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Science Reporter
सत्यमेव जयते
विज्ञान एवं प्रौद्योगिकी मंत्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY

Table of Contents

1. One Nation One Fertilizer Scheme
2. Multidimensional Poverty Index
3. Dismissal Of A Minister
4. Pradhan Mantri Kisan Samman Nidhi
5. North Atlantic Treaty Organization
6. National Maritime Heritage Complex
7. InterPol
8. Midday Meal Scheme
9. Insulin And Type 1 Diabetes
10. Bariatric Surgery

THE HINDU Page 12

ONE NATION ONE FERTILIZER SCHEME

(Syllabus: GS Paper 3 - Economy)

PM Modi inaugurates 'One Nation, One Fertilizer' scheme

The Hindu Bureau
NEW DELHI



Narendra Modi addressing the PM Kisan Samman Sammelan.

Prime Minister Narendra Modi on Monday inaugurated 600 Kisan Samridhi Kendras and 'One Nation, One Fertilizer' scheme and said that these steps were being taken to modernise agriculture.

The Kisan Samridhi Kendras would function as helping centres for farmers in this process, he added.

The PM was speaking at a conclave of farmers and 1,500 start-ups in the agriculture sector, where he also released the 12th instalment of the PM Kisan Samman Nidhi. Under the scheme, ₹16,000 crore will be credited into the bank accounts of over 8.5 crore farmers. Over ₹2 lakh crore has been transferred to farmers, helping them manage costs, he said.

The amount under the scheme would be credited directly into the accounts of farmers. "There will be no mediators for this," Mr. Modi added.

He said that earlier urea factories in the country were closed down to benefit importers and added that after 2014, the government took several steps and now the country was marching towards self sustenance in liquid nano urea production. "Nano urea will help farmers to address the issue of scarcity," Mr. Modi said.

He said fertilizers would be rebranded as "Bharat" to help farmers and it would reduce the prices of major fertilizers as transportation cost would be regulated.

He added that as part of observing the Millets Year in 2023, the Centre would promote cultivation of millets. New varieties of seeds were also being produced to meet the challenges of climate change.

Context: Prime Minister inaugurated 'One Nation, One Fertilizer' scheme (Pradhan Mantri Bhartiya Jan Urvarak Pariyojana).

One Nation One Fertiliser (Pradhan Mantri Bhartiya Jan Urvarak Pariyojana (PMBJP))

- **Mandatory Brand name and Logo:** Under the scheme, all fertiliser companies, **State Trading Entities (STEs) and Fertiliser Marketing Entities (FMEs) will be required to use a single "Bharat" brand for fertilisers** and logo under the PMBJP.
  - The new "Bharat" brand name and PMBJP logo **will cover two-thirds** of the front of the fertiliser packet.
    - PMBJP is the scheme under which the central government gives subsidies annually.
  - The manufacturing brands can only display their name, logo, and other information on the remaining **one-third space.**
- **Mandatory prefix 'BHARAT':** The **single brand name** for Urea, Diammonium Phosphate DAP, Muriate of potash (MOP) and Nitrogen Phosphorus Potassium NPK etc would be **BHARAT UREA, BHARAT DAP, BHARAT MOP and BHARAT NPK** etc. respectively for all Fertiliser Companies, State Trading Entities (STEs) and Fertiliser Marketing Entities (FMEs).
- **Eligibility**: This scheme applies to **both public & private sector companies.**

Fertilizer Subsidy

- **Subsidy on Urea:** The Centre pays subsidy on urea to fertiliser manufacturers **on the basis of cost of production at each plant and the units** are required to sell the fertiliser at the government-set **Maximum Retail Price (MRP).**
- **Subsidy on Non-Urea Fertilisers**: The MRPs of non-urea fertilisers are **decontrolled or fixed by the companies.**
  - The Centre pays **a flat per-tonne subsidy on these nutrients** to ensure they are priced at reasonable levels.
  - All Non-Urea based fertilisers are **regulated under Nutrient Based Subsidy Scheme.**
  - **Examples of non-urea fertilisers**: Di-Ammonium Phosphate (DAP), Muriate of Potash (MOP).
- **Nutrient Based Subsidy (NBS) Scheme (implemented since 2010 by the DoF):** A fixed amount of subsidy **decided on an annual basis**, is provided on each grade of subsidized Phosphatic & Potassic (P&K) fertilizers depending on its nutrient content.

BUSINESS STANDARD

Page 4

MULTIDIMENSIONAL POVERTY INDEX

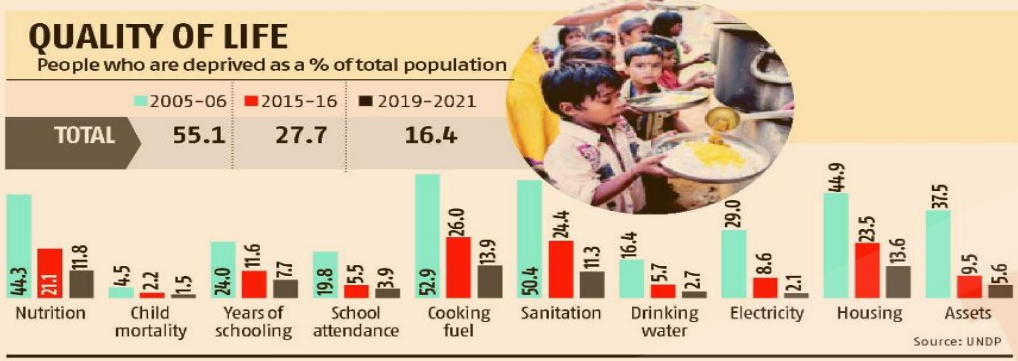
(Syllabus: GS Paper 2 - Issue related to poverty and hunger)

140 mn pulled out of poverty in India since 2015-16: UNDP

ASIT RANJAN MISHRA
New Delhi, 17 October

India's multidimensional poverty fell by 140 million between 2015-16 and 2019-2021 compared to a decline of 275 million between 2005-06 and 2015-16, according to the latest assessment by the United Nations Development Programme (UNDP).

Using the latest data from the National Family Health Survey, the report said multidimensional poverty declined faster from 2015-2016 to 2019-21 at 11.9 per cent year-on-year — coinciding with the rule of the National Democratic Alliance government — as against an 8.1 per cent per year fall from 2005-2006 to 2015-2016, that mostly corresponds with the years of the United Progressive Alliance government. "This is unsurprising because relative poverty reduction is easier to achieve when starting levels of poverty are lower," the report said.



The Global Multidimensional Poverty Index (MPI), released by the UNDP and the Oxford Poverty and Human Development Initiative (OPHI), looks beyond income as a measurement of poverty to understand how people experience poverty in different aspects of their daily lives through three parameters — health, education, and standard of living — which are further divided into 10 indicators.

The MPI value for India fell from 0.283 in 2005-2006 to 0.122 in 2015-2016, then further to 0.069 in 2019-2021, in sync with the decline in the incidence of poverty from 55.1 per cent to 27.7 per cent to 16.4 per cent. "In roughly 15 years... the MPI value, the incidence of poverty, and deprivations among poor people in the 10 MPI indicators were each more than halved," the report added.

The UNDP said despite tremendous gains made by India, the ongoing task of ending poverty for the 228.9 million poor (the largest globally) in 2019/2021 is daunting — especially as the number has nearly certainly risen since the data were collected.

The report said the effects of the Covid-19 pandemic on poverty in India cannot be fully assessed because 71 per cent of data points from the 2019-2021 NFHS for the country were collected before the pandemic.

According to recent estimates by the World Bank, around 56 million Indians might have plunged into extreme poverty in 2020 as a result of the pandemic, contributing to the 71 million increase in the global tally. To be sure, the World Bank doesn't measure multidimensional poverty and its poverty estimates are based on an income of $2.15 per day at purchasing power parity (PPP).

The UNDP said it is clear that multiple policy actions and schemes underpin the improved results in India. "There have been visible investments in boosting access to sanitation, cooking fuel, and electricity — indicators that have seen large improvements. A policy emphasis on universal coverage — for example in education, nutrition, water, sanitation, employment, and housing — likely contributed to these results," it added.

Rural-urban disparities are stark in multidimensional poverty reduction: The percentage of people who are poor is 21.2 per cent in rural areas against 5.5 per cent in urban areas. "Rural areas account for nearly 90 per cent of poor people: 205 million of the nearly 229 million poor people live in rural areas — making them a clear priority," the report said.

Bihar, the poorest state in 2015-2016, saw the fastest reduction in the incidence of poverty, from 77.4 per cent in 2005-2006 to 52.4 per cent in 2015-2016, to 34.7 per cent in 2019-2021.

"Across states and Union Territories, the fastest reduction in relative terms was in Goa, followed by Jammu & Kashmir, Andhra Pradesh, Chhattisgarh, and Rajasthan. In relative terms, the poorest states have not caught up."

"Of the 10 poorest states in 2015-2016, only one (West Bengal) was not among the 10 poorest in 2019-2021. The rest— Bihar, Jharkhand, Meghalaya, Madhya Pradesh, Uttar Pradesh, Assam, Odisha, Chhattisgarh, and Rajasthan — remain among the 10 poorest," the UNDP said.

Context: According to UNDP Multidimensional Poverty Index (MPI), 140 million pulled out of poverty in India since 2015-16.

Multidimensional Poverty Index (MPI)

- **Launched by:** United Nations Development Programme (**UNDP**) and the Oxford Poverty & Human Development Initiative (**OPHI**) in 2010.
- **Concept**: based on the idea that **poverty is not unidimensional** (not just depends on income and one individual may lack several basic needs like education, health etc.), **rather it is multidimensional.**
- **Objective**: The index shows the **proportion of poor** people and the **average number of deprivations** each poor person experiences at the same time.
- **Three dimensions and ten indicators:**
  - **Education**: **Years of schooling and child enrollment** (1/6 weightage each, total 1/3);
  - **Health**: **Child mortality and nutrition** (1/6 weightage each, total 1/3);
  - **Standard of living**: **Electricity, flooring, drinking water, sanitation, cooking fuel and assets** (1/18 weightage each, total 1/3).
- **Definition of multidimensionally poor:** A person is multidimensionally poor if she/he is **deprived in one third or more (means 33% or more) of the weighted indicators (out of the ten indicators)**.
  - Those who are deprived in one half or more of the weighted indicators are considered living in extreme multidimensional poverty.

INDIAN EXPRESS

Page 7

APPOINTMENT AND DISMISSAL OF A MINISTER

(Syllabus: GS Paper 2 - Polity & Governance)

Arif warns ministers of removal; no such dictatorial powers: CPM

EXPRESS NEWS SERVICE
THIRUVANANTHAPURAM, NEW DELHI, OCTOBER 17

KERALA GOVERNOR Arif Mohammed Khan Monday warned ministers "who lower the dignity" of his office that they would invite action including removal from their post — the latest escalation in the tension between Raj Bhavan and the CPI(M)-led government.

The central leadership of the CPI(M) reacted sharply to his statement saying such "dictatorial powers" are not vested with the Governor by the Constitution, and this has "exposed" Khan's "political bias" against the LDF government. The party also sought President Droupadi Murmu's intervention in the matter.

The Kerala Governor's Twitter handle had posted: "Hon'ble Governor Shri Arif Mohammed Khan said: 'The CM and Council of Ministers have every right to advise Governor. But statements of individual ministers that lower the dignity of the office of the Governor, can invite action including withdrawal of pleasure'."

In the case of state ministers, the appointing authority is the Governor, with the Chief Minister providing recommendations. A minister can remain in office only at the Governor's pleasure. Withdrawal of that pleasure means the minister has to quit or the Governor can ask the chief minister to remove a minister.



Arif Mohammed Khan

Referring to the tweet, the CPM politburo in a statement said: "This amounts to saying that the Governor can dismiss a minister by withdrawing his pleasure. Such dictatorial powers are not vested with the Governor by the Constitution. By making such a statement, Shri Khan has only exposed his political bias and hostility to the LDF government. The President of India should intervene to prevent the Kerala Governor from making such anti-Constitutional and anti-democratic statements."

Sources said Khan was provoked by the statement of Higher Education Minister R Bindu that all were bound by their Constitutional duties. "The minister was referring to the Governor's alleged refusal to give assent to University Laws (Amendment) Bill, 2022, which was passed by the Assembly, in September this year. The Bill had given an upper hand to the state government in the selection of vice-chancellors of the universities in Kerala," said a source.

She had stated that the proposed legislation laid down certain safeguards for teachers and students in autonomous colleges. "He (the Governor) could have returned the Bill by citing anomalies if there were any. He has instead abandoned it. It is the responsibility of all and not a particular section alone to fulfil their Constitutional duties," she stated last Friday.

The governor-government tussle has been going on in Kerala for the last few months. Last week, Khan withdrew 15 of his nominees from the senate of Kerala University in his capacity as the chancellor. Khan cracked the whip on the Senate members after they kept away from a meeting of the university body which should have proposed its nominee for the search-cum-selection committee for the next V-C.

Earlier, Khan had formed a search committee without the Senate nominee. The University Act mandates that the committee should have a nominee of the Senate. Since there was no recommendation for the nominee from the CPI(M)-dominated Senate, Khan notified only a two-member committee. CPI(M) was of the view that Khan had rushed through the process.

Context: Kerala Governor opened the next battlefront against the State government by threatening to remove Ministers from their posts if they continued to lower the dignity of his office.

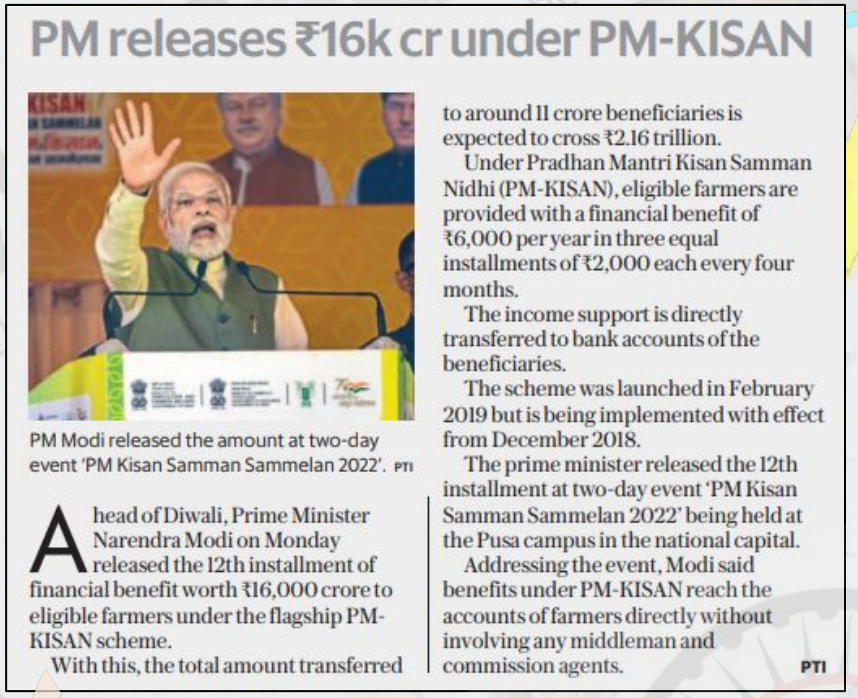
Appointment and Dismissal of a Minister

- **Article 164(1) of the Constitution**: The **Chief Minister shall be appointed by the Governor** and the **other Ministers shall be appointed by the Governor** on the **advice of the Chief Minister**, and the Ministers shall hold office at the pleasure of the Governor.
  - **No Governor can dismiss an individual Minister** from a State Cabinet unless recommended by the Chief Minister.
  - Though the **Governor is the appointing authority of the Chief Minister,** he **cannot appoint any person of his choice as a State Minister.**
  - A **State Minister can be appointed only on the recommendation of the Chief Minister** and if a **Minister has to be removed from the post, it can only be on the advice of the Chief Minister.**
- **SC's view:** Supreme Court held that **a government that enjoys a majority in the House cannot be dismissed by the Governor.**
  - Thus, if the government enjoys a majority in the House, the **Governor cannot say that he withdraws his pleasure.**
- **Pleasure of the Governor:** The Governor's pleasure continues in the Constitutional sense **as long as the government enjoys a majority in the House.**
- Thus, the **pleasure of the Governor is co-terminus** with the majority in the House..

LIVEMINT Page 9

PRADHAN MANTRI KISAN SAMMAN NIDHI

(Syllabus: GS Paper 3 - Agriculture)



PM releases ₹16k cr under PM-KISAN

PM Modi released the amount at two-day event 'PM Kisan Samman Sammelan 2022'. PTI

Ahead of Diwali, Prime Minister Narendra Modi on Monday released the 12th installment of financial benefit worth ₹16,000 crore to eligible farmers under the flagship PM-KISAN scheme.

With this, the total amount transferred to around 11 crore beneficiaries is expected to cross ₹2.16 trillion.

Under Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), eligible farmers are provided with a financial benefit of ₹6,000 per year in three equal installments of ₹2,000 each every four months.

The income support is directly transferred to bank accounts of the beneficiaries.

The scheme was launched in February 2019 but is being implemented with effect from December 2018.

The prime minister released the 12th installment at two-day event 'PM Kisan Samman Sammelan 2022' being held at the Pusa campus in the national capital.

Addressing the event, Modi said benefits under PM-KISAN reach the accounts of farmers directly without involving any middleman and commission agents.

PTI

Context: Prime Minister released ₹16,000 crore into the bank accounts of more than 85 million farmers across the country, in the 12th instalment of the Pradhan Mantri Kisan Samman Nidhi.

Pradhan Mantri Kisan Samman Nidhi

- **Launched**: on 24th February, 2019 to supplement financial needs of land holding farmers.
- **Benefits**: Financial benefit of Rs **6000/- per year in three equal installments (every 4 month)** is transferred into the bank accounts of farmers' families across the country **through Direct Benefit Transfer (DBT) mode.**
- **Eligibility**: **all landholding farmers** (subject to the prevalent exclusion criteria).
- **Exclusion Categories:**
  - All **Institutional Landholders**.
  - Farmer families in which one or more of its members belong to the following categories:
    - Former and present holders of **constitutional posts**
    - Former and present **Ministers/ State Ministers and former/present Members of LokSabha/ RajyaSabha/ State Legislative Assemblies/ State Legislative Councils, former and present Mayors of Municipal Corporations, former and present Chairpersons of District Panchayats.**
    - All **serving or retired officers and employees** of Central/ State Government Ministries /Offices/Departments and its field units Central or State PSEs and Attached offices /Autonomous Institutions under Government as well as regular employees of the Local Bodies (Excluding Multi Tasking Staff /Class IV/Group D employees)
    - All **superannuated/retired pensioners** whose monthly pension is Rs.10,000/-or more (Excluding Multi Tasking Staff / Class IV/Group D employees) of above category
    - All Persons who **paid Income Tax in last assessment year**
    - **Professionals** like Doctors, Engineers, Lawyers, Chartered Accountants, and Architects registered with Professional bodies and carrying out profession by undertaking practices.
- **Funding**: It is a Central Sector Scheme with 100% funding from the Government of India.
- **Implementation**: It is being implemented by the **Ministry of Agriculture and Farmers Welfare.**

- **Identifications of beneficiaries:** Responsibility of identifying the landholder farmer family eligible for benefit under the scheme **shall be of the State/UT Government.**
- **PM-KISAN Mobile App**: It was **developed and designed by the National Informatics Centre** in collaboration with the Ministry of Electronics and Information Technology.
- **Physical Verification Module:** A **mandatory physical verification of 5% beneficiary every year** is being done as per the provisions laid down in the scheme.

ECONOMIC TIMES Page 8

NORTH ATLANTIC TREATY ORGANIZATION (NATO)

(Syllabus: GS Paper 2 - International Organisations)

NATO Holds 'Routine' Nuclear Drill

Brussels: NATO on Monday launched its regular nuclear deterrence drills in western Europe, after tensions soared with Russia over President Vladimir Putin's veiled threats in the face of setbacks in Ukraine.

The 30-nation alliance has stressed that the "routine, recurring training activity" -- which runs until October 30 -- was planned before Moscow invaded Ukraine and is not linked to the current situation.

It will involve US B-52 long-range bombers, and up to 60 aircraft in total will take part in training flights over



Belgium, the United Kingdom and the North Sea.

NATO Secretary General Jens Stoltenberg has rejected any calls to scrap the drill after Putin ratcheted up his nuclear rhetoric as his troops lose ground in Ukraine.

"It would send a very wrong signal if we suddenly now cancelled a routine, long-time planned exercise because of the war in Ukraine," Stoltenberg said last week.

"We need to understand that NATO's firm, predictable behaviour, our military strength, is the best way to prevent escalation."

NATO says it has seen no change in Russia's nuclear posture despite the tougher language from the Kremlin. "But we remain vigilant," Stoltenberg said. **AFP**

Context: Nato launched its regular nuclear deterrence drills in western Europe, after tensions soared with Russia over President Vladimir Putin's veiled threats in the face of setbacks in Ukraine.

North Atlantic Treaty Organization (NATO)

- **About**: It is a **military alliance** established by the North Atlantic Treaty (also called the Washington Treaty) of April, 1949, **by the United States, Canada, and several Western European nations** to provide collective security against the Soviet Union.
- **Members**: currently 30 member states.
  - **12 founding members**: Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States.
  - **Latest member**: North Macedonia (2020)
  - **India is not a member of NATO** because it is a firmly non-aligned country and stakes its international reputation on remaining non-aligned.
- **Headquarters**: Brussels, Belgium.
- **Objectives**:
  - **Political objectives:** NATO **promotes democratic values** and enables members to consult and cooperate on defense and security-related issues to solve problems, build trust and, in the long run, prevent conflict.
  - **Military Objectives:** NATO is **committed to the peaceful resolution of disputes.** If diplomatic efforts fail, it has the military power to undertake crisis-management operations.
- **Funding**: NATO is **funded by its members.**
  - The **U.S. contributes roughly three-fourths** of NATO's budget.
- **Functions**: NATO has an integrated military command structure but very few forces or assets are exclusively its own.
  - **Most forces remain under full national command and control until member countries agree** to undertake NATO-related tasks.
  - **All 30 allies have an equal say,** the Alliance's decisions must be unanimous and consensual, and its members must respect the basic values that underpin the Alliance, namely democracy, individual liberty and the rule of law.
  - NATO's **protection does not extend to members' civil wars or internal coups.**

PIB

Oct 18

NATIONAL MARITIME HERITAGE COMPLEX

(Syllabus: GS Paper 1 - Art & Culture)

PM to review site work progress of National Maritime Heritage Complex at Lothal on 18th October

NMHC to proudly showcase India's rich and diverse maritime heritage

Context: Prime Minister reviewed the site work progress of the **National Maritime Heritage Complex** at Lothal, Gujarat.

National Maritime Heritage Complex

- **Memorandum of Understanding (MoU):** in 2021, the **Ministry of Culture (MoC) and Ministry of Ports, Shipping and Waterways (MoPSW)** signed a Memorandum of Understanding (MoU) for 'Cooperation in Development of National Maritime Heritage Complex (NMHC)' **at Lothal, Gujarat**.
- **Objectives**: **d**eveloped as an **international tourist destination,** where the maritime heritage of India from ancient to modern times would be showcased.
- **Unique Features**: recreation of ancient Lothal city, which is one of the prominent cities of the ancient I**ndus valley civilization.**
- **Other features**: It is going to cover an area of 400 acres, with structures such as Heritage Theme Park, National Maritime Heritage Museum, Lighthouse Museum, Maritime Institute, eco-resorts, and more.
    - There will also be many **pavilions** where all coastal states in India and union territories can showcase their artifacts and maritime heritage.

Lothal

- **Historical aspects**: One of the **southernmost cities of the ancient Indus Valley Civilization** located in Gujarat. Construction of the city began **around 2400 BCE.**
- **Mathematically planned**: It had a **grid pattern** with proper streets **crossing at right angles and drainage systems.**
- **Emphasis on cleanliness:** Can be judged from the **discovery of toilets and lota-like jars** which shows our fixation with washing up goes back all the way to the Harappan Civilisation.
- **Divided into two parts**: the upper town and the lower town.
- **Port**: **Rectangular basin** has been found at Lothal that was said to be the dockyard. It is 218 m long and 37 m wide and is bound on all sides by baked bricks.
- **City of trade**: The discovery of **Lothal seals** in other ancient cities points to its **importance in trade that was conducted with other ancient civilisations.**
- **Highly skilled artisans**: The **Lothal bead-makers were highly skilled** as hundreds of carnelian beads in various stages of production and tools and raw materials were recovered.
    - **Beads made from semi-precious stones**, terracotta, gold, etc. were popular in areas as far as Sumer (modern-day Iraq), Bahrain and Iran.

PIB

Oct 18

INTERNATIONAL CRIMINAL POLICE ORGANISATION

(Syllabus: GS Paper 3 - Internal Security)

PM to address 90th INTERPOL General Assembly on 18th October

Context: Prime Minister addressed the 90th Interpol General Assembly in New Delhi.

Key Points

- The **90th General Assembly of INTERPOL** will be held from 18th to 21st October.
- The **Interpol General Assembly meeting is taking place in India** after a gap of about 25 years - it was last held in 1997.
- **India's proposal to host the INTERPOL General Assembly in 2022** at New Delhi coinciding with celebrations for 75th year of India's independence was accepted by the General Assembly with overwhelming majority.
- The event provides an **opportunity to showcase best practices** in India's law and order system to the entire world.

International Criminal Police Organisation or Interpol

- **About**: a **195-member intergovernmental** organisation.
  - Formed in 1923 as the International Criminal Police Commission, and **started calling itself Interpol in 1956.**
  - **India joined the organisation in 1949**, and is one of its oldest members.
- **Headquarter**: Lyon, France.
- **General Assembly**: It is Interpol's **supreme governing body, and comprises representatives from all its member countries**.
  - It **meets annually** for a session lasting approximately four days, to vote on activities and policy.
  - Each country is **represented by one or more delegates at the Assembly**, who are typically chiefs of law enforcement agencies.
  - The **Assembly also elects the members of the Interpol Executive Committee**, the governing body which "provides guidance and direction in between sessions of the Assembly".
- **Interpol's declared global policing goals include:** Countering terrorism, promoting border integrity worldwide, protection of vulnerable communities, providing a secure cyberspace for people and businesses, curbing illicit markets, supporting environment security, and promoting global integrity.
- **INTERPOL Notices**: international requests for cooperation or alerts allowing police in member countries to share critical crime-related information.
  - **Interpol issues eight different types**: Red Notice, Green Notice, Yellow Notice, Orange Notice, Blue Notice, Purple Notice, Black Notice, and an INTERPOL–United Nations Security Council Special Notice.



DOWN TO EARTH

Oct 18

MIDDAY MEAL SCHEME

(Syllabus: GS Paper 2 - Government Policies & Interventions)

FOOD

Mid-day meal price hike less than Re 1 as food inflation hits record level

The annual rise of material price came after a pause of 2 years because of the pandemic

By Taran Deol
Published: Monday 17 October 2022



Context: The Centre has increased allocations for materials cost for mid-day meals at schools by 9.6 per cent, after two unprecedented years of the COVID-19 pandemic.

Key points

- India is **home to a third of the world's malnourished children**. It also ranked 107 out of 121 countries on the Global Hunger Index (2022).
- The **price of a mid-day meal** in primary school (grades 1-5) has been set at Rs 5.45 and in upper primary school (class 6-8) at Rs 8.17.
- **Material cost makes up the largest proportion** of the cost of the Pradhan Mantri Poshan Shakti Nirman scheme (PM POSHAN).
    - It **accounts for money required** to buy oil, pulses, vegetables, fuel, spices, salt and cooking labour coast.
- **Wheat and rice** is provided under the public distribution system.
- The **approved funding pattern mandates a 90:10 ratio between the Centre and states** respectively for the North Eastern Region, Himachal Pradesh, Uttarakhand & Jammu and Kashmir.
    - **For Union territories (UT) without a legislature, the Centre contributes the entire cost**, while the ratio is split **60:40 for remaining states** and the two UTs with legislature - Delhi and Puducherry.
- **Insufficient LPG supply and high inflation**, particularly for pulses - a key source of protein for the student beneficiaries - are the major pressure points.

Midday Meal Scheme

- **About**: largest school feeding programme of its kind in the world, covering students enrolled in government schools from Classes 1 to 8.
- **Objective**: to enhance enrolment in schools.
- **Nodal Ministry**: Ministry of Education.
- **Current Status**: The current version of the programme, renamed PM Poshan Shakti Nirman or PM Poshan in 2021.

Midday Meal Scheme

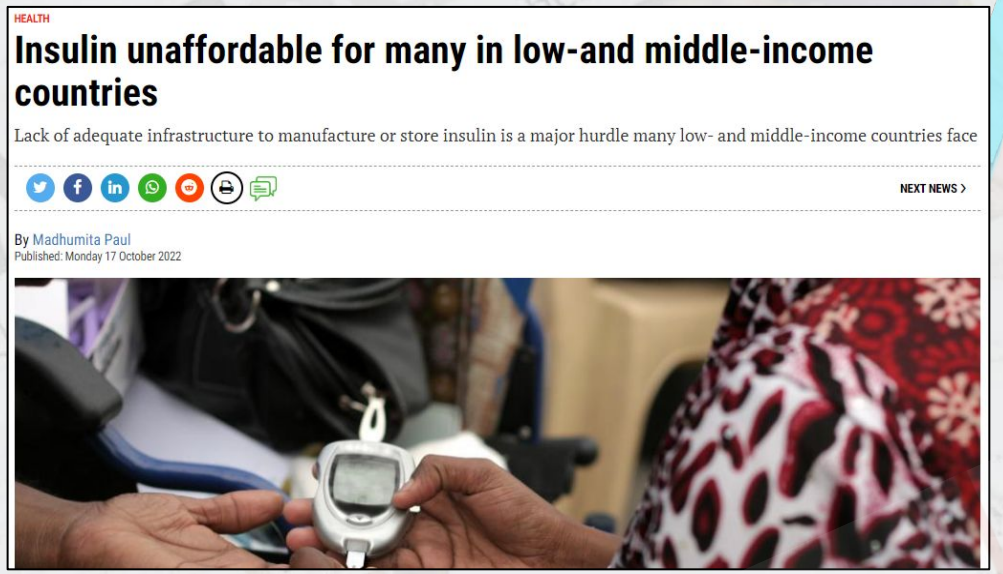
- **Coverage**: The scheme covers 11.80 crore children across Classes 1 to 8 (age group 6 to 14).
- **Legal Entitlement:** It is not just a scheme, but a legal entitlement of all school-going children in primary and upper primary classes, through the National Food Security Act (NFSA), 2013.
    - This was also reaffirmed by the Supreme Court's ruling in People's Union of Civil Liberties vs Union of India and Others (2001).
- **Funding Pattern**: The allocation of Rs 4.97 per child per day (primary classes) and Rs 7.45 (upper primary) are shared in
    - 60:40 ratio with states and UTs with a legislature.
    - 90:10 with the Northeastern states, Jammu and Kashmir, Himachal Pradesh and Uttarakhand.
    - The Centre bears 100% of the costs in UTs without legislature.

DOWN TO EARTH

Oct 18

INSULIN AND TYPE 1 DIABETES

(Syllabus: GS Paper 2 - Health)



HEALTH

Insulin unaffordable for many in low-and middle-income countries

Lack of adequate infrastructure to manufacture or store insulin is a major hurdle many low- and middle-income countries face

NEXT NEWS >

By Madhumita Paul
Published: Monday 17 October 2022

Context: Millions of diabetes patients in low- and middle-income countries cannot access or afford insulin, according to a recent report.

More In News

- **Three in four adults with diabetes** worldwide live in low- and middle-income countries.
- **Only 29 of the 108 countries in scope have all the insulins** classified as essential medicines by the World Health Organization registered and only one of those is a low-income country.
    - In 24 countries, **no insulins were found to be registered at all.**
- The **lack of adequate infrastructure** to manufacture or store insulin is a major hurdle many low- and middle-income countries face.

Insulin

- Insulin is **a hormone secreted by the b cells of the pancreas**.
- It is commonly associated with an ability to **regulate glucose metabolism**.
- An **important mechanism in the cell is insulin signalling**, which is a series of biochemical reactions that convey information about availability of insulin and the necessity to regulate the glucose in the blood.
- There are **two main pathways for insulin signalling**, named **AKT and ERK**, which together balance metabolism and growth.
- These **specifically control storage of glucose in the liver** and also **stimulate glucose transport** in skeletal muscle and fat.
- **Abnormalities in insulin signalling thus impact health** and survival itself of organisms.

100 years of insulin use

- It has been **successful 100 years after the discovery of Insulin**.
- Insulin was **discovered by Sir Frederick G Banting, Charles H Best and JJR Macleod** in 1921.
- It was the greatest medical breakthrough of the 20th century and **remains the go-to treatment for type I diabetes globally today.**

Type 1 diabetes

- Type 1 diabetes, **once known as juvenile diabetes or insulin-dependent diabetes,** is a **chronic condition in which the pancreas produces little or no insulin.**
- Insulin is a hormone needed to allow sugar (glucose) to enter cells to produce energy.
- Different factors, including genetics and some viruses, may contribute to type 1 diabetes.
- Although **type 1 diabetes usually appears during childhood or adolescence**, it **can develop in adults.**

TIMES OF INDIA

Page 2

BARIATRIC SURGERY

(Syllabus: GS Paper 3 - Sci & Tech)

Bariatric surgery to cut spate of heart deaths? Docs debate

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Mumbai: Amid increasing concerns over the current rise in sudden cardiac deaths, a medical journal has suggested that bariatric surgery — previously known as stomach-stapling surgery — could be the solution for Indians.

The editorial, written by bariatric surgeon Dr Ramen Goel in the latest edition of the 'Journal of Bariatric Surgery', the official publication of the Obesity Surgery Society of India, focuses on the epidemic of metabolic syndrome among Indians that makes them more prone to diabetes, heart attack and stroke. The argument is that bariatric surgery could reduce the severity of these diseases, thereby reducing the risk of sudden death. Metabolic syndrome isn't a disease but a clutch of conditions such as obesity, hypertension, high cholesterol, uncontrolled sugar and large waist circumference. "People undergo supra-major surgery for cancer, so why not for metabolic syndrome when there is growing evidence that it leads to premature deaths," asked Dr Goel. He said almost 50% of Indians in the 50-59 age group have a metabolic syndrome.

Endocrinologists, the super-specialists who manage metabolic syndrome with only medicines, are appalled over the idea of surgery. Endocrinologist Dr Shashank Joshi said bariatric surgery should be the last resort. "One must first try aggressive lifestyle management, use digital tools to maintain a healthy schedule," he said. If the levels of sugar, cholesterol and blood pressure still don't come under control, he recommended medical management.

Dr Tushar Bandgar, who heads the endocrinology department of KEM Hospital, Parel, said bariatric surgery cannot be a blanket treatment for metabolic syndrome. Given that millions suffer from metabolic syndrome in India, it isn't a practical solution.

Bariatric surgeons believe it's time to change this mindset among doctors and patients in the backdrop of premature heart-related deaths in recent months. The Journal of Bariatric Surgery editorial, without mentioning names, begins with the death of a 62-year-old leading businessman. "Neither education, disease awareness, and affordability nor intention to receive treatment differentiated him from over 350 million (30% of the population)," it read.

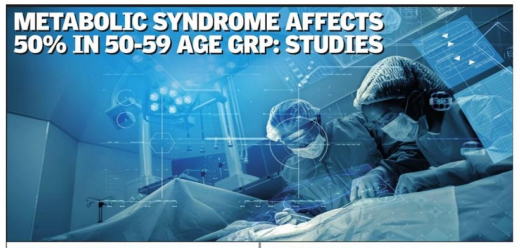
It is time patients suffering from metabolic syndrome are offered bariatric surgery as an option early enough for better glycemic control, comorbidities prevention, quality of life improvement, and reduced related deaths, it added. Dr Goel believes one of the reasons bariatric surgery is taken up by only 1% of the patients who need it is that non-surgeons, read the medical specialists who are always the first point of contact of a patient, don't recommend it.

An analysis of the referring patterns showed 71.1% of the physicians did not discuss or offer bariatric options to patients with severe metabolic syndrome. "Only after the patient(s) initiated a discussion, 80.6% of physicians supported bariatric procedures and 18.4% agreed to refer to a bariatric surgeon," said the editorial.

In India, bariatric surgery is offered to the morbidly obese with a body mass index of over 32kg/m² and comorbid conditions such as diabetes, blood pressure, sleep apnea, among others. In a non-five-star hospital, it may cost Rs 2.5 lakh-Rs 3.5 lakh and an average of 48-hour hospitalisation.

Dr Goel lists out the positive side of bariatric surgery: 96% reduction in triglyceride levels and 83% increase in good cholesterol HDL cholesterol. Severely diabetic patients don't need insulin after about a week of surgery. Some long-term studies in India have shown 49% reduced risk of heart attack in bariatric surgery group. Bariatric surgeon Dr Jaydeep Palep said, "We are losing many patients because bariatric surgery isn't offered to them at the right time."

Then why are endocrinologists against this solution? Dr Joshi said there is not enough level 1 research evidence about its benefits. There is a high risk of poor bone health leading to fractures and a link to poor mental health, he said. "There will soon be oral medicines that will overcome the need for bariatric surgery," he said. Cutting 50% calorie intake could lead to 3-4 kg weight loss in a month. Endocrinologist Dr Sheila Sheikh said for people with metabolic syndrome despite optimal medication, it's time to think about bariatric surgery.



What is metabolic syndrome?
It's a cluster of conditions that increase the risk of heart disease, stroke and diabetes

IT INCLUDES
- High blood pressure
- High blood sugar
- Excess body fat around the waist & abnormal cholesterol levels
- Large waist circumference

(Patients should have 3 of these conditions to have metabolic syndrome)

INCIDENCE
- In the US, it affects 1/3rd (one-third) adults
- Some Indian studies say **50%** of adults in the 50-59 age group have it

TREATMENT
- Aggressive lifestyle changes
- Weight loss
- Exercise
- A healthy diet
- Smoking cessation
- Medication could help
- Bariatric surgery is an option

Bariatric surgery | Weight-loss surgeries are collectively called bariatric surgery. The digestive system is surgically changed in such a way that the patient loses weight

- It is usually recommended after diet and exercise (and medication) don't work and the patient continues to have serious health problems because of their weight

As per International Diabetes Federation, bariatric surgery is an option for metabolic syndrome patients who have failed to lose weight through non-surgical methods, and have uncontrolled diabetes despite aggressive medical management:

BMI range	Eligibility
Less than 30	No
30-35	Conditional
35-40	Conditional
Over 40kg/m2	Yes

(The BMI cut-off is usually lowered by 2.5 points for Asians, including Indians)



NOW

Editorial in the latest issue of the 'Journal of Bariatric Surgery', an official publication of the Obesity Surgery Society of India, states "it is time that patients suffering from metabolic syndrome are offered bariatric surgery as an option early enough for better glycemic control, comorbidities prevention, quality of life improvement, and reduced related deaths."

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Context: Amid increasing concerns over the current rise in sudden cardiac deaths, a medical journal has suggested that bariatric surgery — previously known as stomach-stapling surgery — could be the solution for Indians.

Bariatric surgery

- **About**: Gastric bypass and other **weight-loss surgeries** - known collectively as bariatric surgery - involve making changes to our digestive system to help us lose weight.
- **Reducing obesity:** Bariatric surgery is **done to help us lose excess weight and reduce our risk of potentially life-threatening weight-related health problems**, including:
  - Heart disease and stroke
  - High blood pressure
  - Nonalcoholic fatty liver disease (NAFLD) or nonalcoholic steatohepatitis (NASH)
  - Sleep apnea
  - Type 2 diabetes
- **Types of bariatric surgery:**
  - **Roux-en-Y (roo-en-wy) gastric bypass**: It works by decreasing the amount of food you can eat at one sitting and reducing absorption of nutrients.
  - **Sleeve gastrectomy**: With sleeve gastrectomy, about 80% of the stomach is removed, leaving a long, tube-like pouch. This smaller stomach can't hold as much food. It also produces less of the appetite-regulating hormone ghrelin, which may lessen the desire to eat.
  - **Biliopancreatic diversion with duodenal switch**: This surgery both limits how much you can eat and reduces the absorption of nutrients.
- **Success Rate:** Bariatric surgery has a pretty high success rate with **about 80 percent of people** losing the desired amount of weight; and most of this weight loss happens in the first year itself.
- **India's status:** In 2020, **Insurance Regulatory and Development Authority of India (IRDAI)** has standardised health policies across all health insurers to even cover bariatric surgeries.

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