

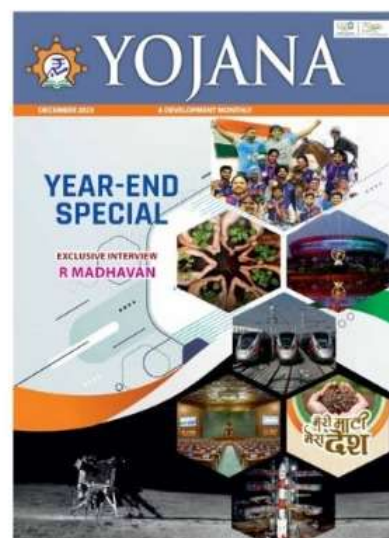
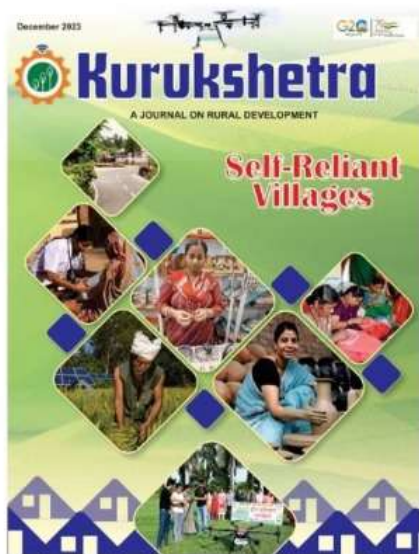
# OFFICERS' Pulse

## IN-DEPTH

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# Contents

1) Improving the capability of the Indian state.....	2	11) Tax 'HFSS' foods as a public health imperative .....	14
2) India, disability inclusion and the power of 'by' .....	4	12) An uphill struggle to grow the Forest Rights Act .....	16
3) Hidden cost of unsustainable agrifood systems.....	6	13) For energy transition, how to create climate for change.....	17
4) The future of healthcare is in our genes .....	7	14) India's Job Crisis.....	18
5) Protecting Basic Structure from judicial arbitrariness .....	8	15) Can India become a developed country in 2047? .....	20
6) Why rural India needs women drone pilots .....	9	16) Truth and reconciliation commission .....	21
7) Calibrating a strategy for India's future growth.....	10	17) Lab to Land: Empowering Farmers Technically .....	22
8) Bridge this deficit between India and Sri Lanka .....	11	18) Sponge Cultivation .....	23
9) India's growing neighborhood dilemmas.....	12	19) Remodel food system.....	25
10) India's defense budgeting and the point of deterrence.....	13	20) Child Poverty.....	27
		<b>Key Takeaways From Other Editorials.....</b>	<b>29</b>
		<b>Model Questions .....</b>	<b>32</b>

## 1) Improving the capability of the Indian state

*(GS2: Important Aspects of Governance, Transparency and Accountability, E-governance- applications, models, successes, limitations, and potential)*

### Context:

- This article explains the paradoxical nature of the Indian state being too big and yet too small. Also it explains the inadequacy of the Indian state in ensuring effective service delivery due to various challenges and suggests measures to overcome the same.

### Position of Indian state compared to other states

**Smallest number of civil servants per capita** in the G20 group.

**Low public sector share in total employment** (at 5.77%).

- This is half the corresponding figures for Indonesia and China, and just about a third of that in the United Kingdom.
- The number of central government personnel in India is 1600 per million compared to 7500 in the United States.

**Lowest per capita number of professionals**

- The per capita number of doctors, teachers, town planners, police, judges, firefighters, inspectors for food and drugs, and regulators is the lowest even among countries at a similar stage of development.

**Relatively lower tax-GDP ratio and public expenditure-GDP ratio.**

### Challenges before the Indian state

- **Outsourcing services:** Due to an inadequate state capability, governments at the Centre and States end up outsourcing services that are better provided by the

public sector, such as primary health.

- **Skill gap:** The skill gap among officials has eroded the ability of the political executive and civil services to make and implement sound policies.
- **Concentration of power:** There is an extreme concentration of policy making and implementation powers within departments.
- **Restricted powers:** Restrictions on the frontline personnel to decide on implementation-related issues foster a culture of mistrust and lack of accountability for poor implementation.
- **The technocratic gap:** Lack of technocratic skills among the policymakers to govern an increasingly complex economy, necessitates the Centre and the States to hire consultancy firms.
- **Lower strength of market watchdog professionals:** The SEBI and RBI have a mere strength of 800 and less than 7000 professionals respectively as against their U.S. counterparts, the U.S. Securities and Exchange Commission and the US Federal Reserve with 4500 and 22000 professionals respectively.
- **Narrowly scoped audits:** Narrowly scoped audits by the Comptroller and Auditor General of India encourages the finance and administrative divisions in government to focus on compliance with rules rather than policy objectives.
- **Appointment of retired officers to regulatory bodies and tribunals:** The beneficiaries of such appointments enjoy hefty salaries without compromising the pensionary benefits from past services which makes civil servants susceptible to political

manipulation and influence their in-service decisions.

- **Higher pay in the public sector:** Apart from providing job security and better working conditions, the risk and skill-adjusted pay in the public sector is higher than that of the private sector due to the substantial salary hikes by the 6th Pay and the 7th Pay Commissions. It breeds corruption in appointments as it makes government jobs very lucrative for all.

### Way forward and the outcome

Measures	Outcome
<b>Separate policymaking and implementation responsibilities</b>	<p>This expedites execution and encourages innovations, making the programmes better suited to local contexts.</p> <ul style="list-style-type: none"> <li>• The National Highways Authority of India is tasked with executing national highway projects, while policy decisions are made at the ministry level. This arrangement has drastically reduced delays and cost overruns.</li> </ul>
<b>Delegate financial and administrative</b>	This can break the vicious cycle of poor delegation and a

<b>powers</b> to the frontline functionaries, with clearly defined processes for using them.	deficient state capability that feeds each other.
An institutionalized and <b>regular lateral entry</b> at the mid and senior levels is needed.	This can help fill the civil services' size and technocratic gap.
Civil servants at different levels can be provided <b>subject-specific training under Mission Karmayogi</b> (National Programme for Civil Services Capacity Building).	Subject-specific training ensures that civil servants acquire specialized knowledge and relevant skills to perform specific tasks, make informed decisions, and handle challenges in their respective domains.
<b>Augment the strength of professional staff with market watchdogs,</b> the Securities and Exchange Board of India, and the Reserve Bank of India (RBI).	This ensures a specialized, comprehensive, and coordinated approach to financial market regulation.
<b>Increase the retirement age of civil servants</b> to say 65, and make an absolute upper limit for all appointments.	A stable workforce with experienced leaders can provide continuity in governance and policy implementation.
<b>Moderate pay raises</b> by the future Pay Commission and a reduction in	This can reduce corruption and increase the chances of socially-driven

the upper age limit for government jobs is needed.	individuals joining the government.
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## 2) India, disability inclusion and the power of 'by'

*(GS2: Mechanisms, Laws, Institutions and Bodies constituted for the Protection and Betterment of these Vulnerable Sections)*

### Context

- This article highlights that disability inclusion, especially in rural areas, is crucial for achieving social justice and economic development.

### What is disability inclusion?

- Disability inclusion is about creating a world where everyone, regardless of their abilities, has the **same opportunities** to participate in all aspects of life. This includes having equal **access to education, employment, transportation, healthcare, and social activities**.
- It is rooted in **assuring the rights of persons with disabilities** and recognising the economic benefits of inclusion.

### Why is disability inclusion needed?

- **Highly vulnerable:** Disability interacts with multiple vulnerabilities including social, economic and gender based inequalities.
- **High volume in rural areas:** Globally, 1.3 billion people live with some form of disability, of which 80% live in developing countries and 70% of them live in rural areas.
- **Exclusionary policies:** Current systems being exclusionary to people with disabilities, results in them experiencing higher instances of poverty, lack of access to education and opportunities,

informality and other forms of social and economic discrimination.

- **Economic benefits of inclusion:** The inclusion of persons with disabilities into the economy can help boost global GDP between 3% to 7%, as per the study by the International Labour Organization (ILO).
- **Perpetuating inequality:** The current employment scenario is in direct contravention of the **United Nations Convention on the Rights of Persons with Disabilities**, which advocates changing attitudes and perceptions towards persons with disabilities and viewing inclusion from a social development dimension.
- **To attain social justice:** The goal of social justice cannot be achieved without the inclusion of persons with disabilities in all spheres of development, starting with rural areas and rural resilience.
- **For them without 'them':** They are viewed as objects of charity and not as persons with agency with an ability to participate in decision-making processes.

### Unique challenges in rural areas

- In rural areas, persons with disabilities tend to face greater challenges when compared to their urban counterparts, with even more **limited access to education and employment**.
- Some **developmental schemes, too, exclude them**.
- Rural areas also have **high agricultural dependence and face the heightened risk of climate calamities** arising from rising sea levels, reduced access to clean water and food, hurricanes, heatwaves and floods, with rural people at the frontlines of these challenges.

## Measures taken

### SPARK Project

- The **ILO and the International Fund for Agricultural Development (IFAD)**, in collaboration with the Women's Development Corporation in Maharashtra, are implementing the **Sparking Disability Inclusive Rural Transformation (SPARK) project**.
- Through this project, persons with disabilities were put in the lead, being identified from the villages, and trained as **Disability Inclusion Facilitators (DIFs)**.
- The DIFs engage with the community, persons with disabilities, caregivers of persons with disabilities, women from self-help groups and other stakeholders to **raise awareness about disability inclusion and barriers to inclusion**.
- The DIFs identify women with disabilities and mainstream them in existing self-help groups for social and economic development, where these women have been able to access funds to start an enterprise.
- The SPARK project has been able to bring an **attitudinal shift towards persons with disabilities**, right from the societal to administrative levels.

- In India, the Central and State governments have various schemes for persons with disabilities and a **unique id for persons with disabilities (UDID) card**, established as part of the **Rights of Persons with Disabilities Act (2016)**.
- **SPARK project:** The bottom-up approach of this project led by Disability Inclusion Facilitators, demonstrates the power of

community engagement and attitudinal shift towards them..

### Way forward

- **Bottom up approach:** A bottom-up approach to disability inclusion is crucial to build productive pathways out of poverty and ensure that persons with disabilities are recognised as active members of society and the economy.
- **Engage private sectors:** In addition to a **robust legal framework**, the private sector should be engaged to provide employment opportunities to those with disabilities.
- **Create awareness:** Awareness should be created to ensure last-mile connectivity of the benefits enumerated for people with disabilities by the government, which begins with the capacity-building of community leaders who can advocate for this at the grass-roots level.
- The voices and needs of persons with disabilities should be prioritized at the center of the global development agenda.
- **True inclusion involves active participation** of people with disabilities, not just actions done for them.

### Conclusion

- Given the historic marginalization of persons with disabilities, a fundamental shift in commitment, solidarity, financing and action is critical.

### 3) Hidden cost of unsustainable agrifood systems

*(GS3: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment)*

#### Context

- This article highlights the impact of intensive agriculture and the need for transition to sustainable agricultural practices.

#### Current issues in agrifood systems

- According to a **United Nations Food and Agriculture Organisation (FAO) report**, unsustainable agricultural practices, particularly **monoculture and chemical-intensive farming**, are generating staggering hidden costs exceeding \$10 trillion globally.
- In middle-income countries like India, these costs constitute nearly **11% of the GDP**, which manifests as **higher poverty, environmental harm, and health-related impact** including undernourishment and unhealthy dietary patterns.
- Current policies **heavily favor rice and wheat production** along with water-intensive cash crops like **sugarcane and arecanut**, neglecting nutrient-rich coarse grains and jeopardizing nutritional security.
  - Area under cultivation of coarse grains dropped by 20% between 1966-1967 and 2017-2018, whereas the area under rice and wheat increased by nearly 20% and 56%, respectively.
  - Water-intensive cash crops like sugarcane and arecanut have also flourished under policies favoring investments in dams and canal irrigation (favoring sugarcane) and free

electricity for borewells (favoring arecanut).

- The Food Corporation of India (FCI) has procured coarse grains that is less than 1% of the total foodgrain procurement.

#### Intensive agriculture and its effects

- Impressive **improvements in agricultural productivity** have been achieved in India over the last five decades by mainstreaming monocropping systems and chemical-intensive farming practices.
- The Green Revolution focused **credit on inputs and marketing of high-yielding varieties of paddy and wheat** on agricultural lands, which now constitute more than 70% of India's agricultural production.
- The infusion of seeds purchased from multinational corporations and fertilizers **undermined seed sovereignty, dismantled Indigenous knowledge systems, and fuelled a shift from diverse crop varieties** and staples such as pulses and millets to monoculture plantations.
- This trend also compromised the nutritional needs of households and resulted in adverse ecological **consequences including soil fertility and excessive extraction of groundwater.**
- This privatization and deregulation of agricultural inputs also increased indebtedness among agrarian households.

#### How can farmers transition?

- **Sustainable agricultural practices:** A systematic **shift away from mono cultivation** of rice and wheat and adoption of sustainable farming practices is essential.
  - For instance, moving from chemical-intensive practices

to non-pesticide management, then adopting natural farming practices, can reduce input costs.

- **Diversification of farms:** Diversified multi-cropping systems, rooted in agroecology principles, could be a viable solution to revitalize degraded land and soil.
  - Millets, whose yield per hectare is comparable to those of rice and wheat, are also more nutritious, grow in semi-arid conditions without burdening groundwater tables, require minimal input, and provide a diversified food basket.
- Practices known by various names locally, like '**akkadi saalu**' in Karnataka, involve **intercropping with a combination of legumes, pulses, oilseeds, trees, shrubs, and livestock**. This approach enables cash provision from commercial crops, food and fodder production, and offers ecosystem services such as nitrogen fixation and pest traps, and supports the local biodiversity. These practices also collectively contribute to improving soil health.
- **Encourage mixed farming:** Farmers can diversify income through value addition, incorporating livestock and poultry.
- **Diversifying farm:** Among the various transition pathways, a visual representation of a diversified farm involves allocating 70% for commercial crops, 20% for food and fodder, and 10% for environmental services like oilseeds (acting as trap crops).

#### Way forward

- Addressing challenges related to **local seeds, institutional arrangements for market access,**

**drudgery, and the need for farm labor** is crucial when envisioning such a transition.

- Scaling up these practices requires **collaboration** among institutions, policymakers, and social groups to articulate **economic incentives** for farmers to shift from high-input monoculture to diversified cropping.

#### 4) The future of healthcare is in our genes

*(GS3: Awareness in the fields of IT, Space, Computers, Robotics, Nano-technology, Bio-technology and issues relating to Intellectual Property Rights)*

##### Context

- This article explains about the potential of gene and cell therapy in India's healthcare landscape.

##### What's in the news?

- Recently Vertex Pharmaceuticals Incorporated and CRISPR therapeutics made a significant announcement regarding **conditional marketing authorisation for CASGEVY, a CRISPR/Cas9 gene editing therapy** designed for the **treatment of Sickle Cell Disease and Thalassemia** in the United Kingdom.
- Likewise in October 2023, **NexCAR 19, India's first Chimeric Antigen Receptor (CAR) T-cell therapy** received approval from the Drugs Controller General of India for leukemia treatment, marking a milestone.
  - NexCAR 19 targets CD19, a crucial biomarker for B lymphocytes and can help in the treatment of blood cancers.

##### Need for gene therapy

- **Multiple health challenges:** As India faces a multitude of health care challenges, ranging from



genetic disorders to cancer, the incorporation of gene and cell therapy into mainstream healthcare becomes an imperative.

- **Mounting burden of hemoglobinopathies:** Over 40 million individuals in India are estimated to be affected by Thalassemia and Sickle Cell Anaemia, together called haemoglobinopathies.
- **Failure of traditional treatments:** Traditional treatments often involve lifelong management, such as regular blood transfusions.

### Significance

- It offers a **revolutionary approach to treating various health conditions**, from genetic disorders like thalassemia and sickle cell anemia to dengue, cancer and HIV/AIDS.
- It **addresses the root cause of genetic disorders** (the genetic mutations responsible for these conditions) potentially offering cures instead of lifelong symptom management.
- It transforms the individual lives of the millions by **providing targeted therapies for rare diseases** and also **addresses a critical gap in healthcare**.
- In cancer, it allows for personalized treatment through CAR-T therapy, targeting cancer cells with modified immune cells, potentially making **treatments more effective and reducing the side effects** associated with conventional approaches.
- It holds potential for **tackling infectious diseases** like dengue, HIV/AIDS and even Covid-19. Eg: anti-Covid-19 mRNA vaccines, such as the Pfizer-BioNTech and Moderna Covid-19 vaccines are gene-therapy products.

### Potential of gene and cell therapy

- India's **large and diverse population** offers opportunities for research and development in gene and cell therapy.
- Gene therapy holds the **potential to alleviate economic burdens** associated with chronic genetic conditions.
- By moving towards curative solutions, long-term healthcare costs can be reduced, paving the way for a more **sustainable and inclusive healthcare model**.

### Challenges and opportunities

- Integrating these therapies into mainstream healthcare requires **infrastructural development, ethical considerations, and collaborative efforts**.
- Investing in research and infrastructure to make these transformative therapies accessible to those who need them is crucial.
- Creating **regulatory frameworks that balance innovation with ethical considerations**, and fostering a supportive ecosystem for biotechnology are crucial steps.
- **Biopharmaceutical companies** need to adapt their business models to deliver affordable therapies.
- **Raising awareness among healthcare professionals and the public** is crucial for broader acceptance and adoption of these therapies.

## 5) Protecting Basic Structure from judicial arbitrariness

*(GS2: Separation of Powers between various organs)*

### Context

- This year marks the **50th anniversary of the Kesavananda Bharati case** and the laying down of the **“Basic Structure Doctrine”** by the Supreme Court of India in

**April 1973.** In this backdrop, this article highlights the crucial role of the Basic Structure Doctrine in safeguarding the fundamental principles and values of the Indian Constitution.

#### About Basic structure doctrine

- In 1973, a 13-judge Constitution Bench ruled in *Kesavananda Bharati v. State of Kerala* that **Article 368 of the Constitution does not enable Parliament to amend the basic framework of the document.**
- The historic ruling came to be known as the “**basic structure doctrine**” — a judicial principle that the Constitution has certain basic features that cannot be altered or destroyed by amendments by Parliament.
- Over the years, various facets of the basic structure doctrine have evolved, forming the **basis for judicial review** of Constitutional amendments.

#### Arguments favoring basic structure doctrine

- The doctrine of Basic Structure **recognised the need for limitations on the amending power of Parliament.** Eg: Basic structure doctrine played a crucial role during emergency in safeguarding civil liberties.
- It serves as a **vital check and balance against potential overreach by the legislature and executive.**
- The doctrine **recognises the most fundamental features of the Constitution** and protects those features from any form of amendments or legislative interventions.

#### Limitations of basic structure doctrine

- **Open-ended nature:** Debates continue on the specific features

that constitute the “Basic Structure.”

- **Judicial overreach:** Some argue that the doctrine gives exclusive powers to the SC to determine what constitutes the “Basic Structure” or the “Basic Features of the Constitution” and in that process, undermines the mandates of other institutions.

#### Way forward

- To deal with the problem of judicial arbitrariness in deciding what constitutes the Basic Structure, a new imagination of the doctrine should be sought to strengthen it and make it conform to the constitutional text.
- Judicial transparency and accountability are essential in maintaining public trust in the judiciary and the legitimacy of the doctrine.

## 6) Why rural India needs women drone pilots

*(GS3: E-technology in the aid of farmers)*

#### Context

- This article discusses the **potential of the NAMO Drone Didi scheme** for empowering rural women and revolutionizing agriculture in India.

#### About NAMO Drone Didi initiative

- NAMO Drone Didi, is an initiative recently announced by the Prime Minister of India which aims to supply **drones to 15,000 women Self Help Groups (SHGs)** to rent to farmers for agriculture purposes.
- The scheme is supported by the newly created network of **Pradhan Mantri Krishi Samridhhi Kendras (PMKSK)**, which provide agricultural services under one roof.
  - PMKSK are centers where farmers can buy not only fertilizers and seeds but also

implement soil testing and provide useful information about farming techniques.

### Significance of the initiative

#### Do you know?

Though India is the second-largest producer of fertilizers, it is also the second-largest importer due to inadequate availability of natural resources — gas, phosphatic and potassic minerals, etc.

- **Harnessing technological innovation:** The NAMO Drone Didi scheme presents a promising example of leveraging technological advancements like drone technology to empower rural women.
- **Multifaceted benefits:**
  - **Women empowerment:** By placing cutting-edge technology in the hands of rural women, the initiative makes them the epicenter of the rural economy, spearheading the new agricultural revolution.
  - **Modernizing agriculture:** It addresses the need to modernize our agricultural practices and increase agricultural productivity
  - **Economic opportunities:** The scheme creates new work avenues for women like pilots, mechanics, and spare-part dealers and opens up new opportunities for the country's young and dynamic start-ups to enter the emerging field of drone aeronautics, which has huge untapped potential.
  - **Addressing farmer challenges:** Drones can facilitate efficient fertigation necessitated by the emergence of innovative

new liquid fertilizers like Nano Urea and Nano DAP and reduce dependence on imported fertilizers.

- **Environmental benefits:** Precise drone application can minimize pesticide overuse and promote sustainable practices.
- **Focus on rural development:** The text emphasizes the scheme's potential to revitalize rural economies and bridge the urban-rural divide.

### Conclusion

- Thus the NAMO Drone Didi scheme will usher in a new chapter of women's empowerment and effectively address multiple issues by providing an opportunity for rural women to be at the centre stage of economic activity and rural prosperity.

## 7) Calibrating a strategy for India's future growth

*(GS3: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment)*

### Context

- This article **explains India's future growth prospects**, highlighting the need for India's future growth strategy to be calibrated in view of the changing global conditions.

### Current growth projections

- India's growth in 2023-24 is currently projected by the Reserve Bank of India at 7% while the International Monetary Fund (IMF) and the World Bank have pegged it at 6.3%.

### Why should the future growth strategy be recalibrated?

### Deglobalization trends and geopolitical conflicts

- Deglobalization trends and geopolitical conflicts such as the Russia-Ukraine war and the Israel-Hamas war that lead to breaks in supply chains as well as disruptions in international settlements necessitate a **shift from export-led growth to a more domestic-driven model.**

#### **Declining savings and investment**

- Declining household financial savings and the real investment rates poses a significant risk to India's growth potential. It declined to 5.1% of GDP in 2022-23 from an average of 7.8% during the pre-COVID-19 period of 2015-16 to 2019-20.
- Achieving a **7% growth rate requires an investment rate of 35% of GDP**, which can be achieved through a combination of **higher domestic savings and foreign capital inflows.**

#### **Employment and skilling:**

- According to United Nations population projections, the **share of India's working age population is projected to peak at 68.9%.**
- **Increased allocation for skill development and training** is crucial to ensure employability of the growing workforce.
- Non-agricultural sectors need to generate enough jobs to absorb labor released from agriculture.
- Facilitating absorption of productivity-enhancing technologies including Artificial Intelligence (AI) and Generative AI would add to overall growth.

#### **Climate change and green growth:**

- India's commitment to **carbon emission reduction needs to be balanced with economic growth.** India's own initiatives include the Green Grids Initiative (GGI) and One Sun One World One Grid

(OSOWOG), emphasis on the use of electric vehicles and ethanol-based and hydrogen fuels.

- In the COP26 Summit, in 2021, India had committed to reducing total carbon emissions by one billion tonnes between 2021 and 2030 and achieving the target of net zero emissions by 2070.
- Emphasis on service sector growth and climate-friendly technologies can help mitigate the negative impact on growth.

#### **Fiscal responsibility targets:**

- Adhering to fiscal responsibility targets is essential to sustain growth
- Bringing down the combined fiscal deficit and debt-to-GDP ratios to down to 6% and 60% is crucial for long-term sustainable growth.
  - This would enable achieving a **balance or surplus on the revenue account** of the central and State governments, which in turn would **augment the overall savings rate** of the economy.

#### **Conclusion**

- This raising the savings and investment rates, improving the skill acquisition of the young entrants to the labor market and adopting a technology mix which is employment friendly are issues on which the country must focus to achieve a growth rate of 7% to 7.5%.

## **8) Bridge this deficit between India and Sri Lanka**

*(GS2: India and its Neighborhood-Relations)*

#### **Context**

- This article **analyzes the India-Sri Lanka relationship**, particularly

focusing on the potential for deeper economic integration through infrastructure development and trade agreements.

### Existing deficits between India and Sri Lanka

#### Land connectivity proposal:

- The proposed land connection between Rameswaram in TamilNadu with Talaimanar in the Northern Province of Sri Lanka offers significant economic benefits for both countries, but has faced political opposition in Sri Lanka.

#### Lagging progress in energy and trade:

- Despite signing **agreements on energy** and trade decades ago, progress has been slow, particularly compared to India's relationship with Bangladesh.
- The grid interconnection project, despite its potential benefits, has been stalled for over 13 years.
- The economic potential of the **India-Sri Lanka Free Trade Agreement** signed in 1998 remains largely untapped as it could not enter into an economic and technology cooperation agreement, despite holding talks for years on Sri Lanka's potential and challenges.

#### Potential of India-Srilanka ties

- Sri Lanka's history and political landscape have often hindered progress, but the country's economic potential remains high. For instance,
  - **India accounted for 26% of Sri Lanka's imports** though certain portions of imports were through credit lines offered by India in the wake of the economic crisis.
  - In the area of tourism, which is a major source of revenue for Sri Lanka, **India remained the largest single country of tourist**

**arrivals**, with its share being 17% of the overall number of arrivals.

- Recent developments like **air and ferry services, MoU in the dairy sector** between the two countries are positive signs of increasing cooperation.
  - Resumption of air services between Chennai and Jaffna.
  - The launch of passenger ferry services between Nagapattinam and Kankesanthurai
  - A joint venture agreement among India's National Dairy Development Board, the Gujarat Cooperative Milk Marketing Federation and Cargills of Sri Lanka for self-sufficiency in the dairy sector

#### Way forward

- Sri Lanka should **learn from Bangladesh's success** in building a strong economic relationship with India.
- Sustained momentum in recent initiatives and a focus on practical projects like the dairy joint venture are crucial.

## 9) India's growing neighborhood dilemmas

*(GS2: India and its Neighborhood-Relations)*

#### Context

- This article **analyzes the dilemmas India faces in its neighborhood** and the challenges posed by the changing regional geopolitical landscape.

#### Dilemmas and causes:

##### Political

- **Rise of anti-India regimes:** The emergence of anti-India governments in the region, like in the Maldives, and the potential for a

similar situation in Bangladesh, presents a significant challenge.

### Structural

- **China's growing influence:** Beijing's economic and diplomatic outreach, coupled with India's limited ability to meet the region's material needs, creates a tilt towards China.
  - Examples include growing entanglement of the region's smaller states in the **Belt and Road Initiative (BRI) and other Chinese projects.**
  - China's outreach to South Asian states like **Taliban-led Afghanistan, military-ruled Myanmar and crisis-hit Sri Lanka.**
- **Shifting regional architecture:** The diminishing presence of the US has created a power vacuum that is filled with China and is becoming disadvantageous for India.
- **Misassumptions about South Asia:** The belief that India's cultural ties and historical primacy would automatically translate into regional leadership and would help the country deal with the neighborhood better than those without intimate knowledge of the region has proven inaccurate in the face of China's rise.
- **India's policy stance:** New Delhi's focus on status quo and engagement with ruling elites in the region often alienates other actors and opposition leaders.

### Way forward

- **Acknowledge the new reality:** India needs to accept that the primacy it enjoyed over South Asia no longer exists and adjust its strategy to the presence of a powerful competitor like China.
- **Seek external partnerships:** Engaging friendly external actors

can help counter China's influence and promote a more balanced regional order.

- **Multi-actor engagement:** Indian diplomacy should move beyond just dealing with governments and actively engage opposition parties, civil society, and other stakeholders in neighboring countries.
- **Increase diplomatic capacity:** Addressing the shortage of diplomats and investing in personnel is crucial for effectively implementing India's foreign policy goals in the region.

## 10) India's defense budgeting and the point of deterrence

*(GS3: Security Challenges and their Management in Border Areas)*

### Context

- The article analyzes the current state of India's defense preparedness and the challenges it faces.

### Challenges faced by India's defense sector

- **Stagnant defense budget:** India's defense budget has been stagnant in real terms. Defense expenditure (revenue and capital), as a percentage of central government expenditure, has been declining — from around 16.4% in 2012-13 to **13.3% in 2022-23.**
- **Declining squadron strength:** Reduced budget allocation leads to a decline in the number of active squadrons in the Air Force and concerns about overall readiness.
  - For instance, IAF faces a critical shortage of fighter aircraft, with just 32 squadrons currently operational.
- **Persistent threats:** The evolving geopolitical landscape, with ongoing tensions on both the northern and western borders,

necessitates a clear understanding of potential threats and long-term planning for war scenarios.

- **Challenges in indigenous capabilities:** While indigenization is desirable, building a local defense industry takes time, necessitating a balance with imports to ensure immediate preparedness.
- **Low R&D expenditure:** The **Global Innovation Index 2022** pegs India's research and development expenditure at just **0.7% of its GDP** which places it 53rd globally. (China's R&D expenditure is 2.54% of its GDP).
- **Shifting military strategy:** A shift from short sharp conflicts to extended war scenarios as seen in case of Russia-Ukraine war necessitates the Indian military to be well equipped and modernized.

#### Government measures

- **Innovations For Defence Excellence (iDEX) scheme:** An initiative to achieve self - reliance and foster innovation and technology development in Defence and Aerospace by engaging Industries including MSMEs, start-ups, individual innovators, R&D institutes and academia.
- **Service-specific projects** such as the Baba Mehar Singh competition for unmanned aerial vehicles by the IAF.
- **Restructuring of the Ordnance Factory Board**
- **Promulgation of negative lists for imports** instill confidence in the private sector for assured contracts.

#### Way forward

- Substantial **increase in defense spending** is necessary to address existing deficiencies and deter potential threats.
- A **continuum in policy making with a balanced defense budget**

driven by national security imperatives considering both immediate and long-term security challenges is the need of the hour.

### 11) Tax 'HFSS' foods as a public health imperative

*(GS2: Issues Relating to Development and Management of Social Sector/Services relating to Health, Education, Human Resources)*

#### Context

- The article discusses the **global issue of rising consumption of High Fat Sugar Salt (HFSS) foods**, particularly in low- and middle-income countries, and emphasizes the growing **health and economic impact** of this trend. It also highlights the need for interventions, including fiscal measures like **taxation**, to address the negative consequences associated with HFSS consumption.

#### What are HFSS foods?

- According to **Ministry of Women and Child Development**, HFSS foods may be defined as foods (any food or drink, packaged or non-packaged) which contain low amounts of proteins, vitamins, phytochemicals, minerals and dietary fiber but are **rich in fat (saturated fatty acids), salt and sugar and high in energy (calories)** that are known to have negative impact on health if consumed regularly or in high amounts.

#### Need to tax HFSS foods

- **Health impact:** The consumption of High Fat Sugar Salt (HFSS) foods is one of the major risk factors to a host of health issues that include obesity, diabetes and high blood pressure.
  - According to a World Bank report of 2019, worldwide, 70% of all overweight and

obese people live in Low- and Middle-Income Countries.

- **Economic impact:** The economic impact of overweight and obesity in India was estimated at \$23 billion in 2017 which if left unchecked can cause a potential future burden of \$480 billion by 2060.
- **Highly vulnerable Indian population:** India being world's largest producer and consumer of sugar in 2022, the country has seen an alarming surge in consumption of HFSS foods.
- **India's shift in dietary habits:** About 50%-60% of edible sugar, salt and fat produced in India is consumed by the processed food industry, the sale of which has skyrocketed over the past decade indicating a disturbing trend in dietary habits.

#### Solution

- Taxation is considered to be an **effective means to reduce the consumption** of HFSS products as most consumers are price responsive towards them.

#### Arguments for HFSS tax

- **Market failures** associated with HFSS consumption create **negative externalities** (societal costs in the form of increased health-care expenditures) and **internalities** (harm to consumers).
- A tax can act as a **deterrent, incentivize product reformulation, and encourage healthier choices, potentially reducing societal burdens.**
- Unlike **sin taxes on tobacco and alcohol**, a well-designed HFSS tax can be non-regressive and fiscally neutral, with differentiated rates based on nutritional content to encourage healthier options.
- Also current GST rates on ultra-processed foods, such as salty

snacks and sugar-sweetened beverages (SSBs), do not adequately align with nutritional content that show limited impact on altering consumption baskets in favor healthier alternatives.

- For example, Salty snacks are taxed at 12% regardless of their salt content.

#### Global trend towards HFSS taxation

- Several countries, including **Denmark, France, Hungary, Mexico, South Africa, the US and the UK**, have implemented taxes on HFSS foods as a way to combat their negative impacts.
- **Colombia's "junk food law"** introduced a gradually increasing levy on ultra-processed foods, providing a model for other nations.
- In India, **Kerala** had also introduced a '**fat tax**' way back in 2016, which later got subsumed into India's Goods and Services Tax in 2017.
- This demonstrates the growing recognition of the effectiveness of such measures in influencing consumer behavior and promoting healthier diets.

#### Benefits of HFSS tax

- Discourages unhealthy consumption habits through price increases.
- Encourages manufacturers to reformulate products with healthier ingredients.
- Promotes healthier food choices by making them more affordable and accessible.
- Reduces societal costs associated with Non Communicable Diseases.

#### Conclusion

- HFSS taxation in India should not be merely seen as an economic or fiscal policy concern but it deserves to be **considered a public health imperative.**



- When combined with other measures such as **promotion of nutrition literacy and effective food labeling**, it can be a more potent tool to combat NCDs by creating a more sustainable and equitable food system.

## 12) An uphill struggle to grow the Forest Rights Act

*(GS2: Mechanisms, Laws, Institutions and Bodies constituted for the Protection and Betterment of these Vulnerable Sections)*

### Context

- This article analyzes the **Forest Rights Act (FRA) in India**, both its potential and the challenges in its implementation.

### Evolution of Forest Rights Act, 2006

- The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 was enacted to **address historical injustices inflicted on forest-dwelling communities** through colonial and post-colonial forest policies.

### Historic injustices

#### Colonial forest policies:

- The "eminent domain" principle used by the British colonial government by enacting **Indian Forest Act, 1878** disregarded the customary rights (rights to access and use forest resources based on tradition and custom) of forest dwelling communities, declaring forests state property.
- This led to a series of discriminatory measures:
  - **Ban on shifting cultivation** as forests were seen as primarily a timber resource.
  - **Biased land surveys** and incomplete settlement of agricultural lands.
  - **Creation of "forest villages"** with bonded labor.

(forest land was leased for agriculture in return for compulsory labor).

- **Restricted access to forest produce** and is always at the mercy of the forest bureaucracy.
- **Exclusion of forest dwelling communities from forest management**

#### Post-independence challenges:

- The **injustices continued**, with forest areas of princely states and zamindars annexed without considering existing residents.
- **Displacement** due to development projects without proper compensation or alternative land. Eg: Displacement due to construction of dams.
- Ongoing forest exploitation was masked as national interest.

#### Further injustices through conservation laws:

- **Wildlife Protection Act, 1972 and Forest Conservation Act, 1980** further marginalized communities through forced relocations when creating sanctuaries and national parks and lack of consent in forest diversion projects.

#### How did the Forest Rights Act, 2006 address these challenges?

- It **recognises individual forest rights (IFRs)** to continue habitation and cultivation or other activities that existed before December 2005.
- Forest villages are to be converted into **revenue villages** after full rights recognition.
- The issue of access and control is addressed by **recognising the rights of village communities to access and use forests** and to own and sell minor forest produce.
- It also ensures them to **manage forests within their customary**

- boundaries**, including in sanctuaries and national parks.
- It lays down a democratic procedure for identifying whether and where wildlife conservation may require curtailing or extinguishing community rights.
  - Having rights over a forest empowers communities to have a say in whether any part of it can be diverted for other purposes, such as mining, infrastructure projects, or conservation initiatives.
  - Even if a community agrees to some form of forest diversion, the FRA recognizes their right to fair compensation for the loss of resources and potential livelihood impacts.
    - The Niyamgiri case in India is a landmark example of how communities successfully asserted their veto right against a mining project proposed within their customary forest boundaries.

#### Significance of FRA, 2006

- It **acknowledges these historical injustices** and their continuation post-Independence.
- It ensures **decentralized forest governance**, linking management authority and responsibility to community rights.

#### Challenges in implementation

- Focuses on **Individual Forest Rights at the expense of Community Forest Rights**, undermining the Act's potential for decentralized forest governance.
  - Maharashtra, Odisha, and, more recently, Chhattisgarh, are the only States to recognise CFRs substantially.
- **Resistance from the forest bureaucracy** and apathy from other government departments.

- **Misuse of technology and lack of transparency** in claims filing and recognition processes.

#### Conclusion

- To realize the enormous potential for community-led forest conservation and sustainable livelihoods, the spirit and the intent of the FRA should be appreciated by the political leaders, bureaucrats and environmentalists. This will pave a way for highly democratic forest governance.

### 13) For energy transition, how to create climate for change

*(GS3: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment)*

#### Context

- This article emphasizes the **importance of tripling renewable energy** and leveraging multilateral institutions to achieve net-zero emissions and ensure energy access for all.

#### Need for tripling renewable energy

- Recent multilateral events, including the **COP28, the New Delhi Leaders' Declaration of G20 and Nairobi Declaration** have emphasized the urgency of transitioning towards renewable energy for achieving net-zero emissions.
- Around 675 million people (8 percent of the world's population) **lack access to affordable and reliable energy**, hindering development and equity.
- Tripling renewables is crucial to **achieving the well below 2-degree Celsius target** and ensuring clean energy access for all.
- Decelerated progress on Sustainable Development Goals calls for renewed focus on effective multilateral engagement.

### How can multilateral institutions help achieve net zero emissions?

- **Technology transfer:** Multilateral institutions play a role in **facilitating technology transfer** through the creation of patent pools.
- **Mitigating long-term investment risks:** Multilateral institutions are equipped to overcome the challenge associated with mobilizing **long-term low-cost finance for clean energy** through mechanisms like payment guarantee and partial-risk guarantees.
  - Example: The International Solar Alliance's **Global Solar Facility**, aiming to leverage \$250 million for 1,600 MW of solar projects in Africa, is an example of such risk mitigation strategies
- **Fortifies regulatory and institutional frameworks:** MLIs using their convening power can drive energy transitions towards strengthening **regulatory support, institutional mechanisms**, conducive business models and access to low-cost finance.

### Way forward

- To enable and sustain this transition, **strengthening partnerships between governments, the private sector and multilateral institutions** is essential.
- The potential of both existing and new multilateral institutions should be harnessed, steering global communities toward a more promising trajectory. Example: The inclusion of the African Union in the G20 is a noteworthy multilateral initiative.
- Renewed emphasis on energy access as a foundational indicator is

essential for achieving progress across all SDGs.

### Conclusion

- The tripling of renewables is key for **energy access, energy security, and improved wellbeing.**

## 14) India's Job Crisis

*(GS3: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment)*

### Context

- The Indian economy has historically been characterized by both **Open Unemployment** (Open unemployment is the situation when a person is willing to work, is educated but is unable to get a job and work) and high levels of informal employment.
- To provide some perspective: India's workforce rose from 460 million in 2017-18 to roughly 560 million in 2022-23.
- There is an increase in 100 million workers over a 5 year period. But, during this period, **the employment in the labor intensive manufacturing sector grew just above 2 million** on average each year.
- This indicates a **lack of adequate employment opportunities in the formal sector and at the same time a rise in informal employment.**
- For instance, 7 out of 10 new entrants to the workforce were self-employed.
- These new entrants were more engaged in small establishments or as low paid helpers in household enterprises, and not in regular salaried or casual wage employment.
- Alongside this increase in self employment, there has also been a

steady rise in the demand for work under **MGNREGA**.

- The number of individuals working under the scheme rose from 7.5 crores in 2017-18 to 8.75 crores in 2022-23.
- It is worrying that such trends have persisted despite growth firming up.
- One side, we are the fastest growing economy and the other side is filled with contradictions of unemployment.

### **Prerequisites for Employment Opportunities:**

Employment opportunities are based on 4 important following factors:

1. **Demand for Output:** Labour demand in the formal sector rises when demand for output rises.
2. **Technology:** Labour demand depends on the state of the technology which dictates the number of workers that firms need to hire to produce one unit of output.
3. **Output Growth Rate:** Policies that promote higher output growth rate increases employment growth rate.
4. **Labour Productivity Growth Rate:** If labour productivity growth rate rises, employment growth rate falls for a given output growth rate.

However, despite increased output growth rate the jobs have not increased commensurately.

### **Joblessness despite Growth:**

In India, the employment growth rate remained unresponsive despite a significant rise in GDP growth rate. This reflects the situation of Jobless Growth.

There are **two cases of Jobless Growth Regime**.

**First Case:** When responsiveness to labor productivity growth rate to output growth rate is weak.

- The possibility of jobless growth in this case emerges exclusively on the account of automation and

introduction of labor-saving technology.

- However, by improving the output significantly, the job loss caused by automation can be compensated with new opportunities.
- So, here the solution to the job crisis is more rapid growth.

**Second Case:** (India's Case): When responsiveness to labor productivity growth rate to output growth rate is high.

- Here the positive effect on output growth rate on employment fails (Since the labour productivity is high, the need for workforce falls).
- Employment growth rate in such regimes cannot be improved by mere GDP growth.

It is this distinct form of jobless growth regime in India that makes India's macroeconomic policy more challenging and also results in unintended consequences.

### **Unemployment and Unintended Consequence:**

- Limited jobs result in strained income levels as the individuals settle to informal low paid jobs.
- Failing to meet the consumption needs, households tend to meet their needs by availing unsecured personal loans.
- As per RBI data, outstanding unsecured personal loans of banks rose from Rs 10.5 lakh crore in March 2022 to Rs 14.5 lakh crore in September 2023.
- This does not include loans by NBFCs.
- This increases the chance of increased default thus causing NPA's to further rise.

### **GDP and Job Conundrum:**

- India inherited policies and reforms which stimulates the output growth rate thus generating more jobs.

- But despite such efforts, the country still struggles to create adequate formal jobs.
- So the employment challenge can no longer be met only through more rapid output or GDP growth.
- Rather a separate policy focus is needed on employment in addition to the focus on GDP growth.

#### Way Forward:

- Employment policies need to **address both supply side and demand side components.**
- One supply side skilled quality workforce has to be created by improved education, health, skill etc.
- On the demand side, direct public job creation will be needed.
- Financing such policies requires the reorientation and a more imaginative use of the current macroeconomic framework to pursue a constructive employment agenda.
- The situation calls for a more measured, nuanced assessment of the country's growth prospects.

### 15) Can India become a developed country in 2047?

*(GS3: Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment)*

#### Context

**Developed countries** are High Income Countries, high quality of life, advanced technological infrastructure relative to other less industrialized nations.

#### According to World Bank,

- High Income Economies are those with an annual per capita Gross National Income of more than \$13,846
- Upper Middle-Income Economies: Between \$4,466 and \$13,845
- Lower Middle-Income Economies: Between \$1,136 and \$4,465

- To become a High Income Economy, **India** must cross the barrier of **per capita GNI \$13,846 by 2047.**

#### Is it Plausible?

- India took **67 years** from 1947 to 2014 to become a 2 trillion-dollar economy.
- From 2004 to 2014, GDP more than doubled from \$0.71 trillion to \$2.04 Trillion.
- By 2024 India will add another 2 trillion dollars to become a **4 trillion dollar economy.**
- In purchasing power parity terms India is already a **10 Trillion Dollar Economy.**
- With the government giving more push to infrastructure, including toilet facilities, drinking water, electricity, pucca houses under Awas Yojana, have augmented welfare as well as growth in economy.
- Simultaneous push on human development through quality education and skill formation, coupled with liberal market policies, the dream of Viksit Bharat by 2047 could be within India's reach.

#### Per-capita Achievement:

- Crossing the threshold requirement of \$13,845 for the high income category is **not going to be an easy task.**
- At the same time one should not forget that **India's per-capita increased 2.5 times** from \$624 in 2004 to \$1,560 in 2014.
- If India can keep up that momentum over the next two and a half decades, it can hope to reach the high-income threshold.

#### Other supporting indicators:

- **Inequality remains almost the same in India today** when compared to 2014 as per Gini Index.

- However, when compared to **BRICS** nations, our inequality level is low.
- India's inflation is well within the target range of **4+/- 2 percent**.
- India has a **forex reserve of more than \$600 billion**, with which RBI can avert any sudden depreciation of currency.

If India stays the course with an eye on Growth with contained inflation and innovations, its Sankalp of Viksit Bharat can materialize by 2047.

**Viksit Bharat** is a vision of the Government of India to make India a developed nation by 2047, the 100th year of its independence. The vision encompasses various aspects of development, including economic growth, social progress, environmental sustainability, and good governance, among others

## 16) Truth and reconciliation commission

*(GS2: Statutory, Regulatory and various Quasi-judicial Bodies)*

### Context:

- Justice Sanjay Kishan Kaul of the Supreme Court of India also recommended the constitution of a **truth and reconciliation commission** to heal the wounds and suffering of the victims of the insurgency that gripped the Kashmir Valley, particularly in 1989-90.

### What is the Truth and Reconciliation Commission?

- Truth and reconciliation commission is usually setup to study the pattern of human rights violations that took place either during an earlier regime or military dictatorship or arising out of insurgency or similar grave acts of violence

### Five main characteristics of truth commissions

1. **Focus on the past**, rather than ongoing events
2. Investigates a **pattern of events** that took place over a period of time
3. It engages directly and broadly with the **affected population**, gathering information on their experiences.
4. It will be a **temporary** body, with the aim of concluding with a final report
5. It will be **officially authorised or empowered by the state or appointed by agencies** like the United Nations.

### India's Case:

- The most important function of a truth and reconciliation commission as suggested by Justice Kaul is to hold **public hearings and record patterns of rights violations**, as narrated by the victims as well as by the perpetrators in the Kashmir Valley
- However in the process of investigation, any imputations against the Indian Army may not go down well with the government.
- Therefore, the mandate of the commission needs to be chosen carefully without having an adverse impact on the overall credibility of the security forces, including the armed forces.
- So the parameters of truth and reconciliation commission need to be defined carefully.

### Delayed Reparation?

- The truth and reconciliation commission, even if constituted without further delay, will have only limited utility since many victims might not be alive to seek closure of their loss and violations.
- Nevertheless, the victims of rights violations still reserve the right of reparation (recognised even by the UN) which may take all or any of

the five forms, i.e., restitution; compensation; rehabilitation; satisfaction, and guarantees of non repetition.

- **Restitution** includes all measures aimed at reestablishing the original situation before the rights violations happened. Examples include return to one's place of residence or the return of property.
- **Monetary compensation** for damages and pension may solve some problems of the poor victims, though the neediest might not be alive to the situation to get due benefits.
- **Rehabilitation** could restore reputation and may include legal services if needed.
- **Satisfaction** may assume the form of a public apology, commemoration, tribute to victims and so on.
- **The guarantee** of a non repetition may include measures contributing to the prevention of further violations as well as training for armed and other security forces.

Despite Jammu and Kashmir being a case of delayed reparation, some relief can still be given to the victims within each parameters given above to rebuild their lives.

## 17) Lab to Land: Empowering Farmers Technically

*(GS3: E-technology in the aid of farmers; Technology Mission)*

### Context

- According to UN projections, the **population of India** is expected to reach **billion by 2050**. **Qualitative and quantitative feeding** of such a huge population is a **formidable challenge** owing to deteriorating natural resources, shrinking arable land, and the deleterious impacts of global climate change.

- However, **emerging technologies and farm innovations** have the potential to be game changers in ensuring food security for all.

### Lab to Land Programme

- The **Indian Council of Agricultural Research (ICAR)**, the national apex body for agricultural research, education, and extension is spearheading the '**Lab to Land programme**'.
- The programme covers all activities pertaining to the **transfer of technologies, innovations, and information to farmers and fields**.
- ICAR implements the 'Lab to Land programme' through its 731 strong network of **Krishi Vigyan Kendras (KVKs)** across the country.

### Role of KVKs

- KVKs were introduced in 1974 in Puducherry on pilot basis for the **transfer of agricultural technologies and knowledge to farmers**.
- Currently, it is the only institution at the district level that acts as a **knowledge and resource centre with a two-way link between farmers and researchers**.
- Its major and regular activities include
  - **on farm testing** to assess the location specificity agricultural technologies under various farming systems;
  - **conducting frontline demonstrations** to establish the production potential of technologies on farmers' fields;
  - **capacity development** of farmers and extension personnel;
  - acting as a **knowledge and resource centre** of technologies;

- providing farm-advisories to farmers.

#### Other Initiatives towards Lab to Land

- More than 3.5 lakh Common Service Centres (CSCs) in rural areas have been linked with the KVKs for providing technological solutions to the farmers visiting CSCs with agriculture related problems.
- 'Mera Gaon, Mera Gaurav' (My Village, My Pride) is a novel Lab to Land initiative by ICAR in which groups of scientists identify/adopt villages for dissemination of technologies, and information to farmers.
- ARYA (Attracting and Retaining Youth in Agriculture) is a specialised initiative which aims to create job opportunities in rural areas by skilling/training youth in various agro-enterprises.
- The Ministry of Agriculture and Farmers' Welfare has launched the mKISAN portal which aims at quick transfer of technology to farmers.
- 'Kisan Suvidha' is an omnibus mobile app developed by the Ministry of Agriculture and Farmers' Welfare which facilitates transfer of information to farmers on some critical parameters such as weather, market prices, plant protection, cold storage, etc.

#### Conclusion

- Various government and private agencies are supporting Lab to Land initiatives through social media platforms as well. Various modules of extension services in India are moving and converging in a fast-track mode to deliver best knowledge services and transfer of technologies to bridge the gap.

## 18) Sponge Cultivation

(GS3: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment)

#### Context

- In the era of frequent climate change women in Zanzibar (a Tanzanian archipelago off the coast of East Africa) have resorted to sponge cultivation to sustain their livelihoods.

#### About Sponges

- Sponges are simple aquatic organisms that belong to the phylum Porifera.
- They are one of the oldest multicellular life forms on Earth, with a lineage dating back over 600 million years.
- Sponges are similar to other animals in that they are multicellular, heterotrophic, lack cell walls, and produce sperm cells.
- Some of them are radially symmetrical, but most are asymmetrical.
- The shapes of their bodies are adapted for maximal efficiency of water flow through the central cavity, where the water deposits nutrients and then leaves through a hole called the osculum.
- Many sponges have internal skeletons of spicules (skeletal-like fragments of calcium carbonate or silicon dioxide), and/or spongin (a modified type of collagen protein).
- All adult sponges are sessile aquatic animals, meaning that they attach to an underwater surface and remain fixed in place (i.e., do not travel) while in larval stage of life they are motile.
- Feeding behaviour
  - Although most of the species of sponges feed on bacteria and other microscopic food in the water, some host





sponge populations, promoting **sustainable resource management**.

- Sponge farming can create **economic opportunities for local communities** by supporting **livelihoods** in coastal areas.
- Sponges are **filter feeders** and can help improve water quality by removing particles and nutrients from the surrounding environment. Cultivating sponges in certain areas may contribute to **local bioremediation efforts**.
- **Sponges** can play a role in **carbon sequestration** by absorbing and storing carbon dioxide from the surrounding water. This can contribute to efforts aimed at **mitigating climate change**.

#### Drawbacks of sponge cultivation

- Sponges can be susceptible to various diseases and parasites. Controlling and preventing the spread of pathogens within cultivated populations is a significant challenge in sponge farming.
- The growth of unwanted organisms, known as **biofouling**, on sponge cultivation structures can be a challenge. Biofouling can affect water flow and nutrient availability, negatively impacting sponge growth.
- The success of sponge cultivation also depends on **market demand and economic viability**. If there is insufficient demand for cultivated sponges or if production costs are high, the economic sustainability of sponge farming may be compromised.

#### Conclusion

- It is important to foster collaboration between scientists, aquaculture practitioners, regulators, and local communities

for the responsible development of sponge cultivation.

## 19) Remodel food system

*(GS3: Major Crops - Cropping Patterns in various parts of the country, - Different Types of Irrigation and Irrigation Systems)*

#### Context

- With climate change on the rise, there is a growing discussion on the need to re-engineer the current model of agriculture.

#### Agriculture in a warming world

- Agriculture today contributes to **greenhouse gas emissions** in a variety of ways, such as through **methane emissions** from **rice cultivation** and **livestock** and **nitrous oxide emissions** from the use of **synthetic fertilizers** and manure on fields.
- The large-scale clearing of forests, including rainforests, to produce beef cattle and even palm oil adds to the crisis of our climate-risked world.
- The multi-continent transport for food processing and sale has led to **over-exploitation of resources, pollution, and fossil fuel consumption**.
- Further, farmers are increasingly using expensive inputs such as **fertilizers, seeds** and **pesticides**. This adds to their **debt burden**, making them even more vulnerable to crop losses and extreme weather impacts.

#### Impact of climate change on Food Security

- **Rising temperatures** can lead to heat stress, affecting crop yields. Extreme **heat events** during **critical growth stages** can reduce the productivity of major crops like wheat, rice, and maize.
- Agriculture is highly dependent on **water**, and reduced water

availability can hinder crop production.

- Climate change can influence the **distribution and prevalence of pests and diseases**. **Warmer temperatures and altered humidity levels** may create more favorable conditions for certain pathogens and pests, affecting crop health.
- **Rising sea levels** can lead to **saltwater intrusion** into coastal areas, compromising soil fertility and making it challenging to grow crops.
- Climate change often exacerbates existing **vulnerabilities**, disproportionately affecting communities that are already **marginalized** or dependent on **subsistence farming**

### Principles of Agricultural model for livelihood, nutrition, and nature security

- **Low input-based agricultural model**
  - This model focuses on **minimizing the use of external inputs**, such as **synthetic fertilizers, pesticides, and energy**, to achieve sustainable and environmentally friendly farming practices.
  - For example, Climate change will bring new pests, here a low input model, does not mean increasing the use of pesticides, but rather emphasis on bringing in changes in the practices of agriculture as well as the use of non-chemical alternatives.
- **Principle of risk minimization.**
  - This refers to promoting **multiple cropping systems**.

- This will also promote biodiversity as farmers would grow more than one crop on the field.
- Here it is also important to **integrate the livestock economy** so that additional income from different sources is made available to the farmers.
- **Choice of crops**
  - It is important to cultivate crops that are both **nutritive and compatible** with the local environment.
  - It is also essential that **Governments** enable **policies** to grow **water-prudent crops** like millets in regions that face water shortages.
  - For instance, more biodiverse and **climate-appropriate millets** will be grown by farmers where governments have included them in schemes such as mid-day meals.
- **Role of the consumer**
  - The choice of food that farmers grow is in the hands of consumers.
  - When we change our diets, it provides signals to the farmer to grow different crops based on market demand.
  - Changes in the patterns of food consumption can in turn affect the livelihood of farmers.

### Conclusion

- Addressing the impacts of climate change on food security requires a **multifaceted approach**, including **sustainable agricultural practices, improved water management, resilient crop varieties, and international**

**cooperation** to mitigate and adapt to the changing climate.

## 20) Child Poverty

*(GS2: Issues relating to Poverty and Hunger)*

### Context

- **Child poverty** refers to the state of children living in poverty and applies to children from **poor families** and **orphans** being raised with limited or no state resources.
- According to **UNICEF**, across the world cross the world, about **1 billion children** are "**multidimensionally**" **poor**, meaning they lack necessities as basic as nutritious food or clean water.

### Global scenario

- **World Bank** and **UNICEF** estimated that every second extremely poor individual in the world is a child, surviving on less than **US\$2.15** a day.
- Extreme **child poverty** is more prevalent in poor and least-developed countries, mostly in Africa and Asia.
- In 2022, **Sub-Saharan Africa** accounted for **75 percent** of the world's child population living in extreme poverty.
- Child Poverty in the Midst of Wealth", shows that child poverty is widely prevalent in the **high-income** and **upper-middle-income** countries of the EU and the Organisation for Economic Co-operation and Development (**OECD**)

### Indian Scenario

- **India** reduced its extreme child poverty rate by just **0.2** percent in six years (**2017-22**), according to the **World Bank** and **UNICEF**.

### Reasons for the Prevalence of Child Poverty

- **Economic Inequality:** Children in families with lower incomes often lack access to necessities such as adequate nutrition, healthcare, and education.
- **Unemployment and Low Wages:** Parents or caregivers facing unemployment or earning low wages may struggle to meet the financial needs of their children. Insufficient income affects a family's ability to provide a stable and supportive environment.
- **Healthcare Access:** Limited access to healthcare services, including preventive care and treatment, can result in health issues for children, exacerbating the effects of poverty. High medical expenses can further strain family budgets.
- **Discrimination and Social Exclusion:** Discrimination based on factors such as race, ethnicity, gender, or disability can contribute to social exclusion and limit opportunities for families and children, leading to higher rates of poverty among marginalized groups.

### Implications of child poverty

- **Child Labor and Exploitation:** Economic desperation may force children into labor at an early age, depriving them of educational opportunities and perpetuating the **cycle of poverty**.
- **Nutritional Deficiencies:** Inadequate access to nutritious food can result in **malnutrition, and stunted growth**, affecting physical and mental development.
- **Reduced Economic Mobility:** Child poverty can limit economic mobility in adulthood. Children who grow up in poverty may face barriers to securing well-paying jobs and may be more likely to experience poverty in their own families.

- **Increased Risk of Juvenile Delinquency:** Children in poverty may face increased risks of engaging in **delinquent behavior**. Factors such as limited access to **positive role models, educational challenges, and environmental stressors** can contribute to juvenile delinquency.

#### Government measures

- **Child Labour (Prohibition & Regulation) Amendment Act, 2016:** It aims to completely prohibit the employment of children below 14 years. The amendment also prohibits the employment of adolescents in the age group of 14 to 18 years in hazardous occupations and processes and regulates their working conditions where they are not prohibited. The amendment also provides stricter punishment for employers for violation of the Act.
- **PM-POSHAN:** the main aims of this scheme are to address two of the pressing problems for the majority



of children in India, viz. hunger and education by improving the nutritional status of eligible children in Government and Government-aided schools as well as encouraging poor children, belonging to disadvantaged sections, to attend school more regularly and help them concentrate on classroom activities



- **Pencil Portal:** The government has launched a dedicated platform, to ensure effective enforcement of child labour laws and to subsequently end child labour.



#### Conclusion

- Efforts to alleviate child poverty require a comprehensive and coordinated approach involving governments, communities, and international organizations. This includes investing in education, healthcare, social protection programs, and creating opportunities for families to improve their economic well-being.

## Key Takeaways From Other Editorials

S.No	Topics	Content
1.	<p><b>Two state solution and Oslo Accords</b></p> 	<p><b>Two state solution</b></p> <ul style="list-style-type: none"> <li>• Its basis is two separate states, Israel and Palestine, living peacefully side by side on the land between the western bank of the Jordan river and the Mediterranean Sea.</li> <li>• This territory would be divided broadly along the <b>pre-1967 armistice line or “green line”</b>. <b>Jerusalem</b>, which both sides want as their capital, would be shared.</li> <li>• Past negotiations have failed to make progress and there are currently no fresh talks in prospect.</li> </ul> <p><b>Oslo Accords &amp; India’s position</b></p> <ul style="list-style-type: none"> <li>• Despite Israel’s hold over Jerusalem, in 2016, the UN reaffirmed that Jerusalem’s Palestinian territories were under “hostile occupation”.</li> <li>• Undeterred by the refusal of the international community to endorse the annexation, Israel further expanded settlements in the territories of East Jerusalem.</li> <li>• Under the <b>Oslo Accords</b> of the 1990s, both Israel and the Palestinians agreed that the status of settlements would be decided by negotiations. But the negotiations process has been stalled for several years now.</li> <li>• In 1978, <b>Egypt and Israel</b> signed the <b>Camp David Accords</b>, which led to the first peace treaty between Israel and any of its Arab neighbors: The <b>Egypt-Israel Peace Treaty</b>, also known as the Framework for Peace in the Middle East, in 1979. The agreement was negotiated for Arab recognition of Israel and the withdrawal of Israeli forces and citizens from the West Bank. However, the accords’ main failing is the <b>lack of settlement of the Israeli-Palestinian issue</b>.</li> <li>• <b>India has traditionally backed a two-state solution</b> to resolve the Israel-Palestine conflict.</li> </ul>
2.	<p><b>Abraham Accords</b></p> 	<ul style="list-style-type: none"> <li>• The Abraham Accords is a <b>collaboration between Israel, the United Arab Emirates and Bahrain, mediated by the USA</b>. It was signed in 2020 to normalize diplomatic relations among Israel, UAE and Bahrain.</li> <li>• The accords were the first deal any Arab country had signed with Israel in 26 years. Until that day, the countries did not have any official economic or personal relationship with Israel.</li> </ul>
3.	<p><b>PESA</b></p>	<ul style="list-style-type: none"> <li>• The Panchayat (Extension to the Scheduled Areas) Act, 1996, came into existence for <b>ensuring tribal self-rule</b></li> </ul>

		<p><b>for people living in fifth scheduled areas of India.</b></p> <ul style="list-style-type: none"> <li>• The PESA Act conferred the <b>absolute powers to Gram Sabha</b>, whereas state legislature has given an <b>advisory role</b> to ensure the proper functioning of Panchayats and Gram Sabhas.</li> <li>• While the <b>73rd and the 74th Amendments</b> to the Indian Constitution passed in 1992 took the three-tier Panchayati Raj governance structure to rural and urban parts of the country, the Adivasi-dominated areas listed under the fifth schedule of the Constitution were <b>kept out of the purview of the Panchayati Raj Acts</b>.</li> <li>• The PESA Act, enacted in 1996, took local self-governance rules to the areas listed under the fifth schedule. The fifth schedule area, which deals with the administration of the districts dominated by the <b>Adivasi communities</b>, is in force in <b>10 states of the country</b>. These states include Jharkhand, Chhattisgarh, Odisha, Andhra Pradesh, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Rajasthan and Telangana.</li> </ul>
4.	<p><b>Artificial sweeteners</b></p> 	<ul style="list-style-type: none"> <li>• <b>Artificial sweeteners</b> or sugar substitutes are food additives that provide a sweetness like that of sugar while containing fewer calories.</li> <li>• Artificial sweeteners may be derived through the <b>manufacturing of plant extracts</b> or processed by <b>chemical synthesis</b>.</li> <li>• Sugar substitute products are commercially available in various forms, such as <b>small pills, powders, and packets</b>.</li> <li>• While artificial sweeteners offer benefits for <b>weight management, diabetes control, tooth decay prevention</b>, etc, concerns with the use of artificial sweeteners include <b>increased risk of metabolic disorders</b> and <b>disrupted gut microbiota</b>.</li> <li>• Artificial sweeteners approved by the <b>US Food and Drug Administration (FDA)</b> as food additives include <b>saccharin, aspartame, acesulfame potassium (acesulfame-K, or Ace-K), sucralose, neotame, and advantame</b>.</li> </ul>
5.	<p><b>Gross Environment Product (GEP)</b></p>	<ul style="list-style-type: none"> <li>• <b>GEP</b> aims to assess the <b>growth and health of natural resources</b>, and the positive or negative impact that <b>human activities</b> have on them.</li> <li>• GEP as a concept was introduced in 2011 by the</li> </ul>

		<p><b>Himalayan Environmental Studies and Conservation Organisation</b> in Dehradun, Uttarakhand.</p> <ul style="list-style-type: none"> <li>• The concept rests on gauging the health of <b>four pillars- air , water , soil and forest</b>.</li> <li>• Each constituent of the GEP index highlights a specific aspect, ie, The Forest GEP index evaluates status of forest resources, Soil GEP index gauges soil health, Air GEP index focuses on air quality improvement and Water GEP index assesses water quality and quantity.</li> </ul>
6.	<p><b>Lantana Camara</b></p> 	<ul style="list-style-type: none"> <li>• It is a species of <b>flowering plants</b> native to the <b>American tropics</b>.</li> <li>• It was introduced by the British into India as an <b>ornamental plant</b> in the 1800s and since then it has turned out to be <b>invasive</b>.</li> <li>• According to the <b>Journal of Applied Ecology</b>, Lantana has spread over <b>574,186 sq km</b>, covering <b>50 percent</b> of the country's "<b>natural areas</b>".</li> <li>• Eradicating lantana in our country has become difficult, because of its <b>rapid spread, infestation intensity, allelopathy</b> [chemicals released to discourage the growth of native plants], <b>opportunistic growth behavior</b>, and <b>resistance to cutting and burning</b>.</li> <li>• Effective Removal of Lantana is a <b>labor-intensive</b> process in which the shrubs are cut down and the ground is dug up to extract the deep roots.</li> </ul>



## Model Questions

1. Despite having a large and complex bureaucratic apparatus, the Indian state still faces limitations in effectively addressing various issues. Discuss.
2. Disability inclusion, especially in rural areas is crucial for achieving social justice and economic development. Discuss.
3. The hidden costs of unsustainable agrifood systems pose a significant threat to India's economic, environmental, and social well-being. Analyze.
4. Critically analyze the potential and challenges of integrating these therapies into India's healthcare landscape.
5. The basic structure doctrine has played a significant role in shaping the course of Indian democracy and protecting its core values. However it has its own limitations. Discuss.
6. Discuss the potential of the NAMO Drone Didi scheme for empowering rural women and revolutionizing agriculture in India.
7. Analyze the need for India's future growth strategy to be calibrated in view of the changing global conditions.
8. India and Sri Lanka have the potential for deeper economic integration through infrastructure development and trade agreements. Discuss in the light of recent agreements.
9. How can India navigate the challenges and leverage the opportunities presented by the evolving changes in the geopolitical landscape?
10. Critically evaluate India's defense preparedness in response to the evolving traditional and non traditional threats.
11. To what extent can fiscal measures like taxation address the negative consequences associated with HFSS consumption in India? Analyze.
12. Despite its transformative potential, the Forest Rights Act faces significant implementation challenges. Discuss.
13. Evaluate the potential of multilateral institutions for achieving net-zero emissions and ensuring energy access for all in developing countries.
14. "Addressing India's jobless growth requires a paradigm shift in the macroeconomic policies". Discuss.
15. Do you think India can become a High Income Economy in the near future? Elucidate.

16. In the light of the recent Supreme Court verdict, discuss the role and characteristics of Truth and reconciliation commissions.
17. 'Empowering farmers technically is a prerequisite for sustainable agriculture'. Discuss the statement with relevant government initiatives.
18. Analyse the impact of climate change on food security. Suggest measures to enhance the resilience of agricultural systems in the era of frequent climate change.
19. Sponge cultivation can aid coastal communities by economically empowering them. Comment.
20. Child poverty is a universal developmental challenge. Discuss.