- Assam's State Action Plan on Climate Change identifies **change in rainfall patterns** as one of the major causes of the state's vulnerability to climate change. **Vulnerability and erratic monsoon** have made 40% of the state prone to floods.
- Thus, the combination of climatic and non climatic factors make Assam extremely vulnerable to climate change.

#### Way Forward

- The yearly flood situation must be used as a chance to introduce a

paradigm shift in flood management. **Moving from hazard avoidance to disaster risk minimization** is necessary.

- It would be necessary to **shift the emphasis from just concentrating on preventing floods through structural interventions and river engineering**, such as the construction of embankments, to **concentrating on the causes of the many dimensions of vulnerability**.
- **Training programmes for the community organisations** can be funded by the National Rural Livelihoods Mission. These organisations could serve as a **community's first line of defence** in disaster-prone locations.
- **Year-round mission mode development efforts** are necessary to make sure that communities don't simply survive floods but also prosper in spite of them. To enhance the general standard of living of rural residents, a **variety of development initiatives**, including new forms of embankment management, would be necessary.
- As extreme weather events become more frequent and intense over the next several years, **early warning systems** need to be strengthened.
- **Well-trained people** who are aware of the interdisciplinarity necessary to manage flood risk and foster resilience to handle management issues. This group of professional cadres could be based at the district level, collaborating closely with the district administration, the District Disaster Management Agency, and the several line departments.
- There should be **coordination between several departments**,

such as the ones for Agriculture, Animal Husbandry, Education, Public Health Engineering Department (PHED), and Health.

- Every village should have **access to elevated shelters**, which would help the region establish resilience.

## 11) Malnutrition: A surging menace

### Context

- Hunger has surged worldwide, and those who get to eat, are not eating healthy food. As a result, there is now a **high prevalence of malnutrition**, particularly undernourishment.
  - Malnutrition refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients.
  - The term malnutrition covers **2 broad groups of conditions**. One is '**undernutrition**'— which includes stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies or insufficiencies (a lack of important vitamins and minerals). The other is **overweight, obesity and diet-related noncommunicable diseases** (such as heart disease, stroke, diabetes, and cancer).

### Worrying Trend

- Malnutrition is a **foundational challenge**: a malnourished child would grow up to be an unhealthy adult. A country with a high level of malnourishment, thus, will have an unhealthy population.
- The **Covid-19 pandemic and the Russia-Ukraine war** have stalled the global progress on achieving zero-hunger and malnourishment targets under the UN's Sustainable

Development Goals (SDGs) for 2030.

- In 2021, **nearly 30% of the world's population, 2.3 billion, was food insecure.** This was an increase of 350 million people over 2019. This **lack of access to food or inability to afford food has a direct link with the level of malnutrition.**
- As per the UN's latest "**State of Food Security and Nutrition in the World**" report, nearly every 10th person in the world does not have access to proper nourishment.
- The UN report says that the prevalence of undernourishment in the world has gone up from 8% in 2019 to 9.8% in 2021. In 2030, around 8% of the global population will be malnourished.

### Challenges

- At the core of this worrying trend is the **affordability of quality foods**, a crucial link between food security and nutrition.
- The UN report states that the effects of inflation in consumer food prices stemming from the economic impacts of Covid-19 pandemic and the measures put in place to contain it, have **increased the costs and the unaffordability of a healthy diet** around the world.
- In addition to this, there is a **constant dip in personal income** in the past two years. Around 95% of countries have reported a dip in the per capita income because of the pandemic.
- In the face of such economic constraints, people would have just managed with bare minimum food, or even compromising on the quantity of it. So, both hunger and malnutrition have further precipitated.

### Conclusion

- Malnutrition is a development challenge that will haunt us in future because a country cannot base its growth on an unhealthy workforce. Rather, the disease burden of a malnourished generation will be too high for the country to fund and sustain. This makes the availability and affordability of healthy diet or good food an **existential as well as an economic challenge.**
- It is crucial to bring together bold leadership and investments from governments and philanthropists, and experienced nonprofits working alongside local community members, in order to fight the rising hunger and malnutrition rates and ensure that each child has the opportunity to survive and live up to their true potential.

## 12) The road to India's \$5 trillion economy

### Context

- As the world cautiously emerges from Covid-19, countries are charting a roadmap to accelerate economic growth and build future resilience. Given that the global pandemic strained public resources, **public-private partnerships (PPPs)** can be an effective tool to optimise private sector expertise and efficiency, raise private capital leveraging scarce public funds, and build back better by offering quality, efficient services to people.

### Migration Towards Cities

- For India to realise its vision of a **\$5 trillion economy by 2025, \$4.5 trillion must be invested in national infrastructure by 2030.**
- Timely and efficient implementation of this investment is critical to meet the challenges of

a major demographic-economic trend: **by 2030, around 42% of India's population is likely to live in cities, and the number of metropolitan cities is estimated to increase from 46 (Census 2011) to 68 in 2030.** To make cities liveable and sustainable, citizens need **efficient services, including transport, sanitation, and others.**

- If planned well, cities can promote businesses, offer greater job prospects, and provide a better quality of life for people. To achieve that, **municipal governments will need to address challenges, including poor air and water quality, and regulatory bottlenecks.**

#### Potential of PPP Model

- The PPP model can be an effective and sustainable option to strengthen the nation's infrastructure. A leading country in terms of PPPs, **India ranks 70 out of 140 countries for infrastructure quality in the Global Competitiveness Index.**
- Over the last few years, the government has rolled out several PPP programs for the delivery of timebound, high-priority public utilities and infrastructure. Going forward, the private sector needs to expand its focus to include **underserved sectors such as water, waste, and power distribution.**
- To increase the number of infrastructure projects and tap the massive investment needs, the **involvement of municipalities will be critical** for India.
- Recognising the need for investment in municipal infrastructure, the **International Finance Corporation (IFC),** a member of the **World Bank Group,**

has provided more than **\$10 billion in financing** for 300 projects and provided advisory services to cities in more than 60 countries over the past decade.

- In India, IFC has **partnered with state governments** on bankable PPPs focused on climate, social and economic inclusion, and sustainable infrastructure and connectivity that could serve as a template for emerging markets.

#### Future Roadmap

- Despite the Indian government's approach to decentralised growth, encouraging cities to consider investing strategically by **tapping options for commercial borrowing** is the biggest challenge. In FY18, the average commercial borrowing by the 37 largest municipalities was less than \$9 million per city.
- Also, while initial **municipal bonds** are a step in the right direction, there is scope for more funds to be raised.
- To scale up, the **use of guarantees and credit enhancement** for projects would be a great step ahead. Further, the guarantees should be made with fiscal sustainability in mind.
- Moreover, a **clear pipeline of national and municipal infrastructure projects with timelines** will allow equity investors, lenders, and developers to plan better.
- A **well-designed strategy with uniform guiding principles** for quality contracts will attract more private-sector funders and developers, including international players while enabling smooth implementation.

#### Conclusion

- For a country as diverse as India, PPPs can lead to **faster**

**implementation of projects, lower costs, and increased efficiency** to sustain higher performance over the life of the projects. Most importantly, by mobilising private capital, PPPs can **free up scarce public funding for a range of critical services—irrigation, sanitation, health, and education.**

### 13) India's logistics hurdle

#### Context

- Connectivity plays an important role in **decongesting cities**. If India can improve its **logistics**, it would undoubtedly **raise India's global competitiveness**.

#### High Logistics Costs

- India spends around **13% of GDP on logistics**, while China spends less than 10%. The comparable figure for Europe is 8%.
- The single biggest factor making India's logistics costly is the **excessive reliance**, at present, **on road transport for cargo movement**.
- **Shifting a greater proportion of freight to railways, inland waterways and coastal shipping**, in seamless **intermodal shifting** of the same cargo load, is seen as the best strategy to bring down costs, as transport by rail and water is significantly cheaper than transport by road.

#### Towards Intermodal Transport

- To achieve **intermodal transport**, some things need to change. One is **creation of the appropriate modes of transport**, such as barges and ports to navigate inland waterways, goods trains that run to a timetable, and trains that connect large towns with smaller towns in the neighbourhood.
- Another is **coordination**. For that, the primary requisite is **collection**

**and sharing of the relevant data.**

That means tagging every piece of freight with sensors that can communicate with machines that would relay real-time information to a central hub that can coordinate onward movement.

- Efficient coordination in logistics depends on **ubiquitous telecom connectivity and the deployment of the capacity for machine-to-machine communication**.
- It is also crucial that **regulatory convergence** is established to enable smooth handover of cargo from one mode to the next. In this, the central government's **PM GatiShakti programme** should help.
  - *PM GatiShakti is a digital platform that connects 16 ministries — including Roads and Highways, Railways, Shipping, Petroleum and Gas, Power, Telecom, Shipping, and Aviation- with a view to ensuring holistic planning and execution of infrastructure projects.*
  - *The portal will offer 200 layers of geospatial data, including on existing infrastructure such as roads, highways, railways, and toll plazas, as well as geographic information about forests, rivers and district boundaries to aid in planning and obtaining clearances.*
- **Inter-state cooperation** to permit movement across state borders is another layer of challenge, one that has been eased but not overcome by the **introduction of GST**.
- With the notification of more liberal rules for the **movement of drones and private jets**, new modes of transport are becoming available and steadily more affordable.

### Other Challenges

- **Changing the fuel used in all forms of transport**, so as to reduce greenhouse gas emissions, is the key to both meet India's climate goals and to improve air quality, besides lowering cost.
- There is also the **challenge of manufacturing the vehicles, the batteries, and other ecosystem kits domestically**, with world-beating competitiveness. Scheme such as the **Production Linked Incentive (PLI) Scheme for Automobile and Auto Component Industry, FAME II (Faster Adoption and Manufacturing of Hybrid and EV) scheme**, etc. show the government's commitment in addressing the challenge.
- Underlying all these is the **challenge of financing** all such endeavours in new-generation logistics. Some **venture and private funding** has been forthcoming. More is needed.

### Way Forward

- **Banks and the bond market** can fund only projects that have crossed the initial hurdles of high risk with the help of risk capital. **India's pension funds**—the Employee Provident Fund and the National Pension System—and the **Life Insurance Corporation** must find the courage to devote a slice of their giant corpus to funding innovative entrepreneurship.

## 14) Nutrition Security

### Context

- The **United Nations report on the State of Food Security and Nutrition 2022** notes that while the world is moving backwards in its bid to banish hunger, India is among the few lower- and middle-income countries that are bucking this trend.

- **Globally**, the count of **undernourished people swelled by nearly 46 million** over the past 15 years, it has **shrunk in India by nearly 23.5 million**, though the **scale of malnutrition still remains worrisome**.

### How Has India Countered This?

- The major strides made by India in alleviating hunger are attributed, in part, to **liberal consumer subsidies and a slew of food-based social welfare programmes**.
- Unsurprisingly, the **targeted public distribution system (TPDS)**, involving the supply of free or highly subsidised foodgrains to nearly one third of the population, has come in for a special mention.

### Threat of Malnutrition

- However, regardless of the perceptible strengthening of the country's food security, **more than half the Indian women in the 15-49 age group are anaemic**. Besides, about **45 million children below the age of five suffer from wasting**, the deadliest form of malnutrition.
- Additionally, about **149 million children are stunted** due to deficiency of essential minerals and vitamins. At the same time, the **incidence of obesity among both adults and children is burgeoning**, indicating unhealthy food consumption even among the well-fed people.
- Rampant malnutrition, including imbalanced nutritional intake, is, therefore, a grave issue that still awaits resolution.

### Causes of Malnutrition in India

- An inter-ministerial committee has listed **lack of affordability, dietary ignorance, and socio-cultural food taboos** among the

significant factors responsible for rampant malnutrition.

- The panel observed that the silent crisis of undernourishment has **aggravated during the Covid-19 pandemic**.
- This committee has, therefore, counselled **tweaking the National Food Security Law to make inclusion of protein-rich and micro-nutrients-doped food items legally mandated** part of the meals provided through food safety programmes in schools and Anganwadis, and under the Poshan Abhiyan, which is aimed specifically at mitigating malnutrition.

#### Other Recommendations

- **Mothers' education and their children's wellness are directly related.** The least diverse diets, stunting and wasting, and anaemia affect children whose mothers lack knowledge. **Programs to improve girls' educational status and lower school dropout rates**, especially at the secondary and higher educational levels, must thus be encouraged.
- **Biofortified food innovations** can only reduce malnutrition when they are scaled up with supportive policies. To achieve this, it would be necessary to **spend more on agri-R&D and to reward farmers** by connecting their products to profitable markets through ethical value chains and distribution methods.
- A **nationwide awareness campaign** along the lines of the "Salt Iodization Programme," which was started by the government in 1962 to replace regular salt with iodized salt, might be very helpful in achieving the intended goals of Poshan for all at

the individual and communal levels.

- Children must be encouraged to eat **locally available, nutrient-dense, affordable foods** through branding, awareness campaigns, social and behavioural change initiatives, such as community-level counselling, dialogue, media engagement, and advocacy.
- Measures to **increase the adaptability of food systems to climate change**, for instance by giving smallholder farmers widespread access to climate risk insurance and forecast-based finance are required.

#### Way Forward

- It must be acknowledged that India ultimately needs a **multi-pronged strategy** (access to basic infrastructure, such as power, drinking water, and sanitation) to address the underlying causes of malnutrition.

### 15) GIFT City

#### Context

- India is one of the fastest-growing economies in the world. The country needs to expand its economic and strategic activities globally and GIFT City, an emerging global financial hub and India's first operational smart city, has a pivotal role to play in achieving this vision.

#### About GIFT city

- Spread over 886 acres in **Gandhinagar, Gujarat**, GIFT City includes a multi-service **Special Economic Zone (SEZ)** which houses **India's first International Financial Services Center (IFSC)**.
  - *SEZ is a geographic area in which the business and trade laws are different from the rest of the country.*
  - *The objective of developing SEZs include increasing the balance*

*of trade and attracting newer inward-investments into the country, and creating newer jobs.*

- *Financial incentives are granted to those setting up SEZs and cover a wider gamut of benefits for investors across taxation, customs, labour regulations, etc.*
- The **social infrastructure** in the city includes a school, medical facilities, a proposed hospital, GIFT City business club with indoor and outdoor sports facilities.
- It also includes integrated well-planned residential housing projects making GIFT City a truly **“Walk to Work”** City.
- GIFT is a smart city in every sense with various first-in-the-country initiatives in the field of urban infrastructure.

#### IFSC

- India’s **first International Financial Services Center (IFSC)** has been operationalised in GIFT City.
- An IFSC would help to bring back the financial services and transactions to India that are currently carried out in offshore financial centers by Indian corporate entities and overseas branches/subsidiaries of financial institutions (FIs).
  - It would provide **Indian corporations with easier access to global financial markets.**
  - It would also **complement and promote further development of financial markets in India.**
- IFSC aims to achieve this by offering a **business and regulatory environment that is comparable to other leading international financial centers** like London and Singapore.

- GIFT IFSC provides **services related to capital markets, offshore insurance, offshore banking and asset management, aircraft and ship leasing, and ancillary services.**
- As the dynamic nature of business in the IFSCs requires a high degree of inter-regulatory coordination within the financial sector, the **International Financial Services Centres Authority (IFSCA)** has been established as a unified regulator with a holistic vision in order to promote ease of doing business in IFSCs and provide a world-class regulatory environment.
- The main objective of the IFSCA is to **develop a strong global connection and focus on the needs of the Indian economy as well as to serve as an international financial platform.**

#### Conclusion

- Despite the challenges posed by the Covid-19 pandemic globally, GIFT City continues to attract domestic and international players. In the years to come, GIFT City will be a force to reckon with in the field of financial technology, data security and finance.

## 16) Rethinking the coal issue

#### Context

- India routinely experiences problems with the availability of coal. Despite high reserves, the country imports costly coal to maintain the operation of its thermal power facilities.
- But this is hardly a brand-new phenomena. The shortage happens virtually annually, and despite the government's numerous efforts, it has not been resolved.

## Coal in India

- As of **March 2022**, coal-based power generation accounted for **over 53% of India's total power capacity**, with a capacity of roughly 200 gigawatts (GW) of the 396 GW total.
- According to a CEEW (Council on Energy, Environment and Water) evaluation, older inefficient plants produce a disproportionate amount of electricity, while the more modern and productive ones are left unoperated due to a lack of favourable coal supply contracts or power purchase agreements.

## India's coal reserves

- India has one of the largest coal reserves in the world, according to the Geological Survey of India's inventory. There are **352 billion tonnes of geological coal reserves** in the nation as a whole.
- The **majority of India's reserves** (over 282 billion tonnes) are **made up of thermal or non-coking coal**, which has a relatively **low calorific value**. The majority of thermal power plants utilise this coal as fuel.
- Fewer deposits of higher-quality coking coal, which is utilised in the metallurgical sector, are available in the nation, which makes it necessary to import coal. About **20% of India's thermal coal needs are imported**.

## Underlying Issues

- There are several reasons for our failure to meet domestic demand for thermal coal. These include the **inefficiency of Coal India Ltd (CIL)**, the **perpetually cash-starved state discoms**, which delay payments to producers who in turn delay payments to CIL, as well as **bad logistic planning**, which saw coal being available at pithead but not with power plants.

- The most important reason for India being unable to meet its domestic thermal coal demand consistently is because of the **failure of the policymakers to take the long view of the coal sector**.
- The bulk of India's privately run coal mines were **nationalised between 1971 and 1973**. Many of the private mines were badly run and there had been many serious accidents. Beyond that, they also lacked the resources and the inclination to improve coal mining efficiency and production.
- The nationalisation yielded **mixed results**. While accidents came down, the creation of the monopoly CIL didn't solve the problem of production lagging behind demand.
- Of late, some fresh efforts have been made to fix the coal issue — **transparent coal auctions** have taken place. Coal India has increased its production but it has not been able to keep pace with rising demand. And **private sector coal mines are still marginal** to India's demand supply equation.

## Major Problems

- **Two problems** — one old one and another of recent origin — have been primarily responsible. The old one is the **cash flow issue**. Many state discoms owe enormous amounts to power generating companies. This in turn has hampered the ability of power producers to pay CIL on time.
- The second issue is the **environmental one**. Because coal emissions are often seen as the main source of **climate change**, the Union government frequently ignores the thermal power industry in favour of promoting renewable energy generation.

## Measures Required

- The government must understand that the **need for coal cannot be disregarded for at least three decades, if not longer**. India must thus prepare for coal since it will continue to be the **primary fuel for the production of thermal electricity**.
- India should simultaneously seek **ways to use its indigenous coal reserves**, which are spread out over the nation, while also reducing emissions.
- To ensure that power plants operate effectively, an **enabling ecology must be established**. Since long-term contracts account for more than 90% of electricity purchases, discoms have no motivation to proactively monitor and control demand. **Discoms should be given the tools they need to control demand intelligently**.
- Technologies like **coal liquefaction and carbon capture, storage, and utilisation (CCUS)** can be promoted to reduce coal emissions.

## Way Forward

- To solve ongoing power shortages, a systematic approach to the energy transition that takes advantage of renewable energy's promise of low-cost electricity as well as potential for energy mix diversification is essential.
- India has to increase its financial support for the adoption of clean coal technology across the whole coal value chain.
- Private commercial mining is now permitted, thus mining blocks allotted to the private sector might be supported to start producing as soon as possible.

## 17) India's biggest challenge

### Context

- The United Nations Population Division (UNPD) has released a report which noted that **India is set to surpass China as the world's most populous country in 2023**, with each counting more than **1.4 billion** residents this year.
- What is of particular importance is that India's population will continue to grow, while China's will now begin to shrink unless there is a structural change in fertility rates in either country.
- By 2050, according to the same projections, India's population will be around 1.7 billion and China's around 1.3 billion.

### How Was This Projection Made?

- A country must maintain a **total fertility rate of 2.1 over the long term** to attain population stability, according to the UNPD. According to the **NFHS-5**, India has officially hit a **TFR of 2.0**. If India keeps growing at this rate over the next few years, it will eventually reach population stability.
- India will surpass China, nevertheless, as China's fertility is lower than expected (1.16). China changed its **one-child policy** to allow two children in 2016 after years of strict population control. Then, a **third child** was permitted when it was further loosened in 2021.

### Insights into India's Population

- According to the latest data, India's population is **1.4 billion**. It has **2.4% of the world's land area and 17.5% of the world's people**.
- The **"Young in India 2022" Report**, published by the Ministry of Statistics and Programme Implementation (MoSPI), reveals that the **population proportion of youth is beginning to drop while**

**the share of the old is anticipated to rise** between 2021 and 2036.

- From 6.8% in 1991 to 9.2% in 2016, the elderly's share of the population has grown, and by 2036, that share is expected to be 14.9%. In contrast, youngsters aged 15 to 29 makeup 27.2% of the population in 2021, and that percentage is projected to drop to 22.7 by 2036.
- The huge young population has been referred to as a **window of opportunity** for our country's growth and development, an opportunity that must be taken advantage of before the window closes given its effects on labour participation and dependence ratios.

### Challenges of Rising Population

- A sizable working-age population does not necessarily translate to a large labour force. The **workforce in India has not been able to be ready for the employment market.**
- This has occurred as a result of **low educational achievement and a disregard for the standard of the schools.** A lack of focus on school quality has meant that a large proportion of these **do not possess the basic skills** expected of high school graduates.
- Some studies of schools in urban and peri-urban Delhi showed that as much as a third of high school students have no basic mathematics and language skills, and many are performing at a primary school level.
- Lower dependence signifies a nation's **economic advantage.** An economically engaged population, for instance, generates dividends that result in income transfers across generations. But when a sizeable section of the working-age population is neither economically

engaged nor labouring for subsistence, the dependence ratio based only on age structure might be deceiving.

- Only 55% of Indians between the ages of 15 and 64 report having some type of work. India must thus find **appropriate employment for its working-age population.**
- The **absence of women from the workforce** limits the size of India's labour force. Women are significantly underrepresented in manufacturing, the transportation industry, and skilled blue-collar professions.
- India cannot continue to have the world's biggest population and one of the lowest employment rates. The issues won't be limited to economic factors like growth and lost jobs. Additionally, it will result in riots and other societal issues.

### Recommendations

- The public school system must make sure that every student graduates from high school and is encouraged to pursue **suitable skilling, training, and vocational education** in line with market demand, regardless of whether they live in a rural or urban environment.
- Youth will need to be prepared with **information-based skills** that are essential in the knowledge economy. In order to produce a qualified labour force, India must see to it that the education system in central India is upgraded.
- **Modernizing school curriculum,** using new technology to set up virtual classrooms and Massive Open Online Courses (MOOCS), and funding open digital institutions would all contribute to a workforce with a better level of education.
- For policy coordination between States on various emerging

population issues like migration, ageing, skilling, female workforce participation, and urbanisation, a **new federal approach to governance reforms for the demographic dividend** will need to be put in place. This governance structure should include **inter-ministerial collaboration** for strategic planning, investments, monitoring, and course correction.

- Many Indian women desire to work if they could find acceptable occupations, especially with dropping fertility and increased education. If India wants to benefit from the gender dividend, it is crucial to **make jobs more attractive to women**.
- India will also need to expand women's influence over the family's finances, property, and housing because women will make up the majority of the senior population.
- India needs to **build more reliable old-age support systems**. This should combine individual savings, government social security programmes, and raising the retirement age to enable the older population to remain economically engaged for longer.

### Conclusion

- Unless the human capital of this burgeoning cohort of Indians is enhanced, India will face problems that are not just economic, missing jobs and growth, but also social.
- Recent riots related to government and military jobs are a harbinger of these problems.

## 18) Urban Poor

### Context

- For over two decades, India has had one of the fastest expanding economies in the world. Cities in India play a significant part in the

country's economic growth. India's cities are its economic hubs and a draw for a sizable rural population looking for a better life.

- The demand on cities from population growth has increased as the manufacturing and service sectors have developed. According to the **UN State of the World Population Report, more than 40% of India's population is projected to live in urban regions by 2030,**

### Urban Poverty

- Urban poverty is a type of poverty that is more obvious in megacities and is characterised by **subpar living conditions, low incomes, and a lack of basic necessities** for a good level of living.
- India's urban poverty is distinct, especially in the manner that it exhibits distinctive growth tendencies. Despite claims that the proportion of urban poor has decreased over the years, the numbers continue to grow.

### Reasons for Urban Poverty

- **Lack of Skills:** Due to a lack of knowledge and skills, the majority of the poor are unable to take advantage of the new work prospects in many areas of the urban economy. It has produced generations of unskilled or semi-skilled workers who struggle to find positions that pay well.
- **Rural-Urban Migration:** The rural poor mostly migrate to urban regions in quest of alternative work and means of subsistence, leaving behind a large population of urban poor. **Asymmetrical development** causes migration due to a lack of infrastructure in rural regions and fast industrialization in metropolitan areas.
- **Inflation:** A sharp increase in the cost of food staples and other

necessities makes lower-income people' suffering and privation in metropolitan areas even worse.

- **Lack of Quality Employment:** Poverty is exacerbated by **unemployment or underemployment** as well as the temporary and sporadic nature of labour in metropolitan settings.

### What problems do the urban poor have?

- **Access to basic services:** For migrants living in metropolitan settings, accessing public services might be difficult. For instance, in addition to free food grains, the cost of vital goods has soared as well, including healthcare prices.
- **Overcrowding:** Millions of people move to the cities to work in low-wage employment including domestic help, middle-class vehicle driving, taxi driving, labour on construction sites, etc. As a result, the already congested metropolitan infrastructure becomes crowded.
- **Water and Sanitation:** The COVID-19 outbreak has made slum regions' subpar sanitary practices clear. It was hard to practise hand washing and maintain physical distance in slums.
- **Risk of Forcible Eviction:** People living in poverty have no addresses on official documents. They establish themselves anywhere they can, but as more individuals join, a whole community of illegal settlers forms, raising the possibility of forcible expulsion.
- **Education:** A wide range of factors influence the education of kids who live in slums. Even when slum children enrol in school, many leave out in order to assist their families financially, depriving them of their education.

### Way Forward

- **Special Community Connect Campaigns** should be launched to guarantee access to social assistance programmes. These advertisements have to include information on LPG connections, bank accounts, life and accident insurance, Employees State Insurance benefits, and healthcare initiatives like Ayushman Bharat and the Pradhan Mantri Jan Arogya Yojana (PMJAY).
- **Specially dedicated teams** need to be formed for the needy by the urban municipal authorities. For this reason, they may raise the property tax. The ULB requires personnel with particular skill sets and governance changes in order to be implemented.
- In a mission mode, **Self-Help Groups** should try to completely reach underprivileged homes in urban areas. Access to finance is necessary to support this process of livelihood diversification. The **PM SVANidhi Scheme's** loan programme for street sellers is a positive start in that direction.
- It is important to lessen the trauma of migrants' journeys to urban areas in search of employment. **Migration Support Centers** may be built for this purpose. Access to credit will be made easier by the provision of rental housing and property titles to settlers who meet the minimum conditions.
- Because slums are not recognised by the government as official settlements, the **majority of relief funding and benefits do not reach slum residents**. Urban poverty is significantly impacted by the lack of adequate social security programmes for informal employees. New methods of urban planning and efficient government are so urgently needed. For the

benefit of the population living in urban slums, an **MNREGA-like programme** may be launched there as well.

- Slum neighbourhoods should have **priority in receiving basic amenities** like clean water, sanitary facilities, and electricity. Slums need to be **upgraded and rehabilitated**, but it's also important to create identification markers based on the National Food Security Act List and keep track of the poor households without access that could have been missed off this list.
- Poor households must be **skilled, upskilled, and re-skilled** in order for them to combine employment with skill improvement. Additionally, **apprenticeship programmes** need to be offered.
- Initiatives for human development should be taken, such as **expanding healthcare facilities and improving schools**. Housing, well-being, and welfare requirements of the working class or the urban poor must be taken into account in master plans.

## 19) The need of the hour: A Renewables revolution

### Context

- The primary contributor to the climate catastrophe is fossil fuel. It is clear from the recent studies that large areas of the world will experience violent storms, flooding, droughts, wildfires, and unbearably hot temperatures.
- According to experts, the maximum degree of warming to prevent the worst effects of climate change is **1.5°C**, yet we are already there. **By 2030, the emission must be cut in half, and by the middle of the century, it must be completely eliminated.**

### Statistics

#### World Renewable Energy:

- Renewable energy's contribution to the world's power generation increased from 27% in 2019 to **29% in 2020.**
- **Two-thirds of the growth** in renewables is anticipated to come from **solar PV and wind.**

#### Indian Scenario:

- India has one of the most promising renewable energy markets in the world. At present, **Renewable Energy Sources (RES) account for 39.7% of total installed capacity in the country (159 GW).**
- India has enhanced its ambition to install **450 GW of renewable energy capacity by 2030.**

### 5-Point Plan to Boost Renewable Energy

- Renewable energy can limit climate disruption and boost energy security. Renewables are the **peace plan of the 21st century.**
- To promote renewable energy, following measures are crucial:
  - First, we must **make renewable energy technology a global public good**, including removing intellectual property barriers to technology transfer.
  - Second, we must **improve global access to supply chains for renewable energy technologies, components and raw materials.** Shipping bottlenecks and supply-chain constraints, as well as higher costs for lithium and other battery metals, are hurting the deployment of such technologies and materials.
  - Third, we must **cut the red tape** that holds up solar and wind projects. We need fast-track approvals and more effort to modernize electricity grids.

- Fourth, the world **must shift energy subsidies from fossil fuels** to protect vulnerable people from energy shocks and invest in a just transition to a sustainable future.
- Fifth, we **need to triple investments in renewables** with support from multilateral development banks and development finance institutions, as well as commercial banks.

### Encouraging Signs

- While oil and gas prices have reached record price levels, **renewables are getting cheaper all the time.**
  - The cost of solar energy and batteries has plummeted 85 per cent over the past decade;
  - The cost of wind power fell by 55 per cent.;
- In addition to this, recent studies have noted that **investment in renewables creates three times more jobs than fossil fuels.**

### Conclusion

- The only true path to energy security, stable power prices, prosperity and a livable planet lies in abandoning polluting fossil fuels and accelerating the renewables-based energy transition.

## 20) Policies on Scheduled Tribes

### Context

- Traditionally, Scheduled Tribes enjoyed total autonomy over the governance of their affairs. This system of autonomy was dismantled during the British Raj in India. Tribal communities in India were viewed with derision by the British and various legislations were brought to alienate them from their ancestral rights and further

criminalised upon demanding their rights.

- The Constitution makers adopted specific measures to protect the rights of STs.

### Constitutional Safeguards

- **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.

### Statutory Provisions

- 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 offenses 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.
- Rights under FRA
  - **Title rights** – Ownership to land that is being farmed by tribals or forest dwellers subject to a **maximum of 4 hectares**; ownership is only for land that is actually being cultivated by the concerned family, meaning that no new lands are granted.

- **Use rights** – to minor forest produce (also including ownership), to grazing areas, to pastoralist routes, etc.
- **Relief and development rights** – to rehabilitation in case of illegal eviction or forced displacement; and basic amenities, subject to restrictions for forest protection.
- **Forest management rights** – to protect forests and wildlife.

### National Commission for Scheduled Tribes

- It is important that the constitutional rights given to Scheduled Tribes are protected and special emphasis is given to them in the planning process. For this purpose, the **National Commission for Scheduled Tribes (NCST)** was created 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. It has a constitutional duty 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.

### Roles & Responsibilities

- The issues of tribal communities in India are unique in nature, owing to their distinct cultural pattern and value systems across different regions. Considering this perspective, specific needs were identified and NCST had been given a special constitutional status in order to:

- **investigate and monitor** all matters relating to the safeguards provided for the Scheduled Tribes;
- **inquire into specific complaints** with respect to the deprivation of rights and safeguards of the Scheduled Tribes;
- **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;
- 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;
- present to the **President** 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.
- While inquiring into any complaint referred to, the Commission has all the **powers of a Civil Court** trying a suit.

### Grievance Redressal

- 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.

- NCST has also launched an e-portal [www.ncstgrams.gov.in](http://www.ncstgrams.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.

## 21) Healthcare Challenges

### Context

- The **United Nation's State of the World's Indigenous Peoples Report** states that "for indigenous peoples, health is equivalent to the harmonious co-existence of human beings with nature, with themselves and with others, aimed at integral well-being, in spiritual, individual, and social wholeness and tranquillity."
- It goes on to declare that when it comes to appropriate health systems for the indigenous context, models of healthcare must take into account the **indigenous concept of health** and preserve and strengthen indigenous health systems as a strategy to increase access and coverage of health care.
- However globally, most health systems struggle at different degrees to reach adequate and appropriate healthcare to their indigenous people.

### Indian Scenario

- In India, there are challenges both in terms of reaching care, and in moving beyond disease-centred healthcare to integrated approaches to health and development of the tribal people.
- 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.

- A tribal family that does not yet have legitimate ownership over ancestrally cultivated and owned lands, lives in a state of perpetual food and livelihood insecurity, possibly prioritising child health and education less than more pressing daily living needs.

### 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 tribal communities. In most areas these programmes are **not adapted to local geographical or sociocultural contexts**, thereby worsening utilisation and quality of services provided.
- A **uniform family welfare approach** across the country prevents adaptation to family welfare needs of Particularly Vulnerable Tribal Groups (PVTG) and other tribal communities. For instance, restrictions currently apply for some groups hindering their reproductive rights, while others are in need of infertility care and/or safe abortion services.
- **Appropriate treatment for childhood illnesses in tribal children is poor** when compared to their non-tribal counterparts; **infant mortality and under-five mortality are higher** among tribal children in most States.
- **Sub-optimal protein, calorie and micronutrient intake** is a problem in several tribal communities. **Prevalence of undernutrition among school children** is generally higher than non-tribal counterparts.

- **Anaemia and other nutritional deficiency disorders are higher** among tribal women and children, contributing to adverse pregnancy outcomes and increased vulnerability of tribal children.
- **Incidences of infectious diseases** such as malaria are more frequent and have higher morbidity and mortality in most tribal areas.
- Certain tribal communities are reported to have significantly **high prevalence of Non-Communicable Diseases** (such as hypertension among tribes of Assam working in tea-gardens).
- **Environmental health** is a neglected area in general but in these 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.

### Health Systems

- There is a need to explore the **inter-linkages of health with other dimensions of human development** like education, land tenure, and empowerment, and that these can no longer be neglected particularly in relation with tribal communities across India.
- **Poor governance** in tribal districts accounts for various deficiencies in delivery of health programmes, schemes and services. Tribal health services are **severely underfinanced** and need higher allocations to improve equitable growth. 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.

- **Rich traditional health knowledge** exists in tribal communities, however the health systems do not harness the potential of positive traditional health practices. At the same time, specific interventions are needed in some areas to curb adverse cultural practices.

### Way Forward

- 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. However, despite all these differences, the health indicators in nearly every State for its ST people, lags significantly behind the other people of the State.
- 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 tribal people, especially their health.**
- The diversity of landscapes and socio-political environment within which tribal people live, necessitates the need for **inclusive governance and local-level planning and sensitisation** at the level of health centres and local governments at district levels and below.
- The need of the hour is to focus on **collaborative partnerships with civil society and community-based organisations** to customise and implement local health reforms

in partnership with the communities.

## 22) The North Eastern Milieu

### Context

- 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**'.
- Around **12 per cent of the total tribal population in India lives in the North Eastern Region (NER)**. 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.

### Ecology and Inhabitants

- It is widely known that being disturbed by scuffled history and geo-politics, NER has remained a **backward and less-developed region** of the Indian subcontinent though it covers 7.9 per cent geographical area of the country.
- Remarkably, it 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'**.
- **Agriculture** being the main occupation and source of livelihood for the farmers, had been and used to be, induced for **mono-cropping** due to the colonial policy of plunders through encouragement of only plantation crops, the natural

factor of high intensity of the rainfall and the socio-economic structures of tribal kinship. The intensive cultivation of crops and wide range of crop diversification in agriculture has not been the history in the region.

- Two distinct types of agricultural practice in NER may be observed (i) **settled agriculture** in the plains, valleys and gentler slopes and (ii) **slash and burn cultivation** (called **jhum cultivation**) elsewhere.
- Nowadays, agriculture in the form of plantation has been developed instead of jhum cultivation in certain States.

### Culture and Tradition

- NER is often described as the **Cultural Mosaic of India** with diverse tribal communities, linguistic, and ethnic identities.
- The tribal communities of the North East have their own traditional system of governance. Among these, **chieftainship** is prevalent, while others prefer to be **ruled by the village council**.
- Each society has its own cultural tradition, social system, set of values, custom and different modes of festivities which are mostly related to agriculture.
- In the socio-political life of tribal communities, **monarchy and democracy co-exist 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. **Lineage segmentation** is the chief principle of the political structure of the tribal communities.

### Recent Changes

- However, the socio-cultural elements of the tribal communities are changing for various reasons.

They are being exposed to a changing environment of varied nature.

- **Globalisation** has serious implications on the culture of the tribal communities. It imposes a **homogeneous consumerist culture and value system** on each society. The law of dynamics is universally applied to every society and tribal society is no exception.
- Thus, the tribal communities' exposure to the forces of change, both indigenous and exogenous, has serious implications on the lifestyle and culture of the tribal communities consequently.
- Though agriculture, shifting cultivation in particular, continues to be a prominent means of livelihood for many, their means of livelihood tends to change from subsistence agricultural income towards **diversified modern market-oriented employment and economy**.
- Sources of income have been diversified in terms of different occupations that happen to be made available as a result of various development initiatives.
- **Modern education** plays a vital role in changing the means of livelihood. This change is associated with an **increase of per capita income and educational level** systematically.

#### Improving Socio-Economic Conditions

- There is a significant improvements in socio-economic indicators like sex ratio, education, infant mortality rate and sanitation in the NER. As per 2011 Census, **sex ratio** is highest in Manipur (992), followed by Meghalaya (989) and Mizoram (976), and lowest in Sikkim (890). Figures for sanitation facilities in their dwellings also

reflect better position than the overall country indicators.

- **NITI Aayog** has been publishing the **Sustainable Development Goals (SDGs) 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.
- States/UTs being categorised as **Aspirant** (score 0-49), **Performer** (score 50-64), **Front Runner** (65-99), and **Achiever** (score 100) based on their score. Two States from the North Eastern Region, namely Mizoram and Tripura secured their position in the Front Runner category in 2020-21.
- Special attention is being paid to achievement of SDGs in the North East, with a **North Eastern Region 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 fasttrack progress towards achieving the SDGs in the region. There are **64 districts in the Front Runner category and 39 districts in the Performer category**. All districts of Sikkim and Tripura fall in the Front Runner category.

#### Conclusion

- In contemporary India, the tribal communities continue to outshine in various fields such as education, sports, various art forms (dance, music, painting, etc.), and add to the cultural presence of India. It is imperative that the policymakers continue to safeguard the tribal

rights so as to ensure inclusive development of the society.

## 23) Central Assistance for Welfare of Scheduled Tribes

### Context

- The Government of India (GoI) and the State Governments, through various schemes and policy measures, are working for the welfare of the backward communities including the STs.

### Important Central Sector and Centrally Sponsored Schemes/Provisions for tribal welfare

- **Special Central Assistance to Tribal Sub-Plan or Tribal Sub-Scheme of States:** Special Central Assistance to Tribal Sub-Plan is given by the Central Government to States to support their efforts in **bridging the gap between the tribal population and other social groups** through human resource development, enhanced quality of life, enhanced opportunities and alleviation of poverty.
- **Grant-in-aid under Article 275(1):** Grants-in-aid from the Union to certain States, charged on the Consolidated Fund of India, are provided to **promote the welfare of the STs** in that State or raise the level of administration of the Scheduled Tribes' Areas to that of the administration of the remaining area of the State.
- **Eklavya Model Residential Schools:** The scheme of Eklavya Model Residential Schools was introduced in the year 1997-98 with an objective to **provide quality middle and high-level education to Scheduled Tribe (ST) students in remote areas** in order to enable them to avail of reservation in high and professional educational courses

and get jobs in government and public and private sectors. The schools focus not only on academic education but on the **all-round development of the students.**

- **Scholarship and Fellowship schemes:** The Central Government has made provisions for scholarships to Scheduled Tribe students of the country which are available at various levels of education, viz. pre-matric education and post-matric education.

### Special Fund for Protection of PVTGs

- Particularly Vulnerable Tribal Groups (PVTGs) are those tribal communities with a **pre-agriculture level of technological expertise, a stagnant or declining population, an extremely low level of literacy, and a subsistence economy.**
- **Around 75 such PVTGs have been identified** by the Government of India in **18 States.**
- The Special Fund aims at improvement in the social indicators of PVTGs like livelihood, health, nutrition, and education to improve their situation.

### National Scheduled Tribes Finance and Development Corporation

- National Scheduled Tribes Finance and Development Corporation (NSTFDC), an apex Organization under the Ministry of Tribal Affairs, was brought into existence in 2001 with the sole aim of **economic upliftment of the Scheduled Tribes** in the country by way of extending concessional financial assistance to the target group under its various schemes.
- The prominent schemes of NSTFDC are **Adivasi Mahila Sashaktikaran Yojana** – an exclusive scheme for Scheduled Tribe women, **Adivasi Shiksha Rinn Yojana** – Education

Loan scheme, **Micro Credit Scheme for Self Help Groups (SHGs)** – comprising Scheduled Tribes as its members, **Tribal Forest Dwellers Empowerment Scheme** and **Teak Growers Scheme**.

### Conclusion

- Further, to celebrate the contributions and sacrifices of tribal freedom fighters, the Centre announced to commemorate **15th November** as '**Janjatiya Gaurav Diwas**', which is the birth anniversary of tribal leader **Birsa Munda**.
- In addition to these measures, the Government of India has launched **Van Dhan Vikas Kendras** to harness the wealth of the forest for the benefit of tribal people by providing a mechanism for **marketing of Minor Forest Produce (MFP)**. It essentially imparts training to the tribals in marketing their minor forest produce and in developing value chain components.
- It is a joint effort of Tribal Cooperative Marketing Development Federation of India (TRIFED) and the Government of India. The program has ambitious plans to tap into the traditional skill sets and knowledge of tribal people. It also will be helpful in converting tribal wisdom and experience into an economic activity that is remunerative.

## 24) Equitable Water Resources Management

### Context

- **United Nations (UN) General Assembly** resolution adopted in 2010 explicitly recognises the **human right to water and sanitation** and also calls upon international co-operation to help

countries, particularly developing countries, to provide safe, clean, accessible, and affordable drinking water and sanitation for all.

- **India houses 18 percent of the world's population but only 4 percent share in water resources** of the earth. Every year on an average, India receives nearly 4000 billion cubic metres (BCM) of water through rainfall of which about 1999 BCM form available water in rivers, lakes, reservoirs, groundwater and glaciers.
- However the distribution of this quantity is not uniform across the country, whereas some river basins are acutely drought prone, some other basins are frequently devastated by floods.
- Given the limited storage capacity and complexities of inter-basin transfers, it becomes imperative to improve the efficiency in conveyance and use of water to ensure equitable access to everyone.

### Agriculture Sector

- Demand on water resources is predominantly divided among **irrigation, domestic and industrial uses**. Among these sectors about **91 percent of the water is consumed for irrigation purposes** in India, while the figure is in between 30-70 percent in many other countries.
- Out of the total irrigated area of 68 million hectares, 31 million hectares is under **rice** and **sugarcane**, the top two water consuming crops, and 28 million hectares under **wheat**. **Over consumption of water** in agriculture sector is mainly due to the **conveyance loss** during distribution through canals, flood irrigation of farm fields, cultivation of crops without regard to the agro-

climatic conditions, misconception among farmers that more water brings more yield, unplanned and untimed irrigation schedule, and poor quality of irrigation water.

- This is where the need of **adopting and promoting efficient irrigation methods like micro-irrigation** becomes vital. A study conducted by the **Department of Agriculture Cooperation and Farmers Welfare** to assess the impact of micro-irrigation revealed that irrigation cost gets reduced by 20-50 percent, energy consumption reduced by 31 percent, average productivity of fruits and vegetables increased by at least 40 percent and average rise in farmers' income by 48.5 percent.
- Along with the efforts of improving micro-irrigation coverage, India needs a **paradigm shift from its cultivation from rice and sugarcane to millets** which are nutritious and water-efficient.
- The **UN General Assembly** has adopted the idea proposed by the Government of India to declare **2023** as the **International Year of Millets**. Promotion of millets is expected to **save at least 20 percent of water** in the agriculture sector, in addition to its contribution for food security and nutrition.

#### Drinking Water and Sanitation

- The **Sustainable Development Goal (SDG) target 6.1** aims for **universal and equitable access to safe and affordable drinking water for all by 2030**.
- Less than 70 BCM of water must have been more than enough to cater the domestic needs of all 1.35 billion people of the country. But in reality, there are many areas in the country where safe drinking water is not available.

- So, it is evident that the resource is **over used by a few, lost by leakages and theft, and distributed in a grossly inequitable manner**.
- Water cycle is also undergoing drastic changes due to climate change and is driving **more intense rainfall and flooding in certain areas**, whereas certain other areas, generally further away from coasts, are facing **intense droughts**.

#### Groundwater

- Groundwater led irrigation was instrumental in the **success of the Green Revolution** in India from the 1960s. However, it has become apparent that gains in irrigated agricultural production have progressively led to a **significant decline in groundwater levels** in parts of the country, particularly in north-western and peninsular southern India.
- **More than 60 percent of the agricultural water demand is met from groundwater**. The increased groundwater extraction may even lead to **salt water intrusion** in coastal aquifers which is a permanent damage to the water quality.
- Further, as the depth of groundwater falls **more energy** is consumed to pump water resulting in **higher cost of irrigation and a raised cost of cultivation**.

#### Socio-economic Disparities

- As the resource depletes, **affordability and accessibility** will be extremely challenging and this will **widen the inequity existing in the water sector**.
- In most of the households due to not having water supply on the premises, **women and girl children are often burdened** with the responsibility of fetching water

from far or collecting water from tankers. The time spent and the associated hassles leave them with **no time for quality education, independent income generation and other social engagements.**

This eventually leads to the **widening of already existing inequalities** in all other sectors including health and education.

- The Government of India, through its two flagship schemes, **Swachh Bharat Mission (SBM)** and **Jal Jeevan Mission (JJM)** is tackling this disparity and could bring in equitable access of water and sanitation.
- Successful implementation of SBM will ensure **access to sanitation facilities to all.** The Jal Jeevan Mission which aims to ensure **Functional Household Tap Connections (FHTC) to all rural households by 2024**, has at present achieved about 51 percent coverage.

### Need of Technology Infusion

- **Technology penetration in the water sector is low** as compared to other social sectors such as health and education. It is imperative to augment human efforts with the aid of technology.
- This could be in the form of **automation of canal operation, real-time assessment of irrigation requirement** with the help of Artificial Intelligence (AI), **modern and water saving irrigation methods, automated leak detection** in drinking water pipelines, **cost effective wastewater treatment, on-the-spot water quality testing, and zero-liquid discharge power plants.**

### Government Initiatives

- The Government of India has adopted various measures to

**improve water use efficiency** in the agricultural sector in the country.

- The **Per Drop More Crop (PDMC) component** under **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)** mainly focuses on improving water use efficiency at farm level through micro-irrigation and better on-farm water management practices to optimise the use of available water resources.
- State governments have also launched initiatives aimed at optimising water demand for agriculture. Examples: '**Jal Hi Jeevan Hai**' Scheme by **Haryana** incentivises growing of less water intensive crops. The **Maharashtra Government** has **mandated use of drip irrigation for sugarcane cultivation.**
- Further, the **National Water Mission**, Ministry of Jal Shakti has launched '**Sahi Fasal**' campaign in 2019 to nudge farmers in the water-stressed areas to grow less water intensive crops which are economically remunerative, suited to the agroclimatic-hydro characteristics of the area; and are environmentally friendly.

### Way Forward

- The society as a whole should be more conscious towards productivity of water. There should be a proactive introspection from farmers and civil society organisations on how the subsidised power and less priced water leads to inefficient use of the precious and scarce natural resource. The price recovery should be such that it makes the system self-sufficient to meet its regular operation and maintenance expenses.

- Civic sense should prevail among citizens that the water we waste, misuse or overuse makes the under-privileged and their children lead a water-stressed life. The water use principles should uphold the **spirit of inclusiveness** and ensure that **“No one is left behind”** as envisaged in the Sustainable Development Goals (SDGs).

## 25) Nature Based Solutions for Urban Water Management

### Context

- Increasing urbanisation 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.
- **Deforestation, conversion of agricultural lands, creating infrastructure beyond the carrying capacity, loss of wetlands, distortion of watershed** are some of the activities taken up to support the rising population in cities.
- 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.

### Worrying Trend

- The **Global Climate Risk Index 2021** ranks **India as the 7th most-affected country from climate-related extreme weather events** such as storms, floods, heatwaves, etc. Widespread drought in July 2019 followed by devastating floods in August 2019 in **Chennai** can be seen as a perfect example of extreme events due to changing climatic trends. Furthermore, flash floods of **Uttarakhand (2013)** and **Wayand (2018)**, extreme and frequent cyclones of **eastern coast**

are also the instances probing for proper understanding and planning for such unusual events.

- 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**.
- As per the assessment by **NITI Aayog’s Composite Water Management Index**, over **21 major Indian cities** including Delhi, Bengaluru, Hyderabad, and Chennai, **would run out of groundwater very soon**, affecting nearly 100 million people.
- Besides this, **infringement and intrusion of urban water lakes and ponds** has made cities more vulnerable to flooding and more susceptible to climate change.

### Nature-Based Solutions

- Nature-based solutions (NBS) are actions to protect, sustainably manage, or restore natural ecosystems that address societal challenges such as climate change, human health, food and water security, and disaster risk reduction effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.
- For example, a common problem is the flooding in coastal areas that occurs as a result of storm surges and coastal erosion. This challenge, traditionally tackled with manmade (grey) infrastructure such as sea walls or dikes, coastal flooding, can also be addressed by actions that take advantage of ecosystem services such as **tree planting**.
- **Planting mangroves** in coastal areas reduces the impact of storms on human lives and economic assets, and provides a habitat for

fish, birds and other plants supporting biodiversity.

### Benefits

- Nature-based solutions **enhance existing and man-made infrastructure offering economic, social, and environmental benefits**. These solutions not only deliver short term benefits but also extend the **long-term benefits** to present and future stakeholders.
- For instance, in China, restoration of the degraded **Loess Plateau** benefited over 2.5 million people with the introduction of sustainable farming practices. In **greater Manchester**, over £150 million/year were saved for healthcare costs with access to green spaces and tree planting activities.
- Globally, it is also estimated that the **mangrove forests can save about USD 80 billion per year** by avoiding losses from coastal flooding and protecting up to 18 million people.
- Nature-based solutions also **generate economic gains through immediate job creation, increased business productivity and tourism**.
- Notably, nature-based solutions do not necessarily require additional financing sources but usually involve **redirecting and making more effective use of existing financing sources**.

### NBS for Water Conservation

- Nature-based solutions to manage the 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.**

- In urban set up, the idea is to integrate grey infrastructure such as dams, seawalls, roads, pipes or water treatment plants to support and complement natural infrastructure such as **promoting green roofs, open and green buildings, planting trees and terrace gardens, recycling and reusing water**.
- It is also crucial to recollect the oldest and most effective method of **tapping rainwater at source**. The urban households can plan and design houses to store rainwater for at least non-potable uses.
- Tapping rainwater is also required to rejuvenate urban lakes and ponds. These local ponds and lakes act as a **sponge and thermoregulators**, helping areas to accumulate rainwater, enhance groundwater and regulate micro-climate. The revival of local water bodies can also support cities to be **less dependent on far away water sources** for meeting water demands.
- Creation and maintenance of **urban green spaces** such as parks, community gardens, playgrounds, etc. is also recommended. Significance of green landscapes should also not be undermined as the parks and recreational spaces can help in **absorbing the free flow storm water** avoiding cities to get water logged.
- One of the practices to avoid storm water being practiced in **China** is **'Sponge Cities'**. The concept is to absorb excessive rainfall through soil infiltration while retaining it in underground tunnels and storage tanks, only discharging it into the river once water levels are low enough.

## Conclusion

- With the rising global challenges of climate change, urbanisation, biodiversity loss, as well as the current global health and economic crisis, the investment in nature-based solutions should be well promoted.
- Launching of '**LiFE Movement**' by Prime Minister Narendra Modi, on 5th June 2022, can be recorded as one of the initiatives to set the path for nature-based solutions to modern day concerns. The movement is to promote an **environmentally conscious lifestyle** that focuses on 'mindful and deliberate utilisation' instead of 'mindless and destructive consumption'.
- LiFE envisions making individual behaviour change the centre of the climate action narrative in the world and making sustainable lifestyles a global mass movement. This kind of movement will encourage the common people to contribute to the battle against climate change.

## 26) Water User Associations

### Context

- Due to the growing demand for water on the one hand and depletion of water due to climate change or other reasons, efficient and sustainable use of scarce water resources is of utmost importance.
- Towards this goal, **participatory natural resource management** has emerged as a new paradigm, where local institutions such as Panchayats and other village level user groups play a crucial role.
- It is envisaged that it will create a **sense of ownership of water resources and the irrigation system** among the users, so as to

promote economy in water use and preservation of the system.

### Water Users Associations

- In **National Water Policy (2002)**, a participatory approach to water resources management was emphasised, by involving not only various governmental agencies but also the users and other stakeholders in various aspects of planning, design, development, and management of the water resources schemes.
- Water User Associations (WUAs) are **farmer groups created with the objective of improving farmers' access to irrigation water resources**. In India, there is a diverse variety of WAUs in terms of registration, type of promoter, legal backup, and extent of powers and functions vested by the state and so on. There are WAUs promoted by the State, Gram Panchayat or NGOs or groups formed by farmers themselves.
- WAUs provide farmers of different size categories a platform to **come together and work as a group with the concerned irrigation authorities** so that as a group they are able to serve individual farmers' needs better.

### Functions

- There is a long mandate of activities and functions to be undertaken by WAUs. These functions include
  - acquisition and distribution of water;
  - maintenance and repairs;
  - fixation and collection of water charges;
  - punishing defaulters within the areas of the WUA; and
  - resolving disputes among water users in the area of operation.

- In many states, WUAs have been created through separate and enabling laws. As per latest available statistics, there are around 80,000 WUAs in India, scattered over states.

### Challenges

- Robust and efficient functioning of these WUAs is challenged by **several constraints**; such as, lack of legal back up, uncertainty of water availability, lack of financial viability, technical knowledge and leadership, inadequate training and capacity development, diverse nature and characteristics of members, lack of coordination between WUAs and other local institutions and stakeholders.
- However, the key to efficient functioning of these WUAs is **active involvement of all members and work in close coordination** with all other institutions, rising from self and vested interests.
- An assessment study of WUAs in Andhra Pradesh revealed that **political involvement and elite capture** dominated the functioning of WUAs and importantly, **devolution of powers was not effective** and many crucial functions such as assessment, collection of water charges, sanctioning of works, etc, continue to remain with the irrigation departments.

### Best Practices

- There are many success stories of WUAs documented by NITI Aayog in a report titled "**Compendium of Best Practices of Water Management, 2021**". For instance, **Tarapur Alpika Committee-WUA**, Tarapur, Amethi, Uttar Pradesh started managing the irrigation of agricultural fields after enforcement of the Uttar Pradesh

Participatory Irrigation Management Act, 2009.

- The said WUA after regular discussion with the farmers managed to reduce the malpractices such as illegal water-lifting and canal formation. In addition, in collaboration with the Uttar Pradesh groundwater department, canals were created to improve irrigation and under MGNREGA service road along canals were widened. Farmers are now able to water the crops four times in a year as compared to two times in a year.

### Way Forward

- **Robust functioning of WUAs and convergence of schemes with active beneficiary involvement and financial contribution** will ensure inclusive and sustainable utilisation of water resources and it will also address the concerns of small and marginal farmers.
- The problems of water scarcity can be addressed through **participatory planning**, involvement of such user groups, village organisations and self-help groups in the construction of small water harvesting structures and in **spreading awareness** about different types of cropping systems. Small farmers may also be encouraged to explore income generating activities such as fisheries.
- Community led institutions such as WUAs could be **important change agents in inclusive and sustainable utilisation of water resources**. However, the success of WUAs depends on many critical factors such as **active participation of members, mutual and strong co-ordination with local institutions** such as Gram Panchayats as well as other

stakeholders, **regular training and capacity development** of all stakeholders, and so on.

- **Regular monitoring and evaluation of the performance** of the WUAs is also necessary. Both the success and failure stories should be analysed and lessons should be drawn so that appropriate corrective measures can be provided for robust functioning of WUAs.
- In addition, WUAs also have the potential for **strengthening grassroots democracy, governance and accountability**.
- However, infusing the idea of 'responsible use of water' in the minds of all citizens must be a development priority. Possibly a **nation-wide 'water literacy programme'** is the need of the hour.

## 27) Jal Shakti Abhiyan: Catch the Rain

### Context

- Creating water secure communities is at the heart of Government of India's efforts in the water sector.
- To achieve this, the Government of India 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.
- These blocks fell under the **critical or over-exploited groundwater category**, where groundwater was being extracted faster than it could be replenished.

### Jal Shakti Abhiyan

- JSA was a collaborative effort of various ministries of the Government of India and state governments, coordinated by the **Department of Drinking Water**

### and Sanitation, Ministry of Jal Shakti.

- The JSA aimed at making **water conservation a jan andolan (people's movement)** through extensive communication and involvement of communities.
- JSA focused on **five aspects**:
  - water conservation and rainwater harvesting,
  - renovation of traditional and other water bodies,
  - reuse of water and recharging of structures,
  - watershed development, and
  - intensive afforestation.
- Besides, the special interventions included development of Block and District Water Conservation Plans, Krishi Vigyan Kendra Melas, Urban Waste Water Reuse, and 3D Contour Mapping of all villages.
- The combined efforts of all stakeholders achieved the creation of 2.73 lakh water conservation and rainwater harvesting structures, renovation of 45,000 water bodies/tanks, creation of 1.43 lakh reuse and recharge structures, 1.59 lakh watershed development related works, 12.36 crore trees planted and preparation of 1372 block water conservation plans.
- Beyond these numbers, the campaign created a strong environment for bringing together all stakeholders working on water recharge and management. Some states extended the campaign to all their districts, going beyond the water-stressed districts that were selected initially.

### Jal Shakti Abhiyan: Catch the Rain

- 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

Government of India on 22 March 2021, World Water Day.

- Jal Shakti Abhiyan: Catch The Rain campaign, taken up in all 734 districts of the country to nudge the states and stakeholders to create and maintain appropriate Rain Water Conservation Structures, suitable to the soil strata and climatic conditions of the area, with people's participation.
- Activities taken up under this included rooftop Rainwater harvesting systems (RWHS) on buildings- with priority for government buildings, maintenance of old/ building of new check dams/ponds, removal of encroachments of tanks/lakes, de-silting of tanks to increase their storage capacity, removal of obstructions in their channels, repairs to traditional step-wells and other RWHS, use defunct bores/unused wells to recharge aquifers, rejuvenation of small rivers and rivulets, revival of wetlands and protection of flood-banks.

### Conclusion

- Building on the success of the Jal Shakti Abhiyans of 2019 and 2021 in generating awareness amongst the citizens of the country, '**Jal Shakti Abhiyan: Catch The Rain-2022**' campaign was launched by the government in 2022. JSA:CTR-2022 is being taken up in all districts (rural as well as urban areas) of the country.
- The campaign is being implemented from 29 March 2022 to 30 November, 2022 - the **pre-monsoon and monsoon period** in the country with several new interventions in addition to the activities under JSA: CTR-2021.

### Model Questions

1. How can fiscal centralisation affect states capacity on their way to development?
2. Substantiate with examples how tree plantation drives in various states are helping the ecology and economy of the community.
3. Critically analyze the stigma and suffering faced by the transgender community in India. Provide solutions for the same.
4. Can India retaliate the demons of under nourishment in children and achieve the sustainable development goals? Substantiate it with NFHS -5 survey.
5. Is the post of president really a rubber stamp? Critically analyse with respect to 42nd and 44th amendment.
6. Revenue generation by Urban Local Bodies is in a meekly capacity. How can they generate revenue and provide service to the people in an effective manner?
7. Climate resilience economy is the need of the hour. In this context explain how can the government overcome disasters and manage them in accordance with Sendai Framework?
8. Demographic dividend is the new oil for India. Diabetes Mellitus is posing a threat to it. Analyse the reason behind it and provide a suitable solution to enrich the human capital of India.
9. Miyawaki method is gaining tract these days. Discuss the advantages and challenges it pose to the environment.
10. Critically evaluate India's preparedness to tackle floods.
11. Malnutrition is affecting both the rich and poor people and causes a decline in the human capital of India. Critically analyse the reasons behind and provide realistic solution to achieve the Sustainable Development Goals.
12. Discuss how public-private partnerships (PPPs) can play as an effective and sustainable option to strengthen the nation's infrastructure.
13. India's high logistics cost affects its potential to become a major export hub. Enumerate measures taken by the government to address the challenge.
14. Discuss how nutrition security can transform the nation in terms of development.
15. Discuss the significance of GIFT city to the fast growing Indian economy.
16. India's increasing use of imported coal undermines the country's strategy of being "self-reliant" in the energy security sector. Don't you think India has enough coal reserves? Also discuss the causes behind the frequent coal supply crisis India faces.

17. Evaluate the measures taken by the government in reaping the benefits of demographic dividend.
18. Discuss some of the measures taken by the government in uplifting the urban poor in India.
19. In today's world of deepening climate emergency, renewable energy is a hope. Comment and suggest measures to boost renewable energy around the world.
20. Historically scheduled tribes are subjugated in the British time period. Enumerate the constitutional, statutory measures for the protection of Scheduled Tribe in India and the role of NCST in doing the same.
21. Prevalence of under nutrition and anaemia is more among the tribal people in India. Critically analyse the reason behind them and provide measures to overcome the challenges faced by them.
22. North Eastern region is the cultural mosaic of India. In this context enumerate the measures for improving their socio economic aspects through governmental activities.
23. Government of India is trying for the inclusive development of all the people. In this context list out the governmental measures used for the development of scheduled tribe for their inclusion in mainstream developmental process.
24. SDG 6 aims for clean water and sanitation for all. In this context enumerate the measures needed for the efficient methodology of water in agriculture. Also list out the governmental measures in doing the same.
25. Sustainable Development is the need of the hour. Can Nature based solutions Act effectively in the conservation of water in urban areas? Comment
26. Article 19(1)c allows the formation of associations for citizens. Can Water User Association really converge and act successfully as that of civil societies like ADR, PRATHAM and ensure the water management practices among citizens? Substantiate with examples
27. Ground Water stress is visible in many districts in India. Enumerate the aspects of Jal Shakthi Abhiyan in saving the ground Water through participatory methods.