IAS BABA

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- AZADI KA AMRIT MAHOTSAV
- NUTRITION

AZADI KA AMRIT MAHOTSAV

Azadi ka Amrit Mahotsav (AKAM) commenced on12 March 2021 with a 75-week countdown to the 75th anniversary of independence on 15 August 2023. Based on the five pillars focusing on freedom struggle, unique ideas, achievements, actions, and resolve, this Mahotsav celebrated the spirit of ***Jan Bhagidari***.

It showcased the country's achievements of the last 75 years to the world and also gave a framework for resolve for the next 25 years. Over a lakh events have been organised under AKAM, including several mega events, such as Har Ghar Tiranga, Vande Bharatam Nritya Utsav, and Kalanjali. Amrit Mahotsav aims to *further boost people's movement through collaborative campaigns and outreach* across India and the world.

They were on the lines of nine themes aligned with the Panch Pran:

1. Women and Children
2. Tribal Empowerment
3. Water
4. Cultural Pride
5. Lifestyle for Environment (LiFE)
6. Health and Wellness
7. Inclusive Development
8. Atmanirbhar Bharat
9. Unity

During the period, a number of monuments and structures of national importance were dedicated to the nation including the Pradhanmantri Sangrahalaya which tells the story of India after Independence through the lives and contributions of its Prime Ministers, the statue of Netaji Subhas Chandra Bose and Kartavya Path near India Gate, and the state-of-the-art new Parliament Building. Each sector made a vital contribution to this celebration, making it truly a people's movement through participative governance. These were dedicated to the people of India who have not only been instrumental in bringing India thus far in its evolutionary journey but also hold within them the power and potential to enable the vision of the Kartavya Kaal, the era of action, fueled by the spirit of Atmanirbhar Bharat.

A. Vision for Industry

The performance of the industry and manufacturing sector including MSME is critical for unleashing the full potentiality of growth of the economy. Though the economy has been picking up fast, the weakness is visible in the industry and manufacturing sectors. The economy grew well in the last five years and surpassed the pre-covid level. GDP in India moved from 6.5 percent in FY19 to 3.9 in FY20, to -5.8 during COVID year FY21 (degrowth), 9.2 percent in FY22 and 7.2 percent in FY23 crossing pre-covid growth levels.

The Causes

1. **During 2022-23, the industrial sector's growth moderated amidst lingering global uncertainties.**
    a. The supply chain bottlenecks following the war in Ukraine coupled with elevated raw material costs, impacted the profitability of manufacturing companies.
    b. With 99.8 percent of MSMEs being unregistered accounting for a sizeable share of the unorganized sector output, the government support is not adequately reaching them despite various policy measures introduced to support the sector.
    c. Unequal and unhealthy competition from massive mis-invoiced/covert Chinese imports has destroyed Indian manufacturing.
2. **Flow of bank credit growth:**
    a. Due to the lack of proactivity of industry units, either the demand for credit is subdued or the financial institutions cannot tap bankable units to lend.
    b. Deprivation of institutional credit will increase the sector's informal units to depend more on moneylenders charging usurious interest rates and exploiting them preventing their growth.
    c. Credit inadequacies impact macro-level output and aggregate credit.
    d. The causality runs from disruptions in trade credit network to investment and output vulnerabilities. Additionally, banking sector imbalances also set in.
3. **Role of China**
    a. The surge in scale and range of Chinese imports, aided and abetted by unscrupulous means including connivance among exporters, importers, clearing agents and customs, has sapped the performance, vitality and innate potential of the sector.
    b. An import-dependent consumption, production and trading structure has evolved, characterised by imports of final products, assemblies and critical components.
    c. China's predatory approach to trade as seen in dumping, currency manipulation, intellectual property theft, production of counterfeits of global and local brands, wide-range of export incentives and mis-invoicing.
    d. Economies of scale and cheap imports create colossal damage and entry barriers for Indian manufacturing.
    e. Other visible and invisible costs include industrial sickness, generation of black money, underdevelopment of skill/technology, growing unemployment and loss of tax revenue.

India's Manufacturing Sector

According to a FICCI-McKinsey report, by 2047, a growing India is expected to become a high-income nation with six times its current per capita income and to create 60 crore jobs to gainfully employ its growing workforce.

- Achieving this potential will make India an approximately Rs 1500 lakh crore ($19 trillion) economy in real terms by 2047.
- Manufacturing has the highest potential of all sectors to propel job growth, with the potential to create 60 million to 70 million jobs by 2030.
- India could aim to:
    - Boost overall manufacturing productivity fivefold by 2030 (by tripling labour productivity and doubling capital productivity),
    - Achieve 70-80% digital adoption by MSMEs, and
    - Increase the number of World Economic Forum lighthouses tenfold to drive IOT and automation adoption and boost productivity.

Way forward to realise the full potential in manufacturing:

A. New-age Factory of the World:

- **Supply chain:** India could ensure the supply chain and capture an increased share of key global supply chains valued at between $800 billion and $1.2 trillion by 2030. India is well-positioned to leverage Global Value Chains (GVC) for higher economic growth and job creation.
- **New-age sectors:** Such as mobile phones, solar PV modules, drones, wearables and semiconductors; would help India gain prominence as a manufacturing hub.
- **Plug-and-play cluster zones:** By state governments based on their manufacturing strengths.

B. Embracing the Digital Revolution in Manufacturing:

- **Industry 4.0 solutions:** As per a recent NASSCOM report, the Indian manufacturing industry spent between US 5.5 and US 6.5 billion dollars on Industry 4.0 solutions in FY21.
    - Digitisation could improve reliability and value chain resilience.
    - Technology grants and international joint ventures could help secure technology expertise that would help propel manufacturing into the digital future.
- **Smart manufacturing:** The ongoing 5G rollout would play a key role in the transformation to 'smart manufacturing' like Connected Warehouses, Logistics, Fleet Management, etc.
- Investment in Skill development programmes and collaboration with educational institutions and industry bodies to bridge the skills gap.

C. Towards Sustainable Manufacturing:

- Customers are increasingly looking for products and partners who follow eco-friendly practices, adopt green policies, and share a commitment to sustainability.
- Manufacturers need to prioritise the creation of green alternatives, such as
    - Bio-based feedstock
    - Sustainable packaging
    - Green building materials

- 'Zero Defect – Zero Effect'

D. Strengthening Infrastructure:

- India has inefficiencies in terms of a large number of goods transitioning within an industrial value chain, as well as the high cost and lengthy time for transition.
- Additionally, state and central governments could strengthen infrastructure in key manufacturing hubs through
  - Public-private partnerships (PPPs) and
  - Special-purpose vehicles and
  - Expand smart-city coverage.

Government initiatives to boost the growth of Indian Industry

Right from 'Make in India' launched in September 2014, the focus has been on making India a preferred global manufacturing hub which is still a work in progress. The multipronged 'Atmanirbhar Bharat Aabhiyaan' provided a combination of policies to boost industrial growth. Calling for 'Vocal for Local' and 'Vocal for Global' to turn India into an export hub.

- Funds of Rs. 20.97 lakh crores has been allocated to focus on the supply side and long-term reforms in agriculture, labor, mining, and defense sector to attract private sector investment.
- The productivity-linked Incentive (PLI) scheme for 14 key sectors of manufacturing, establishing a special textile manufacturing zone and the Scheme for Integrated Textile Park (SITP) are some of the long-drawn projects to pump prime industrial growth.
- Ease of doing business, reduction of compliance burden public procurement policy, and phased manufacturing program (PMP) are some more support carved out for the sector.
- Simultaneously, PM Gati Shakti- National Master Plan for Multi-Model connectivity is closely monitoring various infrastructure projects under execution and progress in the implementation of the National Infrastructure Pipeline (NIP), National Monetization Plan (NMP), India Industrial Land Bank (IILB).
  - **The India Industrial Land Bank (IILB)** is a Geographic Information System (GIS) database of industrial areas/clusters developed by the Department for Promotion of Industry & Internal Trade (DPIIT). It enables a committed application of resource optimization, industrial upgradation and sustainability.

About ZED

ZED is based on the principle of:

- **Zero Defect –** Production mechanisms wherein products have no defects
- **Zero Effect –**Production processes that have no adverse environmental and ecological effects.

Significance for MSME Sector

- **Export Competitiveness –** Through better quality products, and also due to manufacturing space created by China owing to huge increase in its factory wages.
- **Domestic consumer base –**Better quality products will attract more customers.

- **Improved profits –**Through technological up-gradation, use of Intellectual Property Rights, reduced wastage and increased productivity.
- **Reduced costs –**Energy efficiency, waste recycling, and better production processes.
- **Increased investments –**With a more environmentally aware world, it's easy to access credit for green initiatives.
- **Awards and Recognition –**Help build a brand image for the MSMEs through the "ZED Mark" and showcase them globally.
- **Environmental responsibility –**Make them 'Responsible Manufacturers' and in long run make them sustainable businesses.
- **Boost to Startup Culture –**Governmental handholding, innovative solutions, and newer technology.

The Way Forward

- Industry focus requires more coordinated and inclusive efforts of stakeholders. Government, regulators, banks, and all financial institutions and non-government bodies will have to introspect as to why the industry growth is sluggish despite the network of policies and support mechanisms in place. The East of doing business is not reaching out to units.
- The MSME units are not getting registered and seeking institutional credit. Maybe, the lending procedures need more simplification in documentation, and the use of vernacular language will be needed. The people manning the financial institutions should be conversant with the local language, customs, and practices to effectively communicate the nuances of lending schemes to the target group of potential borrowers.
- Make in India strategy needs to be synchronised with planned phasing out of these imports and spurring domestic capex and capacity. Random, surprise and thorough checks of illicit imports at the ports need to be intensified. More international cooperation is required to curb hawala dealings.
- Unless all the sectors of the economy work in tandem, unleashing full growth potentiality may not be possible. Industrial growth is a larger link in the economy with human-intensive activities built in the sector. Implementing the policies and developmental schemes at the grass root level both in letter and spirit will be essential with a focus on quantified outcomes.
- Institutional lending is always a two-way interface – the sector should demand credit and banks should find the demand bankable. Any gap in such synchronization can deprive them of a very useful credit enabling the sector to grow to its potentiality contributing to the growth of the economy.

B. Leveraging Technology for Accessible Quality Education

Technology has changed the education scenario in the last few decades by emerging as one of the most efficient tools used in the learning process, both by tutors and learners.

Significance of technology

Technology plays an important role in:

- Improving the classroom process of teaching, learning and evaluation
- Aiding teacher training.
- Improving access to education.
- Improving the overall planning, administration and management of the entire education system.
- Looking for matters beyond the textbooks is no longer a challenge with respect to time and resources anymore.
- **Classroom-based learning**
    - Nowadays technology has become an integral part of classroom-based teachings. Today in many schools, colleges, and universities in India instead of blackboard projector screens are used for teaching.
    - Hand writings of teachers are replaced by PowerPoint presentations.
    - Students experience a different kind of setup in today's technology-based classroom. Gadgets like tablets and laptops are used to take down notes.
    - Animated content is created on various subjects and in different languages so that students can have a better understanding of a complex subject in a simple way**.**
- **Online learning management system:** Many schools and universities in India are integrating online Learning Management Systems or LMS platforms into their web portal. Students can remotely login to access course material and also attend live classes with teachers. Pre-recorded lectures, and videos can be uploaded on the LMS platform making it easy for students to go through it multiple times.
- **Learning through mobile Apps:**
    - According to a report released by Counterpoint Research, India has become the second biggest smartphone market in the world after China with more than 220 million active users.
    - This presents a huge opportunity for delivering e-learning content through mobile apps.
    - Today educational mobile apps are available on popular platforms like Android and iOS. Developers are creating educational apps based on particular subjects.
    - They are simplifying complex concepts with easy-to-understand illustrations and animations, puzzles games etc. There are apps available for grammar, physics, chemistry, mathematics and so on.
    - With the prices of tablets and smart phone coming down people from villages and remote areas can also make use of this apps to learn and update their skills.

Government initiatives:

- **National Programme on Technology Enhanced Learning (NPTEL):** NPTEL, started in 2005, provided high-quality recorded engineering lectures delivered by IIT professors. Subsequently, in 2008, Virtual labs were started to provide simulation-based experiments for all students.
- **Teacher training platforms:**
    - The **Amrita Virtual Interactive E-Learning World (A-VIEW)**, a collaboration between AMRITA University and the Ministry of Human Resource Development (MHRD), was established with the purpose of providing online training to educators.
    - IIT Bombay and IIT Kharagpur launched the '**Train 10,000 Teachers' (T10kT)** program, which focuses on augmenting the teaching skills of teachers in core engineering and science subjects.
    - **AICTE Training And Learning (ATAL) Academy** was instituted to facilitate the dissemination of high-quality technical education across the nation.
- **SWAYAM platform:** It stands as the world's largest online free e-learning portal, meticulously designed to realise the goals of accessibility, equity, and quality education across all educational tiers.
- **National Internship Portal** was established to foster connections between students and industries, including Micro, Small, and Medium Enterprises (MSMEs).
- **The National Educational Alliance for Technologies (NEAT)** scheme, implemented by the All India Council for Technical Education (AICTE), aims to act as a bridge between ed-tech companies, academic institutions and students.
- **Anuvadhani**, an artificial intelligence-based translation tool developed by AICTE, is developed to bridge the language gap and provide equal learning opportunities to students across the country. It can translate text files, and enable speech-to-text typing, and editing.
- **National Digital Library Project** by IIT Kharagpur provides free access to digital books and documents.
- **Academic Bank of Credit (ABC):** Initiated by the National Education Policy (NEP) 2020, students can store their academic credits and credentials earned in Digilocker. It serves as a credit bank for students that allows them to accumulate, verify, transfer, and redeem their credit which ensures flexibility and enhances learning opportunities for students.

The NEP 2020 aims to achieve a Gross Enrollment Ratio (GER) of 100% in school education and 50% in higher education. Technology plays a pivotal role in achieving this goal by bridging the gap and ensuring access, upholding equity, maintaining quality, increasing affordability, and fostering accountability across the education sector.

While much is being done in policy formulation stage, implementation is not always up to the mark. Even then, efforts in education have long gestation period before showing perceptible results. Need of the hour is to set aside political apathy towards education and invigorate India's education sector.

Atal Innovation Mission

Innovation isn't invention. It's the act of refinement and recalibration to achieve particular goals. And when the goal is economic growth, innovation is the single most important factor that distinguishes a prosperous economy from an impoverish one.

Atal Innovation Mission:

- It is Government of India's flagship initiative to promote a culture of innovation and entrepreneurship in the country.
- **AIM's objectives** are:
  - To develop new programmes and policies for fostering innovation in different sectors of the economy.
  - To provide platform and collaboration opportunities for different stakeholders.
  - To create awareness.
  - To create an umbrella structure to oversee innovation ecosystem of the country.

Major initiatives:

- **Atal Tinkering Labs**-Creating problem solving mindset across schools in India.
- **Atal Incubation Centers**-Fostering world class startups and adding a new dimension to the incubator model.
- **Atal New India Challenges(ANIC)**-Fostering product innovations and aligning them to the needs of various sectors/ministeries.
- **Mentor India Campaign**– A national Mentor network in collaboration with public sector, corporates and institutions, to support all the intiatives of the mission.
- **Atal Community Innovation Center**– To stimulate community centric innovation and ideas in the unserved /underserved regions of the country including Tier 2 and Tier 3 cities.s
- **ARISE**-To stimulate innovation and research in the MSME industry.
- **AIM-iCREST** – an Incubator Capabilities enhancement program for startups.
- **AIM-PRIME** – to promote and support science-based deep-tech start-ups & ventures with Bill & Melinda Gates Foundation (BMGF).

C. Agriculture - A Journey from Shortage to Surplus

The history of agriculture in India dates back to Indus Valley civilization era where in the present times, the agriculture sector is one of the most important industries in the Indian economy with approximately 60 percent of the Indian population working in the industry, contributing about 18 percent to India's GDP.

Significance of Indian agriculture in economy –

1. **Agriculture for Industrial Development:** Agriculture in India has been the major source of supply of raw materials to various important industries of our country. Cotton and jute textiles, sugar, vanaspati, edible oil plantation industries and agro-based cottage industries.

2. **Source of Government Revenue:** Agriculture is one of the major sources of revenue to both the Central and State Governments of the country. Some other sectors like railway, roadways are also deriving a good part of their income from the movement of agricultural goods.
3. **Rural economy:** The majority of India's poor are found in rural areas. And rural economy in many states are immensely dependent on agriculture.
4. **Employment Generation:** Most people in India derive their livelihood from agriculture. Agriculture is still the most dominant sector in as much a high proportion of working population continues to depend on agriculture. Over 70 per cent of the rural households depend on agriculture.
5. **Diversified Agriculture sector:** Tremendous diversification has taken place in agriculture post-independence. At the time of independence, agriculture was dominated by the crop sector but in the following decades, especially after the 1980s, the share of livestock rose sharply.
6. **Globalization of Indian Agriculture:** Both agricultural exports and imports have registered significant and steady growth in terms of value over this period. The most notable feature of Indian agriculture since the early 1990s is the rising share of agro-trade to agricultural GDP. It is indicative of accelerated globalization of the agricultural sector in India.

Consequently, following points demonstrate important issues in agriculture sector for India's overall harmonious development and stability of Indian economy –

- **Reducing rural poverty through a socially inclusive strategy:** Moreover, there are strong regional disparities, the majority of India's poor are in rain-fed areas or in the Eastern Indo-Gangetic plains. Problems of rural indebtedness and the exploitative practices of the village moneylenders need to be address for overall harmonious development of poor, landless, women, scheduled castes and tribes.
- **Recognize women in agriculture:** There is invisibility of gender in Indian agriculture. According to Oxfam (2013), around 80 per cent of farm work is undertaken by women in India. Addressing issues of recognition, absence of land rights and issues of female agricultural labourers for overhauling development of women in agriculture is required.
- **Tribal agriculture:** Their families depend on small holding and cursed to spend entire life in misery. Measures needed against depleting forests and stringent forest laws. More diverse programmes under TRIFED can be beneficial for all round development.
- **Sustaining the environment:** More extreme events droughts, floods, erratic rains are expected and would have greatest impact in rain-fed areas. Agricultural practices need adapting to reduce soil erosion and increase the absorption of rainfall. Climate change must also be considered for sustainable agriculture practice which will prove sustainable economy.
- **Raising agricultural productivity per unit of land:** Productivity will need to be the main engine of agricultural growth as virtually all cultivable land is farmed. All measures for

increasing yields, diversification to higher value crops, and developing value chains to reduce marketing costs.

- **Promoting new technologies and reforming agricultural research and extension:** Need to replace aging research techniques and access to state-of-the-art technologies. Providing a connection between research, extension, and the private sector is needed for all-round development.
- **Developing Larger land holdings:** Due to shrinking agricultural land holdings farmers have limited incentive to adopt capital-intensive farming techniques and exploiting economies of scale is minimal. Larger land would allow farmers to engage in multiple cropping and help diversify their income base thus it will benefit in remunerative farm income.
- **Raising growth rate:** Doubling farmers' real incomes is imperative.

The Journey

The Struggle Post Independence

To meet the deficiency in the supply of food grains in the short run, the Government made the following provisions:

- Extension of the rationing system to cover both urban and rural areas;
- Import of food grains to make easy the situation and the amount of import reached the level of 2.7 million tonnes in 1947
- Introduction of subsidy for the distribution of imported food grains as it was expensive as compared to indigenously produced food grains. But the public distribution system which was mostly maintained in the urban areas primarily had been suffering from huge degree of inefficiency and corruption.

Between 1951 and 1954

The share of imports in the total availability of food grains in the country was 4.8 percent, which in the next five years i.e. 1955-59 declined to 3.9 percent. However, during the first half of the sixties this share increased to 6.25 percent and further to 8.3 percent in the late sixties (1965-69). Thus, to increase production of food grains in country emphasis was put on

1. **Increasing land productivity:** As the potential for bringing more areas under cultivation had started saturating. Introduction of high yielding variety of seeds by applying the modern farm inputs like HYV seeds, chemical fertilizers and mechanization of certain agricultural operations.
2. **Input Subsidies:** Input subsidies are provided to enhance the food grain production in the country, as it encourage the adoption of specific technology and benefit small producers. Fertilizer, electricity, irrigation, and bank credit at nominal charges are the major input subsidies besides HYV seeds and other facilities that help farmers encourage food production.
3. **Minimum Support Price:** The rationale of minimum support price lies in assuring the farmers who may suffer from periodical gluts caused by good monsoon or the use of superior technology. The minimum support price for principal commodities is generally announced at

the sowing time and the government agrees to buy any amount of quantity offered for sale at those prices.

4. **Issue Price:** These are the prices at which the Government releases food grains stocks from the central pool to the PDS. They are lower than the prevailing market prices and slightly higher than the procurement prices. These prices involve a heavy element of subsidy from the government on food grains as well as non-food items such as sugar and edible oil.
5. **Institutions to implement Agriculture Price policy:** The Food Corporation of India (FCI): The FCI was set up in 1964 through an act of parliament. Its primary responsibility is to undertake the purchase, storage, transportation, distribution, and sale of food grains.

What Revolutionised and is Revolutionizing the Industry?

A. Green Revolution

- In India, the green revolution was launched under the guidance of geneticist **Dr. M. S. Swaminathan.**
- The Green Revolution was a period that began in the 1960s during which agriculture in India was converted into a modern industrial system by the adoption of technology, such as the use of high-yielding variety (HYV) seeds, mechanised farm tools, irrigation facilities, pesticides and fertilizers.
- **Primary aim:** To introduce high-yielding varieties (HYVs) of cereals to alleviate poverty and malnutrition.

Benefits of Green Revolution

- There are undoubtedly positive effects on the overall food security in India.
- The Green Revolution within India led to an increase in agricultural production, especially in Haryana, Punjab, and Uttar Pradesh.
- Increased food production: The Green Revolution led to a considerable increase in food production, which helped in improving food security in India.
- Boosted economy: The movement helped to boost the Indian economy, with increased agricultural production contributing to economic growth.
- Reduced poverty: The Green Revolution in India contributed to a reduction in poverty, particularly in rural areas. Hence, it helped improve the standard of living for farmers.
- Increased employment opportunities: The revolution created new employment opportunities in agriculture and related industries, which helped tackle unemployment.
- Self-sufficiency: The Green Revolution helped India to become more self-sufficient in food production, reducing the country's dependence on other countries for food.
- The green revolution led to the high productivity of crops through adapted measures, such as:
    - Increased area under farming,
    - Double-cropping, which includes planting two crops rather than one, annually,
    - Adoption of HYV of seeds,
    - Highly increased use of inorganic fertilizers and pesticides,

- Improved irrigation facilities, and
- Improved farm implements and crop protection measures.

Criticisms of Green Revolution:

Water-intensive crops:

- The crops introduced during the green revolution were water-intensive crops.
- About 3,500 litres of water is needed to produce one kg of rice, compared to 1,350 litres for wheat and 900 litres for maize.
- To take Punjab's example, the state extracts 28 billion cubic metres (bcm) of groundwater annually, while its annual recharge is 19 bcm, which is unsustainable.
- Tube wells have to dive deeper and deeper to find water.

Imbalanced and unsuitable production:

- Punjab, Haryana and west Uttar Pradesh were chosen or led to produce wheat and rice for the nation.
  - These states were relatively suitable for wheat, but not rice.
- The best states for rice were West Bengal, Odisha, Bihar and Assam.
- The three northern states were incentivized for growing rice along with wheat because they had good irrigation, unlike the eastern states which were largely rainfed.

Soil pollution:

- Chemicals have swallowed the soil's innate nutrients.
- There has been a significant increase in the usage of pesticides, and India became one of the largest producers of pesticides in the whole of Asia**.**

Air pollution:

- Air pollution introduced due to the burning of agricultural waste is a big issue these days.
- In the heartland of the green revolution, Punjab, farmers are burning their land for sowing the crops for the next cycle instead of the traditionally practiced natural cycle.

Extinction of Indigenous Varieties of Crops:

- Since the time of the green revolution, there was reduced cultivation of indigenous varieties of rice, millets, lentils, etc.
- In turn, there was increased harvest of hybrid crops, which would grow faster.
- Due to the green revolution, India lost almost 1 lakh varieties of indigenous rice.

Health Impacts:

- Indiscriminate pesticide usage has led to several health effects in human beings in the nervous, endocrine, reproductive, and immune systems.

B. International Year of Millet

Millets are cereal crops and small seed grasses, which are widely used in African and Asian countries. Since ages, these small crops were used for human consumption as well as a fodder for animals. Majorly cultivated in the semiarid tropical regions of Africa and Asia, around 97 percent of world's overall millet production happens in these regions.

What are their nutritional benefits?

- Millets are extremely nutritious and good for health and they also need less water and can stored for years, as they have a long shelf life. Millets make for a perfectly healthy meal. They are loaded with high amounts of starch and proteins, which can be beneficial if added to the daily diet.
- These little grains are a powerhouse of nutrition, which helps in improving heart health and can effectively reduce coronary blockage. It is enriched with the goodness of magnesium, which can effectively reduce blood pressure and the risk of stroke and heart attacks.
- Millets are a rich source of magnesium, which help in stimulating the level of insulin, thereby increasing the efficiency of glucose receptors in the body, which further helps in maintaining a healthy balance of sugar level in the body.
- Rich in fiber, millets make for a healthy cereal, which can help in digestion and can relieve bowel issues.
- Millets are loaded with components such as curcumin, ellagic acid, Quercetin and catechins, which further help in removing foreign agents and free radicals and balance the enzymatic reactions in the body. These can naturally detoxify the blood.

Millet Cultivation As A Viable Solution To Agrarian Challenges

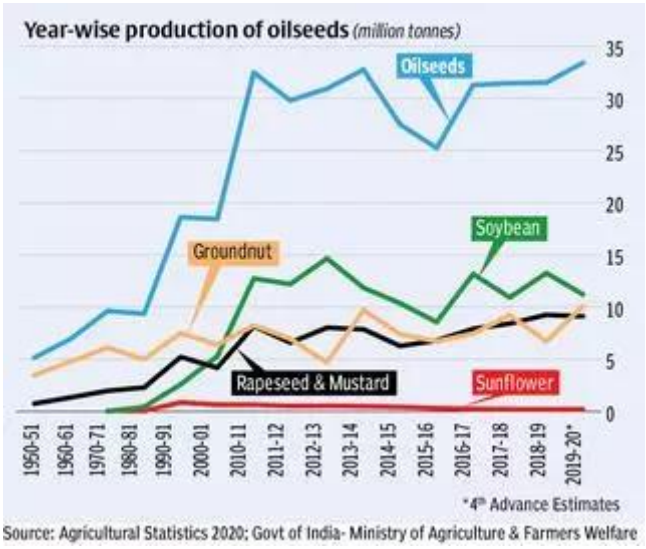
- According to the report of the National Rainfed Area Authority (NRAA) even after realizing the full irrigation potential, about half of the net sown area will continue to remain rainfed. This alarms the need of shifting to the alternative of current cereal staples.
- Millets cultivation can be a solution to this problem as these can grow on shallow, low fertile soils with a pH of soil ranging from acidic 4.5 to basic soils with pH of 8.0. Millets can be a good alternative to wheat especially on acidic soils.
- Rice is very sensitive to saline soils and has poor growth and yield on a soil having salinity higher than 3dS/m. On the other hand, millets like pearl millet (Pennisetum glaucum) and finger millet can grow up to a soil salinity of 11–12 dS/m.
- Millets have a low water requirement both in terms of the growing period and overall water requirement during growth. The rainfall requirement of certain millets like pearl millet and proso millet (Panicum miliaceum) is as low as 20 cm, which is several folds lower than the rice, which requires an average rainfall of 120–140 cm.
- Most of the millets mature in 60–90 days after sowing which makes them a water saving crop. Barnyard millet (Echinochloa frumentacea) has the least maturation time of 45–70 days among millets, which is half to the rice maturation (120–140 days) time.
- Millets fall under the group of C4 cereals. C4 cereals take more carbon dioxide from the atmosphere and convert it to oxygen, have high efficiency of water use, require low input and hence are more environment friendly.
- Thus, millets can help to phase out climatic uncertainties, reducing atmospheric carbon dioxide, and can contribute in mitigating the climate change.
- Millets secure sixth position in terms of world agricultural production of cereal grains and are still a staple food in many regions of world. These are rich source of many vital nutrients

and hence, promise an additional advantage for combating nutrient deficiencies in the third world countries.

- Millets are nutritionally similar or superior to major cereal grains. The additional benefits of the millets like gluten-free proteins, high fibre content, low glycaemic index and richness in bioactive compounds made them a suitable health food.
- The mineral content in millets ranges from 1.7 to 4.3 g/100 g, which is several folds higher than the staple cereals like wheat (1.5%) and rice (0.6%).
- Thus, the incorporation of millets in the diet can help to eradicate nutritional deficiencies.

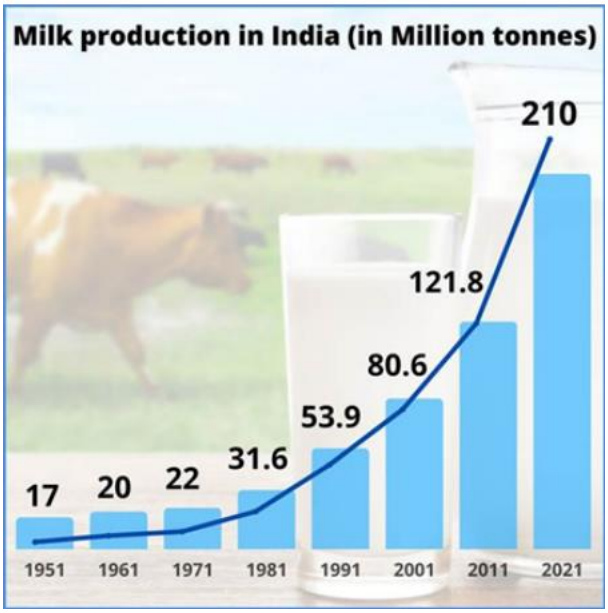
C. Yellow Revolution: Triumph in Oilseeds Production

- Innovative cultivation practices and the introduction of advanced crop production technologies led to a dramatic increase in oilseeds output.
- India's oilseed production grew from 108.30 lakh metric tons in 1985-86 to an impressive 400,000 million tons in 2022-23, establishing self-reliance in this crucial sector.



D. The White Revolution: From Milk Crisis to Global Leadership

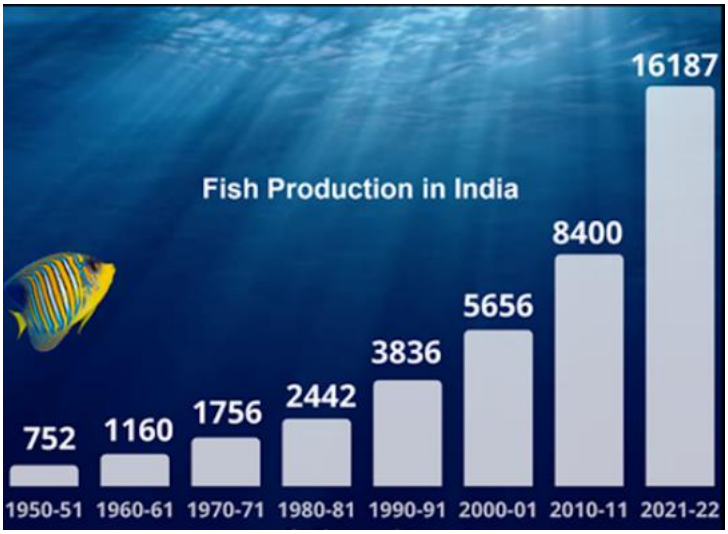
- With per capita milk availability dwindling, the **National Dairy Development Board (NDDB)** chaired by **Verghese Kurein launched Operation Flood in the 1970s**.
- Established a network of village-level milk cooperatives, modern processing plants, and a seamless supply chain.
- India has been a global leader in milk production for over a decade, with a total production of around **22 crore tonnes in the year 2021-22.**



Source: PIB

E. The Blue Revolution: Empowering Fisheries

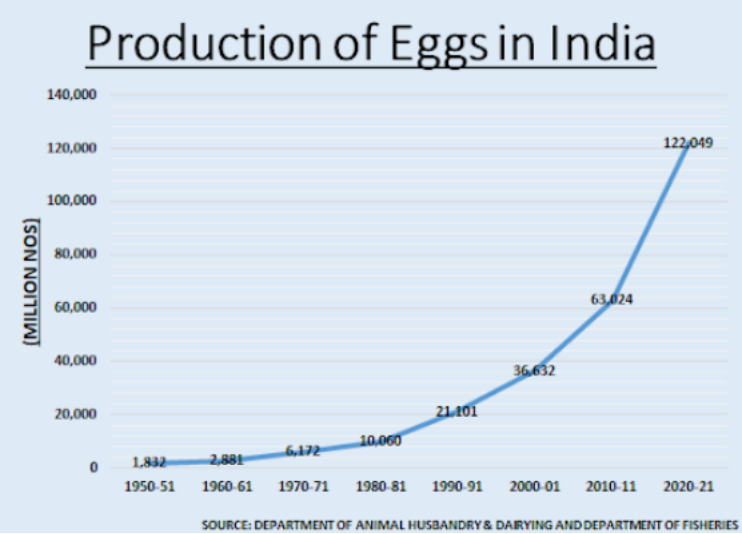
- India transformed into the **second-largest fish-producing country globally,** with policies promoting both marine and inland fisheries.
- The Blue Revolution not only boosted fish production but also elevated India's status as **a leading seafood exporter.**



Source: PIB

F. The Silver Revolution: Poultry Powerhouse

- India has become the **third-largest egg producer** globally



Challenges and the Road Ahead

Agriculture lies at the backbone of Indian economy. As India's agricultural success story continues, challenges such as climate change, resource depletion, and productivity constraints must be addressed. Therefore, more sustainable solutions lie in augmenting productivity, diversifying to high-value crops, and shifting people out of agriculture to the high productivity sector.

- Initiatives like the **National Mission on Sustainable Agriculture and Agri-Tech Infrastructure Fund** that focus on sustainable practices and technology integration should be given support.
- **Digital tools, precision agriculture, and market linkages** are redefining modern farming and should be encouraged across the nation.
- **Financial support to crop insurance and institutional credit** empower farmers and more initiatives around it should be implemented.
- Effective implementation of the **National Agriculture Market (e-NAM)** that's revolutionizing agricultural marketing, ensuring fair prices and market access is much needed at this hour.

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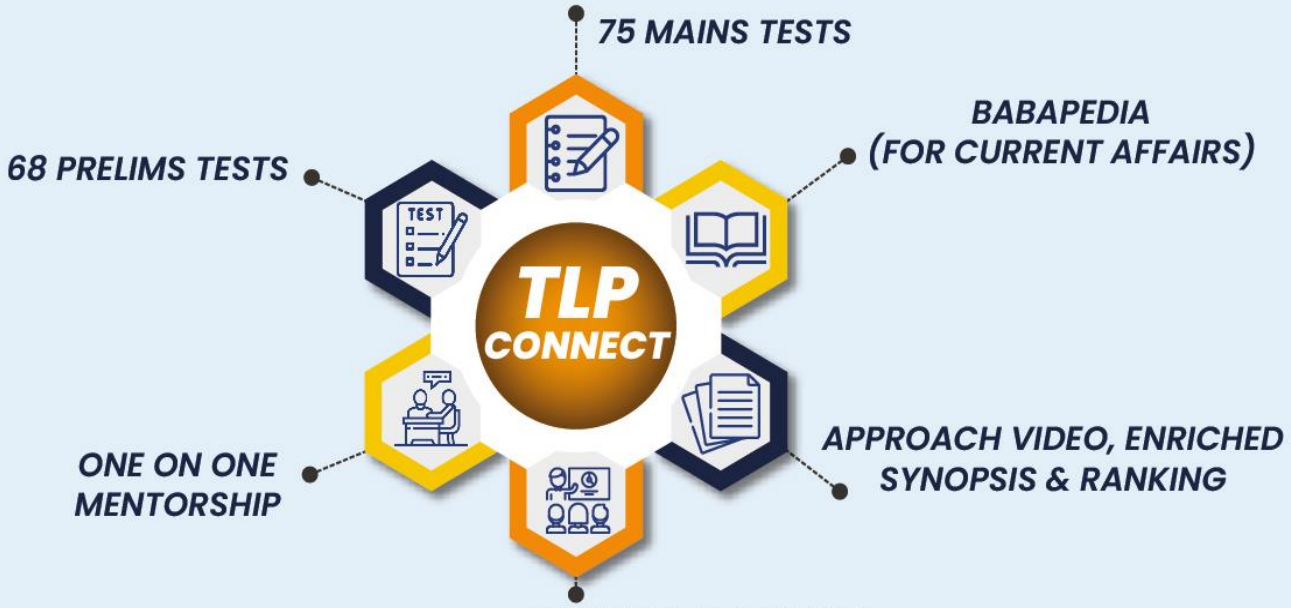

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D. Indian Economy - Historical Perspective

India's independence was in itself a turning point in its economic history. The country was poor as a result of steady deindustrialization by Britain. Less than a sixth of Indians were literate. The abject poverty and sharp social differences had cast doubts on India's survival as one nation. Cambridge historian Angus Maddison's work shows that India's share of world income shrank from 22.6% in 1700—almost equal to Europe's share of 23.3%—to 3.8% in 1952.

As former prime minister Manmohan Singh put it: "The brightest jewel in the British Crown" was the poorest country in the world in terms of per capita income at the beginning of the 20th century.

Independence – 1990s

India's economic Model: The State's primacy over Individual Enterprise

- Prime minister Jawaharlal Nehru's development model envisaged a dominant role of the state as an all-pervasive entrepreneur and financier of private businesses.
- The Industrial Policy Resolution of 1948 proposed a mixed economy.
- Earlier, the **Bombay Plan**, proposed by eight influential industrialists including **J.R.D Tata and G.D. Birla**, envisaged a substantial public sector with state interventions and regulations in order to protect indigenous industries.
- The political leadership believed that since planning was not possible in a market economy, the state and public sector would inevitably play a leading role in economic progress.

The very first budget, and the defence of fiscal federalism

- Alawyer, economist and politician who served as independent India's first finance minister, R.K. Shanmukham Chetty tabled the country's first Union budget in Parliament on 26 November 1947.
- He was also India's delegate to the World Monetary Conference at Bretton Woods in 1944, a consequential gathering of economists towards the end of World War II which set up the global financial architecture that governs the world to this day.
- In the Constituent Assembly, Chetty made several interventions in defence of fiscal federalism, an issue which would prove significant for his home state of Tamil Nadu in the decades ahead.

Planning, commissioning, executing the programme to hasten growth

- India set up the Planning Commission in 1950 to oversee the entire range of planning, including resource allocation, implementation and appraisal of five-year plans.
- The five-year plans were centralized economic and social growth programmes modelled after those prevalent in the USSR.
- **India's first five-year plan, launched in 1951, focused on agriculture and irrigation** to boost farm output as India was losing precious foreign reserves on foodgrain imports. It was based on the **Harrod-Domar model** that sought to boost economic growth through higher savings and investments.
- The plan was a success, with the economy growing at an annualized 3.6%, beating the target of 2.1%.

The free-market proponent

- The second five-year plan's dependence on deficit financing to promote "heavy industrialization" was a recipe for trouble.
- India faced an external payments crisis a year after the plan period began.

The man who gave India modern statistics and the swadeshi spirit

- The second five-year plan (1956-61) laid the foundation for economic modernization to better serve India's long-term growth imperatives.
- Launched in 1956, it was based on the **Mahalanobis model** that advocated rapid industrialization with a focus on heavy industries and capital goods.
- **Prasanta Chandra Mahalanobis** was perhaps the single most important individual in directing Indian development planning.
    - He was the chief adviser to the commission from 1955**, founded the Indian Statistical Institute, and is considered the father of modern statistics in India**.
- The Mahalanobis plan was, in a way, an invocation of the spirit of swadeshi or self-reliance.

The licence Raj begins

- The second five-year Plan and the Industrial Policy Resolution 1956 (long considered the economic constitution of India) paved the way for the development of the public sector and ushered in the licence Raj.
- The resolution set out as national objective the establishment of a socialist pattern of society.
- It also categorized industries into three groups.
    - Industries of basic and strategic importance were to be exclusively in the public sector.
    - The second group comprised industries that were to be incrementally state-owned.
    - The third, comprising mostly consumer industries, was left for the private sector.
    - The private sector, however, was kept on a tight leash through a system of licences.

Bad stock and the story of India's first big financial scam

- Mundhra scandal, free India's first big financial scam: Under governmental pressure, Life Insurance Corporation had bought fraudulent stock worth ₹1.24 crore—the largest investment the public-sector entity had made in its short history—in six companies owned by Kolkata-based Haridas Mundhra, without mandatory consultation with its investment committee.
- It led to the resignation of then finance minister T. T. Krishnamachari.

From Bhakra-Nangal to Bhilai, the temples of a modern India

- Nehru identified power and steel as the key bases for planning. He described the 680ft Bhakra multi-purpose project on the Sutlej river in Himachal Pradesh as the new temple of a resurgent India.
- The politics of big dams aside, the huge Bhakra-Nangal dams are among several hydel projects India built to light up homes, run factories, and irrigate crops.
- The second plan set a target to produce 6 million tonnes of steel. Germany was contracted to build a steel plant in Rourkela, while Russia and Britain would build one each in Bhilai and Durgapur, respectively.

- The Indian Institutes of Technology and the Atomic Energy Commission were the other "modern temples".

The onset of economic troubles and the death of a nation builder

- The quest to quickly industrialize had caused a large reallocation of funds away from the farm sector.
- Agriculture outlay was nearly halved to 14% in the second Plan.
- Food shortages worsened, and inflation spiked.
- Imports of food grains depleted precious foreign exchange reserves.

Rethinking of the direction of India's policymaking

- The war with China had exposed India's economic weakness.
- Chronic food shortages and price rise convinced him that India needed to move away from centralized planning and price controls.
- Shastri renewed focus on agriculture, accepted a larger role for private enterprise and foreign investment, and trimmed the erstwhile Planning Commission's role.
- India's victory over Pakistan in the 1965 war gave Shastri the political capital to consider economic reforms of the kind that took place 25 years later.

After the Green Revolution, the shift towards an Evergreen Revolution

- Shastri's focus on food security arose from the fact that in the 1960s, India was on the verge of a mass famine. Food aid imports from the US, on which the country was reliant, were beginning to hit India's foreign policy autonomy.
- That was when geneticist M.S. Swaminathan, along with Norman Borlaug and other scientists, stepped in with high-yield variety seeds of wheat, setting off what came to be known as **the Green Revolution**.
- Swaminathan is now an advocate for moving India towards sustainable development. He champions environmentally sustainable agriculture, sustainable food security and the preservation of biodiversity. He calls this an "evergreen revolution".

Getting the dairy business right

- Following the success of the Green Revolution, Shastri turned his attention to the dairy sector, particularly the cooperative movement in Gujarat's Anand, led by Verghese Kurien. He helped Kaira District Co-operative Milk Producers' Union Ltd expand its work, ushering in the White Revolution.
- In the years that followed, the government's Operation Flood led to a rapid increase in milk production.
- Self-sufficiency in the dairy sector was achieved entirely through the cooperative movement, which has spread to more than 12 million dairy farmers across the country.
- Decades later, Amul, the brand started by cooperative farmers in Anand, remains a market leader.

A shaky economy forces annual plans in place of the five-year plan

- India suspended five-year plans briefly, drawing up annual plans between 1966 and 1969 instead. This was done as the country was not in a position to commit resources over a longer period.
- The war with China, the below-par growth outcomes of the third Plan, and the diversion of capital to finance the war with Pakistan had left the economy severely weakened.

- The vital monsoon rains had once again played tyrant during the 1966-67 season, worsening food shortages and causing a sharp spike in inflation.
- The constant need to import foodgrains or seek foreign aid also posed a serious risk to India's political economy.

Indira Gandhi and her decisions

- On 6 June 1966, Indira Gandhi took the drastic step of devaluing the Indian rupee by a sharp 57%. The rupee fell to 7.50 per US dollar from 4.76. This was done to counter India's significant balance of payments crisis.
- The country's apathy to foreign investments and neglect of the exports sector meant that it ran constant trade deficits. The devaluation aimed to boost exports amid limited access to foreign exchange. Instead, it accelerated inflation and drew wide criticism.
- India's move had implications for other countries as well. Oman, Qatar and the UAE, which used the Reserve Bank of India-issued Gulf rupee, had to come up with their own currencies.
- Gandhi nationalized 14 private banks on 20 July 1969. The main aim of the move was to accelerate bank lending to agriculture at a time when big businesses cornered large chunks of the credit flow.

The Janata years: Demonetization 1.0 and the exit of Coca-Cola

- Prime Minister Morarji Desai withdrew the legal-tender status of ₹1,000, ₹5,000 and ₹10,000 banknotes in a crackdown on illicit wealth. The legalization of strikes, outlawed by Gandhi, and reinstatement of trade unions affected economic activity.
- IBM and Coca-Cola were asked to comply with the Foreign Exchange Regulation Act that mandated foreign investors cannot own over 40% in Indian enterprises. The two multinationals shut their India operations.

Indira Gandhi returns, this time with a reformist bent of mind

- Indira Gandhi returned to power in 1980, initiated big-ticket economic reforms in order to secure an International Monetary Fund loan.
- The sixth five-year plan (1980-85), in essence, pledged to undertake a string of measures aimed at boosting the economy's competitiveness.
- This meant the removal of price controls, initiation of fiscal reforms, a revamp of the public sector, reductions in import duties, and de-licensing of the domestic industry, or in other words ending the licence Raj.
- Signed a joint venture with Suzuki of Japan to produce Maruti 800. It was a real people's car—fuel efficient, affordable and easy to drive, the demand for it signalled the rise of a new Indian middle class.

Amartya Sen: new measures for problems of inequity, welfare

- Known and feted internationally for his work on welfare economics, Amartya Sen proved that gross national product was not enough to assess the standard of living, a finding that led to the creation of the UN Human Development Index, now the most authoritative source to compare welfare of countries.

Rajiv Gandhi comes in

- The 1985-86 budget lowered direct taxes for companies and raised exemption limits for income tax.

- He is widely credited for ushering in the information technology and telecom revolutions in the country.

The fiscal deficit – A permanent feature on India's economic map

A critical feature of the Indian economy has always been its high fiscal deficit—an outcome of the government spending more than its income.

- Much of the government spending is on servicing interest cost of borrowings; defence; pensions; subsidizing food, fertilizer and fuel consumption; and schemes directed at housing, poverty, health and cleanliness.
- A large portion of the government's capital remains locked up in its own companies and holdings, which it is unable to sell.
- The Indian economy, thus, continues to suffer from good capital chasing bad, and a lack of political will to implement bold reforms.

The economist with policy ideas ahead of their time

- The first Asian woman to get a PhD in Economics from Harvard back in 1960, Padma Desai is best known for a critique of India's erstwhile planned economy.
- Her early 1970s book, co-authored with husband and fellow economist Jagdish Bhagwati, on India's industrial and trade policies had a profound impact on professional thinking and policymaking in India in the 1970s.

The golden moment that brought down the last pillars of socialist India

The signs pointing to India's 1991 economic crisis, its worst ever, were long evident.

- The country, for the first time, had to sell 20 tonnes of gold to investment bank UBS on 30 May that year to secure a $240 million loan. It pledged gold three more times after that sale, shipping 46.8 million tonnes of the yellow metal to secure $400 million in loans from Bank of England and Bank of Japan. All this gold was repurchased by December that year.
- The Narasimha Rao-led government with Manmohan Singh as finance minister took over on 21 June 1991 and launched a raft of economic reforms, including the dismantling of the licence Raj.

A two-step, two-day operation to lower the value of the rupee

- The rupee was devalued for the first time by 57% on 6 June 1966 to shore up exports. The move was triggered by the 1965 Indo-Pak war, after which the US withdrew aid to India.
- The next devaluation, however, proved to be far more eventful: On 1 July 1991, the Reserve Bank of India lowered the value of the currency by 9%, and then by 11% just two days later. This was when the economy was facing its worst crisis, and the country's foreign exchange reserves could pay for only three weeks of imports.
- Devaluation is no longer a real option for governments and policymakers as exchange rates are determined by markets. Currency value is now calibrated by the central bank.

Reformist returns as a champion of redistributive economics

- Manmohan Singh's government launched the Mahatma Gandhi National Rural Employment Guarantee Scheme in February 2006 in 200 most backward districts, which was later expanded to cover all rural districts.

- The scheme aimed to enhance livelihood security by providing at least 100 days of guaranteed wage employment in a fiscal year to every rural household whose adult members volunteer to do unskilled manual work.
- The 10 years when Singh was prime minister were also a time of high growth and expansion of the economy as loan rates softened.
    - Foreign direct investment was further liberalized in the early 2000s.
    - The New Telecom Policy of 1999 catalysed the IT sector boom in India, generating widespread benefits for other sectors as well.
    - The policy on disinvestment and privatization gained momentum during this period.
    - Structural policies were formulated to address macroeconomic imbalances. The Fiscal Responsibility and Budget Management (FRBM) Act was passed to address the government's historically high combined gross fiscal deficit.
    - While global growth averaged 4.8 per cent in 2003-2008, the Indian economy achieved an average growth rate of over 8 percent.
    - Sustained momentum in domestic economic activity, improved corporate performance, a healthy investment climate, and favourable global liquidity conditions and interest rates resulted in substantial capital inflows to India from 2004 to 2008.
    - Domestic credit growth, especially bank credit, doubled as a share of GDP.

Of bulls, bears and market watchdogs: A cautionary tale

- In liberalizing India, investments in the stock market became a means to make a quick buck as well as compensate for falling savings rates—and with this boom came white-collar crime and strengthened regulations.
- In April 1992, Indians were introduced to the term 'stock market scam' when stockbroker 'Big Bull' Harshad Mehta was caught using the government bond market to fund his purchases.
- It was a scam pegged at ₹4,025 crore, and accelerated the rise of the Securities and Exchange Board of India as it exists today. This and subsequent scandals led regulators to tighten the screws, bring more transparency, and use technology to eventually reform Indian markets.

Clubbing together for a fight that didn't really happen

- After 1991, the Indian state tried to shed its diffidence about foreign capital and attract investments.
- The **'Bombay Club'**, an informal grouping of politically connected, old-school Indian industrialists who felt threatened by deep-pocketed multinationals, sought protection from the government and got some allowances.
- The club—whose face was Rahul Bajaj—represented a sense of insecurity and a desire for status quo, the struggle between the entrenched and the innovative. But in time, many of those who stridently opposed reforms have built themselves into stronger and bigger companies, competing with global leaders in their segments.

Sowing the seeds for the nation's economic growth surge

- In the Union budget for 1999-2000, then finance minister Yashwant Sinha took forward an idea he had seeded in his 1990-91 budget—disinvestment in public sector enterprises and downsizing the government.
- Carried out privatization of state-owned companies in an upfront manner, rationalized interest rates, stoked the housing boom, and triggered India's growth surge.

Circumventing the sell-by date of public sector enterprises

- With limited options to raise resources and an ever-expanding social sector budget, Manmohan Singh resorted to selling 5% to 20% stake in state-run companies through initial public offerings or secondary issues.
- The government was able to raise funds without selling a majority stake in its firms, while increasing retail participation in the stock market.
- Now answerable to public shareholders, state-run firms are focusing on improving corporate governance and becoming cost-conscious.

The bellwether as the weather vane for the state of the economy

- The rise of the Indian economy is best reflected in BSE's Sensex, the 30-share benchmark index.
- From 1,955.29 points in 1991, the year India ushered in economic reforms, the Sensex touched an all-time high of 40,312.07 points on 4 June this year with expectations of big-ticket reforms from a government with a massive majority driving the optimism.

When the world became Indian companies' corporate oyster

Ten years of economic liberalization unchained Indians, and the first decade of the 21st century reflected that.

- Thus it came to be that a much smaller Tata Steel acquired the UK-based company Corus for an eye-popping $13.1 billion in 2007.
- The Aditya Birla Group's Hindalco Industries Ltd followed this up with a $6-billion buyout of US-based Novelis in 2007.
- The next year, Tata Motors bought Jaguar-Land Rover for $2.3 billion.
- Bharti Airtel bought out Zain Africa in 2010, coughing up $10.7 billion.

It was an era of multi-billion dollar acquisitions.

The overnight note-ban on an unsuspecting nation

- Narendra Modi in his address to the nation, said ₹500 and ₹1,000 banknotes, amounting to 85% of the currency in circulation by value, were no longer valid.

Going down: the planned demolition of a long-condemned institution

- Within eight months of taking over as Prime Minister on 25 May 2014, Narendra Modi replaced the Planning Commission with NITI Aayog (NITI stood for National Institute for Transforming India, in line with Modi's penchant for acronyms).
- NITI Aayog now serves as the government's think tank, formulating medium- and long-term strategies and breaking them into year-wise plans after consultation with the states.

Bringing in a code of conduct to help provide for sick promoters

- India is a country with sick companies but no sick promoters—the result of a system that hasn't held the influential promoters of large companies to account.

- The Modi government introduced the Insolvency and Bankruptcy Code, 2016 (IBC). The code made it possible for lenders to oust errant promoters from a company and hand it over to financially sound owners.
- The success of the IBC is questionable, but it has created a sense of responsibility among promoters. However, there are still cases of promoters trying to retain control of their companies through the back door and others like Nirav Modi fleeing the country after defaulting on large loans.
- Real Estate (Regulation and Development) Act (RERA) has transformed the real estate sector by making it more organised, resulting in increased new launches and sales of houses.

The blanket tax regime that made India one country, one market

- The Narendra Modi government in July 2017, implemented the goods and services tax. India is now one of the few countries to have an indirect tax law that unifies various central and state tax laws.
- In spite of a lot of teething troubles and the increased compliance burden on companies, particularly traders and small and medium enterprises, the new system has removed tax barriers across states and created a single common market, ensuring a free flow of goods without trucks being halted at borders for payment of interstate levies.
- Tax policy reforms, including the adoption of a unified Goods and Services Tax (GST), reduction in corporate and income tax rates, exemption of sovereign wealth funds and pension funds from taxes, removal of the Dividend Distribution Tax, and the abolishment of the retrospective tax, have reduced the tax burden on individuals and businesses.
    - The implementation of GST has broadened the tax base, reduced compliance requirements, facilitated the free flow of goods across state borders, and contributed to the formalisation of the economy.
    - The GST system has exhibited improved buoyancy compared to the pre-GST regime, with average monthly gross collections consistently rising from INR 0.9 lakh crore in FY18 to INR 1.5 lakh crore in FY23.

A country beginning to consider startups as a new business model

- Over the past decade, a number of startups have mushroomed across India as young entrepreneurs experiment with ideas in digital payments, online retail, on-demand delivery, education, software and more.
- One of India's first startups and early unicorns, Flipkart, which was founded by two former Amazon employees in 2007, was valued at over $21 billion when US-based Walmart acquired a 77% stake in it in 2018.
- The number of unicorns, or new businesses valued at over $1 billion, has also risen every year.
- The rise of startups has created a new ecosystem of angel and venture funding, and incubators and accelerators—as well as new patterns of consumption in society

More Reforms

- Recognizing the need for consistent and long-term efforts to improve infrastructure in a country as vast as India, the government has established the **National Infrastructure Pipeline (NIP).**

    - This forward-looking approach to infrastructure investments projects around INR 111 lakh crore of investments spread over five years until 2024-25.
    - Currently, more than 9,000 NIP projects, with a total investment of over INR 108 lakh crore, are at various stages of implementation across different sectors.
    - Programmes such as 'Atmanirbhar Bharat' and 'Make in India' have aimed to enhance India's manufacturing capabilities and promote exports across various industries.
- **Production Linked Incentives (PLIs)** have been introduced to attract domestic and foreign investments, fostering the development of global champions in the manufacturing sector.
- The government has further liberalized the Foreign Direct Investment (FDI) policy, with most sectors now open for 100% FDI under the automatic route.
- **Decriminalizing minor economic offences** under the Companies Act of 2013 has greatly improved the ease of doing business. As a result of this reform, over 1400 default cases have been resolved without resorting to court proceedings, and more than 400,000 companies have voluntarily rectified past defaults to avoid penalties.
- Initiatives such as the **Emergency Credit Line Guarantee Scheme (ECLGS}, revision in the definition of MSMEs under the ambit of Atmanirbhar Bharat, the introduction of TReDS** to address the delayed payments for MSMEs, the **inclusion of Retail and Wholesale trades as MSMEs,** and the **extension of non-tax benefits for three years** in case of an upward change in the status of MSME, have all contributed to the sector's resilience.
- Integrating technology and digital platforms has been a common theme throughout these reforms.
    - Studies have shown that India's core digital economy has grown 2.4 times higher than the overall economic growth between 2014 and 2019.
    - Digital infrastructure has facilitated the creation of digital identities, improved access to finance and markets, reduced transaction costs, and enhanced tax collection.

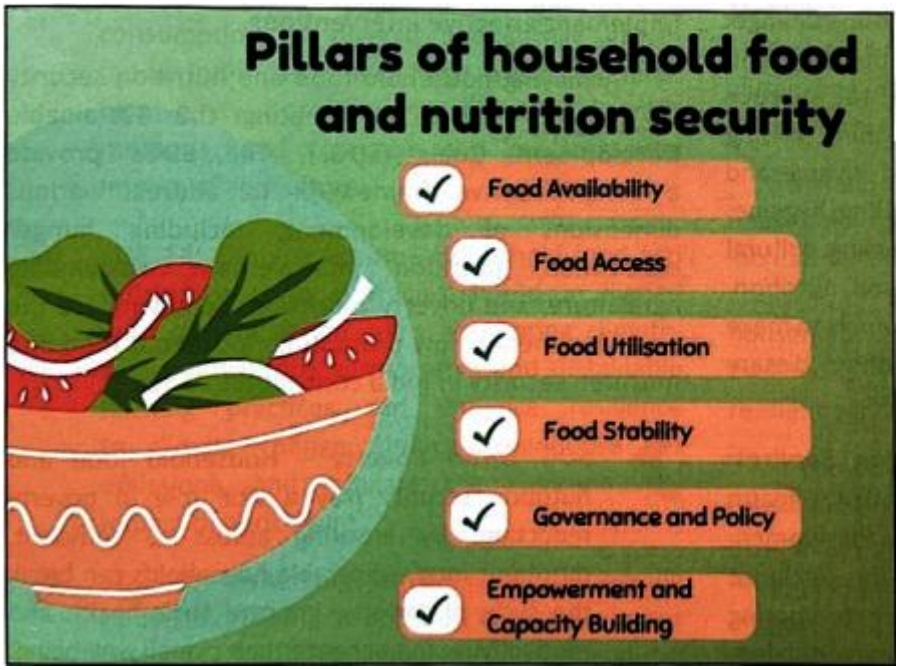
NUTRITION

E. Promoting Household Food and Nutritional Security

As per UN FAO, 'food and nutrition security' exist when all people at all times have physical, social and economic access to food, which is consumed in sufficient quantity and quality to meet their dietary needs and food preferences, and is supported by an environment of adequate sanitation, health services and care allowing for a healthy and active life.

1. Pillars of Household Food and Nutrition Security:

- **Food Availability:** It focuses on ensuring an adequate and consistent supply of diverse food options.
- **Food Access:** It includes factors such as affordability, physical access to markets, infrastructure for storage and transportation, and social safety nets.
- **Food Utilisation:** This focuses on maximizing the nutritional value of food and ensuring optimal health outcomes.
- **Food Stability:** This refers to the ability of households to maintain access to food during shocks and crises.
- **Governance and Policy:** It involves the development and implementation of coherent policies, strategies, and programs that address all dimensions of food security.
- **Empowerment and Capacity Building:** It plays a crucial role in enhancing household food and nutrition security. It can include training on sustainable farming practices, nutrition education, entrepreneurship, and leadership skills.



Source: Kurukshetra

2. Importance of Women's Nutrition

- Malnutrition leads to diseases, lower life expectancy, and maternal complications.
- Maternal health impacts childbearing, child-rearing, and overall family welfare.
- Inadequate nutrition in pregnancy leads to low birth weight, stillbirths, and maternal mortality.
- Undernourished women become undernourished mothers, perpetuating intergenerational malnutrition.
    - Prenatal care can be defined as any non-genetic contribution by a parent that increases the fitness of baby and can occur before or after birth.
    - In India, making parental care more inclusive and access to the kind of care and information that can help save lives is still a challenge.
- Anaemia is prevalent among pregnant women, leading to higher maternal mortality.
- Poor health reduces productivity, earning capacity, and the ability to care for families.

Challenges in Solving Women's Nutrition Problem

- **Awareness Gap:** Lack of awareness about the importance of women's nutrition and its impact on maternal and child health.
- **Underweight or Obesity:** Many Indian women are either underweight or obese, posing risks during pregnancy.
- **Gender Bias:** Intra-household food distribution often favours men, neglecting women's nutritional needs.
- **Access to Services:** Unequal access to basic nutrition, health services, and education facilities, especially in rural areas.
- **Nutrition Education:** Inadequate dissemination of nutrition education across all age groups, genders, and social classes.
- **Implementation Hurdles:** Effective implementation of nutrition programs at the grassroots level faces obstacles.
- **Monitoring and Evaluation:** Difficulty in monitoring and evaluating the impact of nutrition interventions.

Way Forward:

- Address health equity through universal health coverage so that all children are able to access essential health services without undue financial hardship
- Impart comprehensive nutrition education to individuals regardless of age, gender, education, social class, or creed.
- Adopt a holistic approach focusing on the needs of girls and women throughout their life cycle, especially during pregnancy and lactation with the help of ASHA workers.
- Integrate weight monitoring, nutrition counselling, anaemia prevention/treatment, and mental health screening into routine antenatal check-ups.
- Empower women to prioritize their own nutritional needs, breaking the cycle of malnutrition.
- Focus on macro- and micronutrient intake during early childhood.

Addressing the nutritional needs of women and children through well-implemented programs is essential to break the cycle of malnutrition, ensuring healthier generations, and contributing to national development.

3. Shadows of Malnutrition

About Malnutrition:

- It refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients.
- It is a chronic problem and a longstanding challenge for the public administration of India.
- The term malnutrition addresses 3 broad groups of conditions:
    - Undernutrition:
        - It includes wasting (low weight-for-height), stunting (low height-for-age) and underweight (low weight-for-age)
        - Together, the stunted and wasted children are considered to be underweight, indicating a lack of proper nutritional intake and inadequate care post-childbirth.
    - Micronutrient-related malnutrition: It includes micronutrient deficiencies (a lack of important vitamins and minerals) or micronutrient excess; and
    - Overweight: It includes obesity and diet-related noncommunicable diseases (such as heart disease, stroke, diabetes and some cancers).

Issues with addressing the problem of malnutrition:

Manpower constraints:

- **Over 50% Child Development Project Officer (CDPO)** posts were vacant in **Jharkhand, Assam, Uttar Pradesh, and Rajasthan,** pointing to severe manpower constraints in successfully implementing the scheme of such importance.

No routine in social audits:

- Social audits that are meant to allow for community oversight of the quality of services provided in schools are not carried out routinely.

Inadequate funding & implementation:

- Gaps remain in how the already **existing centrally-sponsored schemes** are funded and implemented.
- The **budgets being allocated are nowhere near the scale of the funds** that are required to improve nutrition in the country.
- For example, **the Saksham Anganwadi and Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) 2.0 scheme** (which now includes the Integrated Child Development Services (ICDS) scheme), which seeks to work with adolescent girls, pregnant women, nursing mothers and children below three.
- However, the **budget for this scheme for FY2022-23 was less than 1% more than the actual spend in FY2020-21.**

Issues with cash transfers:

- Cash transfers seem to be a favoured solution for several social sector interventions in India today, and this includes the **health and nutrition sectors**.
- But evidence of the impact of cash transfer on child nutrition in India is limited so far.

- The **effect of cash transfers** is also limited in a context where **food prices are volatile and inflation depletes the value of cash.**

Social Factors:

- Equally, there are social factors such as **'son preference'**, which sadly continues to be prevalent in India and can influence household-level decisions when responding to the nutrition needs of sons and daughters.

Other factors:

- Malnutrition persists due to depressed economic conditions in large parts of the country, the poor state of agriculture in India, persistent levels of unsafe sanitation practices, etc.
- **National Nutrition Mission:**

Suggestions Measures to Improve Malnutrition in India:

- **Need of a comprehensive programme:**
  - A comprehensive programme targeting adolescent girls is required if the intergenerational nature of malnutrition is to be tackled.
- **Cash transfers:**
  - Cash transfers can also be used to incentivise behavioural change in terms of seeking greater institutional support.
  - Food rations through PDS and special supplements for the target group of pregnant and lactating mothers, and infants and young children, are essential.
- **Fixing the pre-existing schemes:**
  - Fixing the pre-existing schemes is the obvious answer to addressing India's multi-dimensional nutrition challenge.
  - Getting the already existing schemes right requires greater involvement of local government and local community groups in the design and delivery of tailored nutrition interventions.
- **Keeping it a top priority:**
  - The need of the hour is to make addressing child malnutrition the top priority of the government machinery, and all year around.

4. Anaemia, its clutches & Way Forward

Anaemia continues to remain widespread in India as its prevalence across age and gender groups has increased. Anaemia has increased by 2-9 per cent among children, pregnant and non-pregnant women and men.

About Anaemia

- Anaemia is a condition in which the number of red blood cells or the haemoglobin concentration within them is lower than normal.
- Haemoglobin is needed to carry oxygen and if you have too few or abnormal red blood cells, or not enough haemoglobin, there will be a decreased capacity of the blood to carry oxygen to the body's tissues. This results in symptoms such as fatigue, weakness, dizziness and shortness of breath, among others.
- The most common causes of anaemia include nutritional deficiencies, particularly iron deficiency, though deficiencies in folate, vitamins B12 and A are also important causes;

haemoglobinopathies; and infectious diseases, such as malaria, tuberculosis, HIV and parasitic infections.

Effects of Anaemia

On Children:

- The largest spike is seen in children between the ages of six and 59 months, where 67.1 per cent are anaemic.
- In rural areas, 68.3 per cent children are anaemic, while the urban load stands at 64.2 per cent.

On Women:

- The second highest increase is recorded in women between the ages of 15 and 19.
- More young women in rural areas (56.5 per cent) are anaemic as compared to urban areas (60.2 per cent).
- All women between the ages of 15 and 49 years reported a four per cent increase in incidence of anaemia
- Meanwhile, the percentage of pregnant women between the ages of 15 and 49 years who are anaemic has increased to 52.2 per cent now.

On Men

- Irrespective of age group, have reported the lowest increase in the incidence of anaemia, at 2.3 per cent for those between the ages of 15 and 49.
- Among them, younger men, between 15 and 19, have shown a 1.9 per cent increase to 31.1 per cent now.

Government's Interventions

- **Under Rashtriya Bal Swasthya Karyakram (RBSK)** of National Health Mission (NHM), periodic haemoglobin estimations are carried out by the Mobile Health Teams (MHTs) placed in every block during their visits to Government and Government aided schools.
    - Each MHT is provided with Digital Haemoglobinometer for screening of anemia.
    - Severe anaemia and Sickle Cell anaemia are the identified health conditions for child health screening and early intervention services under RBSK.
    - Children found to be anaemic are provided nutritional counseling by RBSK teams and referred to nearby health facilities for further management.
- **Under the Anaemia Mukt Bharat (AMB) strategy,** for prevention of anaemia in school children, weekly Iron and Folic acid tablets – IFA pink and IFA blue are provided to children 5-9 years and 10-19 years respectively along with bi-annual deworming, using the school platform.
- **Financial support** is provided to the States and UTs, under National Health Mission, for effective implementation of interventions under AMB strategy based on proposals submitted through their respective annual Programme Implementation Plan (PIP).
- In order to improve the nutritional status of school children, there is provision of Mid-day school meal/ dry ration for the children of primary and upper primary classes of Government and Government aided schools.

The need of the hour is for rigorous research and informed policymaking that engages diverse stakeholders such as public health professionals, program implementers, policymakers, and other

experts in this field. The data on anaemia tells us that something has gone wrong. It is critical that we find out what has changed and move quickly to address it.

5. Approach for Food and Nutritional Security in India:

- **Sustainable Practices:** This involves promoting sustainable farming practices that enhance agricultural productivity while minimising environmental impact.
- **Diversification of Food Production:** This includes promoting traditional and underutilised crops, horticulture, agroforestry, and aquaculture.
- **Access Inputs and Technologies:** This includes promoting the development and dissemination of improved crop varieties, resilient seeds, and appropriate technologies for smallholder farmers.
- **Social Protection Programmes:** It includes implementing targeted social protection programmes to address immediate food needs and reduce vulnerability.
- **Nutrition Education and Behaviour Change:** This implies promoting nutrition education and behaviour change communication to improve household dietary practices.
- **Strengthening Health and Nutrition Services:** This refers to enhancing access to quality health and nutrition services, particularly for women, children, and vulnerable groups.
- **Policy and Governance:** This comprises developing and implementing policies and governance frameworks that prioritise food and nutrition security.
- **Research and Innovation:** It includes conducting research on climate-smart agriculture, nutrition-sensitive interventions, and sustainable food production Systems.

Food & Nutritional Security and Sustainable Development Goals (SDGs)

Achieving household food and nutrition security in India is crucial for meeting the Sustainable Development Goals (SDGs).

- **SDG 1: No Poverty –** Household food and nutrition security play a vital role in poverty reduction. By ensuring access to sufficient, nutritious food, vulnerable households can break the cycle of poverty.
- **SDG 2: Zero Hunger —** By ensuring that all individuals have access to nutritious food year-round, India can significantly reduce hunger and malnutrition.
- **SDG 3: Good Health and Well-being —** Access to a diverse and nutritious diet is essential for improving health outcomes.
- **SDG 5: Gender Equality —** Household food and nutrition security can help address gender inequalities.
- **SDG 12: Responsible Consumption and Production —**By encouraging the production and consumption of diverse and locally grown foods, India can reduce food waste, conserve biodiversity, promote sustainable farming methods, and minimise the environmental impact of agriculture.
- **SDG 13: Climate Action —** Household food and nutrition security strategies should be aligned with climate action goals.
- **SDG 17: Partnerships for the Goals —** Achieving household food and nutrition security requires strong multi-stakeholder partnerships.

Government Initiatives to Solve Nutritional Deficiencies

- **Integrated Child Development Services – Common Application Software (ICDS-CAS):** This system enabled the Anganwadi Workers (AWWs) to track health and nutritional services nationwide, enabling data-driven decisions at the grassroots level.
    - As part of the Integrated Child Development Services (ICDS), anganwadis play a crucial role in supporting households, particularly from low-income families, by providing childcare, health and nutrition, education, supplementary nutrition, immunisation, health check-up and referral services.
    - The largest in the world, ICDS covers about 88 million children aged 0-6 years in India.
    - Their closure significantly impacted service delivery and weakened an important social safety net.
    - Even as anganwadis resumed services, the closure has impacted their ability to serve as childcare centres.
- **POSHAN Abhiyan:** Launched in 2018, POSHAN Abhiyan focuses on enhancing nutritional outcomes for children, adolescents, women, and lactating mothers, with a particular emphasis on rural areas.
    - The Abhiyaan targets to reduce
        - Stunting by 2% per annum
        - Undernutrition by 2% per annum
        - Anemia (among young children, women and adolescent girls) by 3% per annum
        - Reduce low birth weight by 2% per annum
    - It is an inclusive **Jan Andolan or "People's Movement**" that involves participation of public representatives of local bodies, government departments of the States/UTs, social organizations and the public and private sector at large.
    - **POSHAN Tracker:** A governance tool by the Ministry of Women and Child Development for transparently tracking nutrition service delivery and identifying malnutrition in children.
- **National Nutrition Mission:** A comprehensive nationwide programme to enhance the nutritional outcomes for pregnant women, lactating mothers and children by addressing undernutrition, malnutrition and low birth weight.
    - To reduce stunting and wasting by 2 percent per year (total 6 per cent until 2022) among children and anaemia by 3 percent per year (total 9 per cent until 2022) among children, adolescent girls and pregnant women and lactating mothers.
    - **The Ministry of Women and Child Development is the nodal ministry for implementation.**
- **National Institute of Nutrition:**
    - It publishes the 'Nutrition Atlas' which provides comprehensive data on the nutrition level at the national and state level.
    - It developed the 'Nutrify India Now' mobile app for assessing nutrients from

consumed foods.

- **Maternal Health and Nutrition Programs:** Initiatives like Pradhan Mantri Matru Vandana Yojana (PMMVY) and Janani Suraksha Yojana (JSY) provide cash incentives and cost-free antenatal care services to pregnant women.
- **Prime Minister-Poshan Shakti Nirman (PM-POSHAN):** Formerly known as the Mid-day Meal Scheme, it provides nutritional support to primary education students.
    - **Supplementary nutrition:** Supplementary nutrition for children in aspirational districts and those with high prevalence of anaemia.
    - **States to decide diet**: It essentially does away with the restriction on the part of the Centre to provide funds only for wheat, rice, pulses and vegetables. Currently, if a state decides to add any component like milk or eggs to the menu, the Centre does not bear the additional cost. Now that restriction has been lifted.
    - **Nutri-gardens:** They will be developed in schools to give children "firsthand experience with nature and gardening".
    - **Women and FPOs:** To promote vocals for local, women self-help groups and farmer producer organisations will be encouraged to provide a fillip to locally grown traditional food items.
    - **Social Audit:** "Inspection" by students of colleges and universities for ground-level execution.
    - **Tithi-Bhojan:** Communities would also be encouraged to provide the children food at festivals etc.
    - **DBTs to school:** States will be asked to do direct benefit cash transfers of cooking costs to individual school accounts, and allowances to the bank accounts of cooks and helpers.
    - **Holistic nutrition:** Use of locally grown traditional foods will be encouraged, along with school nutrition gardens.
- **NITI Aayog's "Nourishing India":** This document focuses on preventing undernutrition, particularly in the first 1000 days of a child's life.
- **Scheme for Adolescent Girls (SAG):** Provides nutritional support, health check-ups, and education for adolescent girls aged 14-18 years.

All the best,
Team IASbaba 😊

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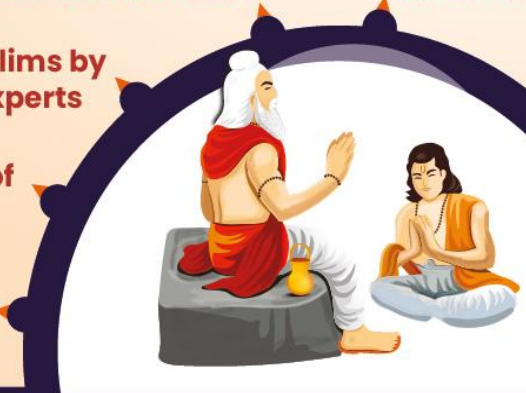

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