

CURRENT AFFAIRS PROGRAM

PRE-CUM-MAINS 2024

JUNE 2023- BOOKLET-2

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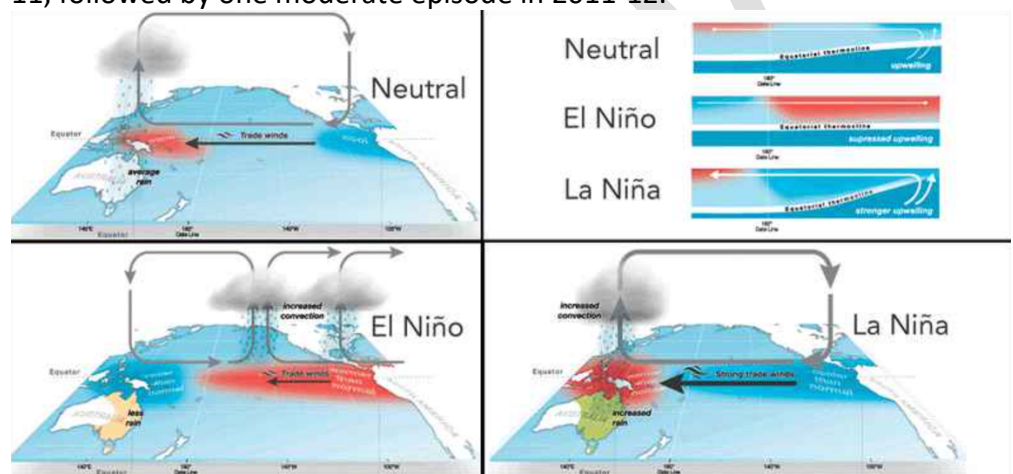
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1) GEOGRAPHY: EL-NINO AND MONSOON

- **Why in news?**
 - » According to the National Oceanic and Atmospheric Administration (NOAA), El-Nino has arrived (June 2023)
- **Example Questions**
 - » Discuss the mechanism behind occurrence of El-Nino and its counterpart La-Nina. How do they effect Monsoon season in India [15 marks 250 words]
 - » Discuss the different ways in which El-Nino situation is detected in the Pacific Ocean. How does the phenomenon of El-Nino Southern Oscillation impact Monsoon rains in India (10 marks 150 words)
- **Understanding El-Nino Southern Oscillation (ENSO)**
 - » EL-Nino Southern oscillation, also known as ENSO is a periodic fluctuation in the sea-surface temperature (El-Nino) and the air pressure of the overlying atmosphere (Southern Oscillation) across the **equatorial pacific ocean**. It is a recurring climatic pattern which has impact on temperature and precipitation across the globe.
 - » This scientific phenomenon occurs in **3 phases**: El-Nino Phase, the La Nina phase, and the Neutral Phase.
 - **The El-Nino Phase**
 - During El-Nino, the trade winds weaken or even reverse:
 - Instead of blowing from the east (South America) to West (Indonesia), they could turn into westerlies. As the wind blows from West to East, they cause the masses of warm water to move into the central and eastern equatorial pacific ocean. This leads to increased rainfall along the Western Latin America, the Caribbean and the US Gulf Coast, while **depriving SE Asia, Australia and India of rainfall**.
 - The strength of trade wind depletes and it is **not able to take warm water to the Australian Coast**.
 - This reduces the pressure difference between Eastern Pacific and Western Pacific.
 - This phase is characterized by severe drought in Indonesia, Australia (Western Pacific) and heavy rainfalls in the Eastern Pacific (i.e. the west coast of the Equatorial South America)
 - **The neutral phase (Normal Condition) of ENSO** involves sea surface temperature in the tropical pacific ocean that are closer to average.
 - The **trade winds** blow easterly across the surface near the equator.
 - **Warm water accumulates** in the Western Pacific (East Coast of Australia) creating low pressure there and high pressure in the Eastern Pacific (near the Peruvian Coast).
 - This phase is characterized by heavy rains on the East Coast of Australia and lack of rainfall on the Peruvian coast.

» **The La-Nina Phase**

- It is opposing phase to El-Nino.
- It basically refers to abnormal cooling of the central and eastern pacific ocean waters off the coast of Ecuador and Peru. Such cooling (SSTs falling 0.5 degree Celsius or more below a 30-year average for at least five successive three months period) is a result of strong trade winds blowing west along the equator (strong easterly trade winds), taking warm water from South America towards Asia. The warming of western equatorial pacific, then, leads to increased evaporation and concentrated cloud formation activity around that region, whose affect percolate to India as well. It also leads to decreased rainfall in tropical pacific.
- For e.g. the bountiful rainfall during 2019-22 has been significantly attributed to La Nina.
 - The latest La-Nina event was one of the longest ever, lasting from July-September 2020 to Dec-Feb 2022-23. And it brought copious rainfall to India.
 - This was also the case with two previous strong La Ninas in 2007-08 and 2010-11, followed by one moderate episode in 2011-12.



- **Discovery of El-Nino and La-Nina**

- » **El Nino Phenomenon** was first noticed by the scientists in the 1920s, though local population in Peru and Ecuador were aware of the periodic warming much earlier.
- » **The La Nina phenomenon**, on the other hand, was discovered only in the 1980s.

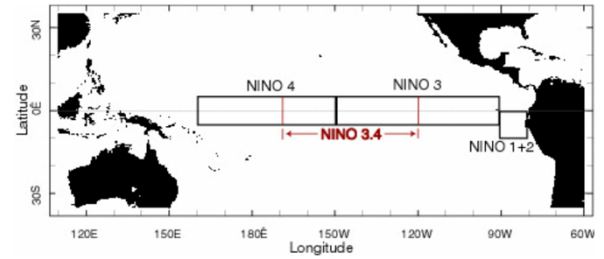
- **Reasons behind Oscillation (i.e. El-Nino and La-Nina)**

- » **Not fully understood.**
- » But the two components of ENSO - Sea Surface Temperature (SST) and Atmospheric Pressure are strongly related.
 - The **strengthening and weakening of the trade winds** is a function of changes in the pressure gradient of the atmosphere over the tropical Pacific. Ironically, the **warming of the sea surface works to decrease the atmospheric pressure** above it by transferring more heat to the atmosphere and making it more buoyant. So, in summary, the pressure gradient affects the sea surface temperatures, and the sea surface temperatures affect the pressure gradient.

- **How is El-Nino situation predicted?**

A. The Ocean Part of ENSO is measured by **Oceanic Nino Index (ONI)**.

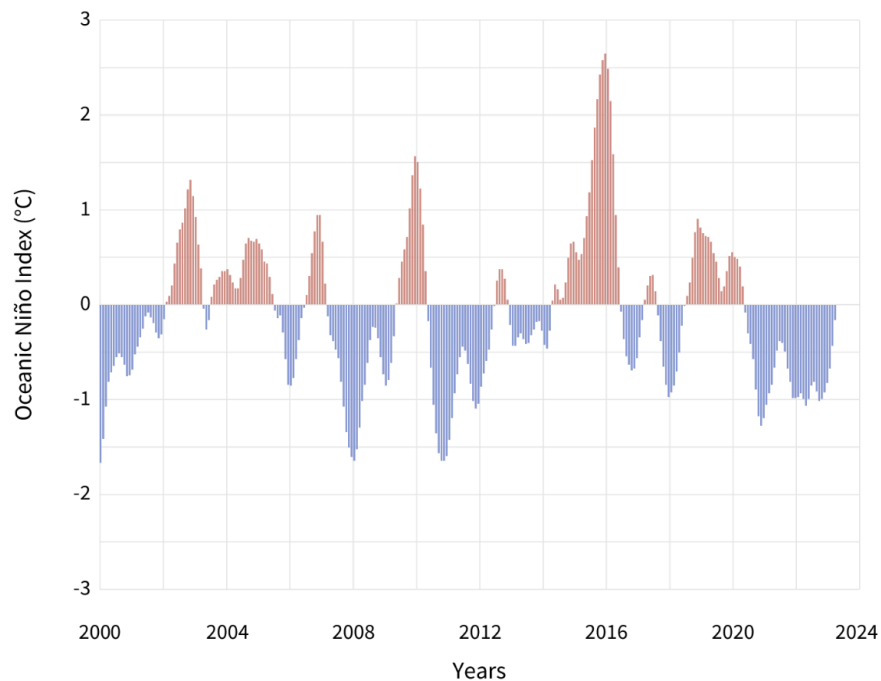
- Monitoring of ENSO primarily focuses on Sea Surface Temperature (SST) anomalies in the 4 geographical regions of the equatorial pacific.



Niño Regions

- The **Nino 3.4 region** refers to central and equatorial pacific while Nino 3 is the adjoining far-east pacific.
- During an **El-Nino**, the Nino 3.4 region gets relatively warmer (by atleast 0.5 degree Celsius)
- These are averaged over five, three-month sessions on a trot to arrive at the **Oceanic Nino Index (ONI)**.
- During a La-Nina it gets relatively cooler (by at least 0.5 degree Celsius)

OCEANIC NIÑO INDEX (ONI)



Fluctuations in sea-surface temperatures in the eastern equatorial Pacific Ocean, as represented by Oceanic Nino Index (ONI), since 2000. (Image Credit: NOAA, US)

- **Thermal expansion** of warming water in the eastern part of the basin measurably **raises sea level in these regions**, and this change in sea level can be measured by satellite sensors. **Thereby, variations in sea level are good indicators of the presence of an El-Nino.**

B. The Atmospheric part is monitored through **Southern Oscillation Index, or SOI**.

- Southern Oscillation Index (SOI) is calculated on the basis of the atmospheric pressure difference between **Tahiti (Southern Pacific Ocean)** and **Darwin (Australia)**.

- **Negative phase of SOI** represents below-normal air pressure at Tahiti and above-normal air pressure at Darwin. It corresponds to warm waters across the eastern tropical pacific typical of **El-Nino**.
- **Positive phase of SOI** coincides with cold ocean waters across the eastern tropical pacific typical of La Nina episodes.

All but one drought year in India was an El Nino year.



	Drought Intensity	El Nino Intensity
1957-58	Major	Strong
1965-66	Major	Strong
1966-67	Major	No El Nino
1972-73	Major	Strong
1976-77	Moderate	Weak
1979-80	Major	Weak
1986-87	Moderate	Moderate
1987-88	Major	Strong
1991-92	Major	Moderate
2002-03	Moderate	Weak
2004-05	Moderate	Moderate
2014-15	Moderate	Weak
2015-16	Moderate	Very Strong
2018-19	Moderate	Weak

- ENSO and Climate

- » In general, El Nino has warming effect on the planet, while La Nina tends to cool it down. The warmest years in a decade are usually the El Nino years.
 - The warmest ever year on record, 2016, was part of one of the longest and strongest El Nino episodes ever, dubbed the Godzilla El Nino.

- Accurate Prediction of El-Nino provide valuable information for managing its impacts on vulnerable regions:

- Agriculture and Food Security:** Based on the expected changes in rainfall due to El-Nino farmers can adjust their crop choices, planting schedule and irrigation options.
- Water Resource Management:** Early prediction of El-Nino enable water resource managers to optimize reservoir storage and allocations.
- Disaster Preparedness:** Steps can be taken to deal with disasters like drought or heatwaves in vulnerable regions.

- Impact of El-Nino in India

- » El-Nino has been generally known to **suppress monsoon rainfall** in India.
 - **Practically, all drought years in India since Independence** - marked by large declines in food grains production or monsoon failures - have witnessed El-Nino events of varying intensity. The sole exception was 1966-67, where drought took place without El-Nino.
 - Please note that this doesn't mean the all El-Nino years have been drought years.

- Conclusion1

- Though El-Nino and La-Nina are naturally occurring climate events, there **impacts in recent years have been exacerbated** by extreme weather events.
- With a good disaster management strategy, India needs to remain prepared for these adverse weather phenomena.

1) SOCIAL JUSTICE: HOMOSEXUALITY

- Example Questions

- » "The SC verdict in *Navtej Singh Johar v. Union of India* is a step in the right direction but will not be enough to ensure protection of fundamental rights for sexual minorities" Discuss [15 marks, 250 words]
- » "In striking down section 377, the Supreme Court has recognized the Constitution's extraordinary transformative power" Elaborate [10 marks, 150 words]

- Introduction

- » The sexual orientation characterized by romantic or sexual desire for, or sexual attraction towards member of the same sex is called Homosexuality (Homophilia).
 - The term 'gay' is used to refer to homosexual persons of either gender, although it is mostly used to refer to males.
 - In women, romantic sexual desire for other women is also called 'lesbianism'.

- Legal Provisions in India

- » **Section 377 of IPC** punished voluntary carnal intercourse against the order of nature with any man, women or animal with imprisonment for life or for a term of upto 10 years.
 - Supreme Court in its 2018 judgment in ***Navtej Singh Johar vs. Union of India*** has said that section 377 insofar as it prohibits 'any consensual sexual relationship' is unconstitutional.

- History of important court ruling on the issue of Homosexuality:

- » The issue of Section 377 being violative of fundamental rights was first raised by NGO, NAAZ Foundation, and AIDS Bedhbhav Virodha Andolan (ABVA), in the Delhi High Court in 2001. But the petitions were dismissed by the court.
- » Eight years, later in 2009, Delhi High Court in ***Naz Foundation vs. Government of NCT of Delhi (2009)*** declared that the Section (377), insofar as it criminalizes consensual sexual acts of adults in private, is violative of article 14, 15, 19 and 21 of the Constitution.
 - The court also held that "constitutional morality must outweigh the argument of public morality, even if it be the majoritarian view".
- » However, the Naz Foundation judgment was overturned by Supreme Court in 2013 in ***Suresh Kumar Koushal vs. Naz Foundation***

- Supreme Court Judgment in *Navtej Singh Johar vs Union of India* have reversed the Koushal judgment and has de-criminalized homosexuality. The key reasons given by the SC are:

- a. **Sexual orientation is natural** and people have no control over it.
 - It is controlled by neurological and biological factors. CJI said that "what nature gives is natural and the natural identity of an individual should be treated to be absolutely essential to his being".

- Research shows that sexual orientation is decided very early, possibly even before birth, and that homosexuality is found in about 10% of the population, a figure that is largely constant across the cultures.
 - Justice Chandrachud also added that 'homosexuality has been documented in almost 15,00 species.
- b. Section 377 violates LGBTs' **Right to Equality** under article 14 of the constitution and **Prohibition of Discrimination** under article 15 of the constitution and is thus irrational, arbitrary and incomprehensible.
 - c. It also violates **Right to Freedom** by punishing freedom of choice of individuals.
 - d. **Violates Right to Life**
 - Right to Privacy as part of Right to Life applies fully to LGBT community.
 - Punishment under Section 377 made the LGBT a closeted community, destroyed the identity of members and breached their dignity - All part of Right to Life.
 - Self-determination lies at the core of the concept of identity.
 - e. **Section 377 leads to harassment of LGBT community**
 - Section 377 has become a weapon in the hands of the police and majority community to harass those who have alternative sex orientation. Therefore it assumes the character of unreasonableness.
 - After the 2013 judgment, a large number of cases have come up where gays were blackmailed by acquaintance and the police is in connivance with each other.
 - f. Benefit of presumption of constitutionality of a statute can't be extended to a pre-constitutional law like 377 that was not enacted by popular legislature.
 - g. The court has ruled that consensual sex between adults is neither harmful nor contagious in society.
 - h. **Constitutional morality is more important than Social Morality** (majoritarian consensus): Social morality or what the majority of society thinks cannot be used to violate the right of even one single individual.
 - CJI Mishra had made it clear by saying "*We don't settle constitutional issues by referendum. We don't follow majoritarian morality, but follow constitutional morality*".
 - The judges have unanimously said that freedom of choice can't be subjected to majoritarian perceptions. The constitution is not just for majority, the fundamental rights are guaranteed to "any person" and "any citizen" and the sustenance of these rights doesn't require majoritarian sanction.
 - i. Judiciary plays an important role in making constitution a "living document" through dynamic and purposive interpretations.
 - The constitution must transform society for better - at the heart of **transformative constitutionalism** lies a pledge to change the Indian society so as to embrace the ideals of justice, liberty, equality and fraternity.
- The Court also added that **society owes an apology to LGBTQ community**.
 - **Other arguments Supporting Homosexuality / decriminalizing homosexuality.**
 - i. **Homosexuality is not against India's tradition and culture.**
 - Our mythology refers to the existence of homosexuality.
 - There are reference to homosexuality in Valmiki's Ramayan.

- There are many instances of men turning into women and so on in Mahabharata too.(e.g. Shikhandi)
 - Erotic paintings and sculptures in ancient temples depict homosexual impulses of at least certain sections of Indian society.
- ii. **Forced Heterosexuality Affects family life**
 - Homosexuals when forced to live life of a heterosexual have to get married and live with someone to whom they are not attracted. This ruins the life of not only the homosexual but the person with whom s/he got married.
 - iii. **Even Britishers have changed their law**
 - IPC which was drafted by Britishers criminalize homosexuality.
 - The English law was reformed in Britain by sexual offences Act, 1967, which decriminalized homosexuality and acts of sodomy between consenting adults.
 - iv. **Prevented raising awareness over the issue**
 - Homosexuality is already considered a social taboo and it being illegal further made it difficult to spread awareness about it and thus prevent harassment of homosexual people.
 - v. **International Image of a liberal, inclusive, democratic country**
 - Decriminalization of homosexuality has also enhanced India's international image of being a country of diversity, of inclusion and or equal protection for all.
- **Way Forward:** Supreme court judgement has merely decriminalized homosexuality but **has not altered civil laws** on it. Further court judgments or laws cannot remove social prejudice on their own. Discrimination still persists at workplace, in renting houses, and in the form of stigmatization which is more intense in rural areas. Therefore, we need to work towards:
- » **Bringing change in social attitude:** A change in social attitude and mentality needs to take place. This would require a lot of proactive efforts from government, civil society organizations, educational institutions etc. in the form of Information, Education and Communication Programs.
 - Homosexuals at leadership roles need to come up openly and confront the discriminatory attitude against them. This will help in changing the social perception
 - » **Ensuring Administrative Protection**
 - Government needs to ensure that homosexuals who are making their identity public are not harassed or discriminated in any way.
 - » **Legal Reforms:** Civil laws have to be brought in consonance with the SC verdict. The amendments need to provide for
 - Legalizing same sex marriage
 - Allowing same sex couples to adopt a child
 - **Ban Conversion Therapy**
 - » **Judiciary** also needs to proactively protect fundamental rights of homosexuals, at least, till the time when social attitude and legal protections are enhanced.
 - An example would be Kerala High Court's June 2022 judgment where it sanctioned a lesbian couple to live together after they were coercively separated by their parents.

- **Conclusion**

- » The Navtej Singh Johar judgment widens the ambit of individual autonomy and decisional privacy. But the verdict is only the first step towards ensuring right to life, liberty and dignity of LGBT community. We still need to **go a long way towards changing social attitude and ending all forms of discriminatory laws against the LGBT community**.

2) SAME SEX MARRIAGE

- **Why in news?**

- » The Constitutional Bench of the Supreme Court has reserved its verdict on the batch of petition seeking legal recognition of same-sex marriages after a hearing that lasted 10 days (May 2023)

- **Quote: "For the time they are a-changing": Bob Dylan**

- **Introduction:**

- » In Navtej Singh Johar case, Supreme Court decriminalized homosexuality. But, gay marriages still don't have legal recognition in India. This may change soon. In a landmark case, a group of 18 same-sex Indian couples have petitioned the country's Supreme Court to legalize same-sex marriage.

- **Petitions**

- » The petitions argued that marriage brings with it several rights, privileges, and obligations that are "bestowed and protected by law". The Delhi Commission for Protection of Child Rights (DCPCR) also advocated for recognition of marriage, filing an intervention application to assist the court on the impact of such marriages on children.

- **Respondents Opposing the petition:**

- » The Central Government, the National Commission for the Protection of Child Rights, and a body of Islamic Scholars called the Jamiat-Ulama-i-Hind, opposed the petitions.

- **Argument Supporting Same Sex Marriage**

- » The right to marry for non-heterosexual couple is implicit in Article 14 (Equality), 15 (Non-Discrimination), 16 (Equality of Opportunities in public employment), 19 (Freedom of Speech), and 21 (Right to Life). This is specially true after the SC ruling in 'Navtej Singh Johar vs. Union of India' and 'KS Puttaswamy verdict'.
- » In Navtej Singh Johar verdict, Justice Chandrachud held that **members of LGBT community are entitled, as all citizens, to a full range of constitutional rights**, including liberties protected by the Constitution.
 - Being able to marry a partner would allow homosexuals to a host of rights currently reserved for heterosexual married couples - including right to jointly adopt children, own property together or nominate one another as a surrogate decision maker in a medical emergency, right to inheritance, maintenance and tax benefits.
- » Since Navtej Singh Johar Judgment, several high court verdicts have ruled in favor of same sex couples having the right to live together.
 - In **Madhu Bala vs State of Uttarakhand (2020)**, the high court of Uttarakhand held that right of a same sex couple to live together is a constitutional and human right.

- In **Vanitaben Damjibhai Solanki vs State of Gujarat (2020)**, the Gujarat High Court ordered police protection for two women police constables in a relationship.
 - In **S Sushma v Commissioner of Police (2021)**, the court protects the couple in relationship and makes sure that both sets of parents are taken along in this journey.
- » **Supreme Court's** recognition of same sex marriage will contribute to society's acceptance towards homosexuality.
- » A study titled '*The Anticipated Impact of LGBTQIA+ Marriage Equality Legislation on Indian Society and Mental Health*' among Indians has found that legalization of such unions will have a "positive impact on mental health of LGBTQIA+ individuals".
- » There are 25 countries where same sex marriage is legalized. These countries have seen no harm to their culture and no deterioration of the legitimacy of traditional marriage in any place where same sex marriage is lawful.
- **How the law can be changed?**
 - » Personal law can be interpreted by court to legalize same sex marriages.
 - » Government can add a provision defining LGBT culture in personal laws and allow for same sex marriages.
 - » Special Marriage Act, 1954 can be amended to bring in provisions for same sex marriage.
- **Arguments of people opposing same sex marriage:**
 - » They argue that same sex marriage is afront to Indian customs and is an urban elitist concept.
 - » The government is also arguing that if Supreme court legalizes same sex marriage, it would mean a virtual judicial rewriting of an entire branch of law and court must refrain from passing such omnibus orders. Proper authority for this should be the legislature.
 - » Some don't consider it as normal because they can't replicate babies.
- **Conclusion:**
 - » The LGBTQIA+ community is gazing upon the Supreme Court with a profound sense of optimism, anticipating the bestowal of their long-awaited constitutional rights, which have been withheld from them throughout the ages.

1) SYLLABUS: ISSUES RELATED TO DIRECT AND INDIRECT FARM SUBSIDIES AND MINIMUM SUPPORT PRICE (MSP)

A) GOVERNMENT'S SUBSIDY EXPENDITURE

- For FY23, government has spent Rs 5,32,446 crore on subsidy.
 - This includes Food Subsidy (Rs 2.8 lakh crores), Fertilizer Subsidy (Rs 2.1 lakh crores), and Petroleum subsidy (Rs 30,756 crore).
- It was the 2nd highest ever after the 7.06 lakh crores of FY 20-21.
- **But**, in 2020-21, the spike in subsidy was on account of the finance ministry making a one-time provision to clear all dues to the FCI and fertilizer companies.
 - The centre in previous years was not providing fully for subsidies, arising from these entities selling grain and fertilizers at below cost to PDS consumers and farmers respectively.
- **Key Reasons for Rise in Subsidy Burden:**
 - **Covid-19 Pandemic:** The lockdown led to launch of various initiatives like Pradhan Mantri Garib Kalyan Anna Yojana.
 - **Russia-Ukraine War:**
 - » This led to surge in global prices prices of petroleum and fertilizers.
 - Government had to keep farmers and consumer insulated from this price rise which led to rise in subsidy burden.

B) MSP

- **Why in news?**
 - » Government has announced the Minimum Support Price (MSP) for this year's summer (Kharif) season crops, hiking the prices between 5-10% from last season, to ensure remunerative prices to growers for their produce and to encourage crop diversification (June 2023)
 - **Reactions:**
 - A section of farmer representatives have expressed unhappiness over what they term as a 'meagre' hike in MSP, defeating the government's intent of securing a "remunerative price".
 - Agriculture domain experts believe that an increase in MSP may give a slight respite to growers, but argue that in the absence of any dependable or assured market mechanism of procurement-purchase for crop on the MSP in most parts of the country, Crop Diversification will not be encouraged.
- **Example Questions**
 - i. What do you mean by Minimum Support Price (MSP)? How will MSP rescue farmers from the low income trap? [Mains 2018, 10 marks, 150 words]
- **Introduction**

- » **What is MSP:** It is the minimum price set by the Government at which farmers can expect to sell their produce for the season. When market prices fall below the announced MSPs, procurement agencies step in to procure the crop and 'support' the prices.
- » **Beginning:** The Minimum Support Prices (MSP) were announced by the Government of India for the first time in **1966-67 for Wheat** in the wake of the Green Revolution and extended harvest, to save the farmers from depleting profits.

Prelims	How is MSP decided and Who takes final decision. <ul style="list-style-type: none"> ▪ The <u>Cabinet Committee of Economic Affairs (CCEA)</u> announces MSP for various crops at the beginning of each sowing season based on the <u>recommendations of the Commission for Agricultural Costs and Prices (CACP)</u>. ▪ The CACP takes into account <u>demand and supply, the cost of production (A2 + FL method)</u> and price trends in the market, inter-crop parity, implication for MSP on consumers, <u>a minimum of 50% as the margin over cost of production</u>; etc. ▪ The CACP calculates <u>three types of costs — A2, A2+FL and C2</u> — for each mandated crop for different states. The lowest of these costs is A2, which is the <u>actual paid-out cost incurred by a farmer</u>. Next is A2+FL, the actual paid-out cost plus imputed value of family labour. The highest of the three costs is C2, defined as 'Comprehensive Cost including Rental Value of Own Land (net of land revenue and interest on value of own fixed capital assets (excluding land))
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- » MSP is announced for 22 mandated crops and FRP is announced for sugarcane (**total 23 crops**)

Prelims	Crops Covered under MSP: <ul style="list-style-type: none"> - MSP is announced for 22 mandated crops and FRP for Sugarcane. (Total 23 crops) <ul style="list-style-type: none"> ▪ Mandated Crops are: 14 crops for Kharif season, 6 Rabi crops (except Toria) and 2 cash crops (Copra and Raw Jute). ▪ In addition MSP for Toria and De husked coconut are fixed on the basis of MSP for rapeseed/mustard and Copra. - Note: Coffee, tea etc are not covered under MSP. - 7 Cereals, 8 oilseeds, 5 pulses, 5 cash crops - Copra, Raw cotton, Raw Jute, Virginia Flu cured (VFC) tobacco, Sugarcane. - Note: For Sugarcane <u>Fair and Remunerative Prices (FRP)</u> is announced that has to be paid by sugar mill owners.
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Kharif Crops	Rabi Crops
1. Paddy	15. Wheat
2. Jowar	16. Barley
3. Bajra	17. Gram
4. Maize	18. Masur/lentil

5. Ragi	19. Rapeseed/mustard
6. Arhar (Tur)	20. Safflower
7. Moong	21. Toria (an oilseed similar to rapeseed)
8. Urad	Other Crops
9. Cotton	22. Copra / Dehusked Cotton
10. Groundnut	23. VFC Tobacco
11. Sunflower seed	24. Raw Jute
12. Soyabean black	25. Sugarcane(FRP)
13. Sesamum	
14. Nigerseed	

- **Need of MSP/ Rationale Behind MSP**
 - » Protecting farmers from price volatility
 - » Incentivizing farmers to grow crops in short supply
 - » MSP also ensures easy procurement for food security schemes
- From FY19 the MSP has been **pegged at more than 50% of cost of production for most of the Kharif and Rabi crops**. This is another step towards ensuring **income inclusiveness**.
 - » Accordingly, the Government has been increasing the MSP for all 22 Kharif, Rabi and Commercial crops with a margin of at least 50% over the all-India weighted average cost of production since the agricultural year 2018-19.
- **Various Mechanisms under MSP to procure crops and ensure remunerative prices for farmers (Before PM-AASHA)**
 1. **For wheat and paddy -> Open Ended Procurement by FCI**
 2. **Coarse Grains -> Purchased by state government** with permission of central government, **upto the extent it is required** in their Target Public Distribution System (TPDS).
 3. **Price Support Scheme (PSS) - for oil seeds, pulses and cotton** - at the request of concerned states
 4. **Market Intervention Scheme (MIS)** for perishable horticulture commodities - at the request of states - when there is excess supply or low prices.
- **Some shortcomings in MSP Procurement Program**
 - » **Procurement is limited to few crops, few geographies and few farmers -> only wheat and rice under open procurement -> Punjab, Haryana, Coastal Andhra benefitted a lot -> mostly big farmer benefitted**
 - » There has been delays in establishment of procurement centre.
 - » Lack of awareness about MSP among large section of farmers. This leads to they getting exploited at the hands of commission agent.

- » **Inadequate MSP** (MSP calculation is not based on A2 + FL + C2 which was recommended by MS Swaminathan committee). It uses A2 + FL method.
- **Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA):**
 - » The scheme is aimed at increasing the MSP procurement of pulses, oilseeds, COPRA etc. This is expected to ensure remunerative price to farmers.
 - » **Three components of PM AASHA - Price Support Scheme; Price Deficiency and Payment Scheme; and Private Procurement & Stockist Scheme**
 - Note: For Oilseeds, the states will be allowed to choose between the PSS or two other schemes.
 - » **Note: AASHA is complementing (not replacing) complementing other schemes**
 - Other existing schemes of Department of Food and Public Distribution (DFPD) for procurement of paddy, wheat and nutri-cereals/coarse grains and of Ministry of Textile for Cotton and Jute will be continued for providing MSP to farmers to these crops.
 - » **What was expected out of PM-AASHA:**
 - Better remuneration for farmers; reduced storage and procurement requirement for government; increased private participation -> more investment in storage etc; improved food security
- **But, PM-AASHA has also not been able to increase MSP procurement a lot due to following reasons:**
 - **Budgetary support for PM-AASHA** has been too minimal (around Rs 15,000 crore in the first year)
 - **A number of factors preventing PM-AASHA to be inclusive:**
 - » **Agri-Marketing reforms** are incomplete: Poorly functioning APMCs with cartelization, lack of transparency which causes price distortion.
 - The three farm laws which were expected to reform agri-marketing in India had to be withdrawn due to farmers' protest.
 - » **Poor infrastructure:** This has led to farmers remaining out of MSP regime, remaining out of MSP regime.
 - To increase procurement of pulses, oilseeds etc., a large infrastructure improvement is required at state level. This infrastructure is absent or very poor at state level.
 - » Further, **ineffective supply chain management**, has rendered the whole scheme trivial.
 - For e.g. NAFED has a stock of 4 million tonnes of pulse and oilseeds, but their distribution policy is non-existent.
 - **State Financial condition** may not be strong enough for the program.
- **Other Criticism of MSP mechanism in general**
 - **MSPs causes market distortion** -> this negative impacts free market economy and investment in the sector.
 - **Cropping pattern** is affected and farmers tend to grow high MSP crops rather than the most suitable crop for the region.
 - **Excess fertilizer and water guzzling crops** makes agriculture unsustainable.
 - **Higher inflation due to higher MSP pressure** also has to be considered while announcing MSP for the food crops.
 - **Cost Plus Pricing** is risky as it ignores the demand side, i.e. demand-supply, domestic and international price trends, terms of trade, inter-crop price parity etc.

- **Leads to less focus on non-price factors** like technology, inputs, services, institutions and infrastructure
 - High fiscal burden on government
- **Bigger stock exceeds the stock holding norms of FCI**
- **WTO' AOA issues** (discussed with WTO issues separately)

- **Way forward**

- There is a need of **correction in the way MSP is provided**.
 - Land rentals and capital depreciation needs to be kept in mind.
- In order for our **procurement policy to be really inclusive**, government will need to focus upon improving the procurement infrastructure in rural, remote and backward areas. There is also a need to fast track the reform process of APMCs to end cartelization and promote transparency.
- Steps towards **wooing private investments** needs to be enhanced. Crop mandis can ensure more competition and thus better output for farmers.
- Further, FCI and NAFED will have to **strengthen the supply chain mechanism** to focus more on efficient distribution of the procured food items.
- At the same time we should remember that **procurement schemes can only be a temporary solution**. For lasting impact we need other structural changes. Farming has to be made profitable by reducing production cost and improving returns.

In summary, there has to be a **Comprehensive 'Production, process and market' approach** through higher investments on market infrastructure, processing, value addition and agri-business and diversification along with farmer's welfare initiative.

2) FERTILIZER SUBSIDY

- **Why in news?**

- » CACP recommends Centre to bring urea under NBS regime to check overuse (June 2023)

- **Introduction**

- » A fertilizer is any organic or inorganic, natural or synthetic material added to soil to supply one or more plant nutrients essentially to the growth of plants.
- » These fertilizers provide **six macro nutrients** and **8 micro-nutrients** to plants for well balanced growth:
 - 6 macronutrients:** nitrogen(N), phosphorus(P), potassium(K), Calcium (Ca), magnesium (Mg), and sulphur(S). They are consumed by plants in larger quantities and make the bulk of fertilizers.
 - 8 Micronutrients:** Boron (B), Chlorine (Cl), Copper (Cu), iron (Fe), manganese (Mn), Molybdenum(Mo), Zinc (Zn) and Nickel (Ni).
- » Fertilizer are an important input for agriculture and have played a major role in increasing farm productivity since green revolution.
- » But Indian farmers have often faced difficulties due to shortage of fertilizers in past. To ensure easy availability of fertilizers, government has **various subsidy schemes**. But not all fertilizers are sold at a controlled price.

- » In India, Urea is the only controlled fertilizer, which is sold at **statutory notified uniform prize**. The Phosphatic and Potash fertilizers are under a decontrolled regime and are sold at indicative maximum retail prices (MRPs).

A) NUTRIENT BASED SUBSIDY (NBS) SCHEME, 2010

- **Key provisions of NBS**
 - **Fixed subsidy based on nutrient:**
 - » Government provides a fixed amount of subsidy based on the nutrient content (both macro and micro (boron, zinc etc.)) (per kg) of fertilizers (unlike the earlier product-based subsidy scheme) to the fertilizer companies.
 - » For e.g. for RABI 2022 (from 01/10/2022 to 31/03/2023) - Subsidy rate was decided as follows:
 - **N** (Rs 98.02/kg) **P** (Rs 66.93/Kg), **K** (**Rs 23.65/Kg**) and **S** (Rs 6.12/kg)
 - **MRP to be fixed by fertilizer companies** on the basis of demand and supply but after incorporating the subsidy element.
 - Rate of subsidy is determined by various factors such as international prices, exchange rate, inventory levels etc.
 - The NBS scheme currently covers 21 grades of different phosphatic and potassic (P&K) fertilizers including DAP (diammonium phosphate), MOP (Murate of Potash) and other NPK complex fertilizers.
 - **UREA has been kept outside the coverage of the NBS scheme.**
- **Key Aim** -> Reduced Subsidy Burden; New specialized variety of fertilizers; Balanced application; Improved farm output; promote indigenous fertilizer industry.
- **Hasn't been as affective** -> Government's subsidy burden still very high -> UREA kept out of NBS, so farmers shifted to UREA -> Balanced Nutrient Goal also missed.
- **Subsidy burden** has also kept on going up.

B) UREA BASED SUBSIDY

- **Introduction:**
 - To ensure affordable access to fertilizers to farmers, UREA is made available at statutorily **controlled price**, which at present is Rs **5378 per MT** (exclusive of Central/State Tax and other charges towards neem coating).
 - The difference between the delivered cost of fertilizers at farm gate and MRP payable by farmers is **given as subsidy to the fertilizer manufacturer/importer by GoI.**
- **Issue of Diversion**
 - Being super-subsidized, urea is always **prone to diversion for non-agricultural use** - as a binder by plywood/particle board makers, cheap protein source for animal feed manufacturers or adulterant by milk vendors - apart from being smuggled to Nepal and Bangladesh.
- From 2018, the government announced the **implementation of DBT** for disbursement of fertilizer subsidy.

- Now the subsidy transfer only happens after the actual sales to farmers by retailers. Retailers have a point of sale (PoS) machine linked to e-Urvarak DBT Portal. Fertilizer buyers (farmers) are required to furnish Aadhar or KCC number.
- **Advantages**
 - **Prevents diversion and plug the leakages** (because Aadhar is used)
 - Timely payment of Urea subsidy to urea manufacturing companies.
 - Adequate availability of UREA to farmers at adequate prices.
- **But the diversion still continues at the retail level.**
- **Various steps being proposed to deal with this problem:**
 - **Plans for Direct Cash Transfer to Farmers:**
 - Ceiling might be put on farmers based on the size of their land.
 - The subsidy may be directly transferred to farmer's e-wallet which could be made available along with farmer's Rupay Kisan Card.
 - In a **study by NITI Aayog in 2019**, farmers prefer DBT to fertilizer companies, rather than Direct Cash Transfer to Farmers as they are worried that buying fertilizers at market prize would be an extra burden.
 - Government is trying to resolve this concern by developing a DCT mechanism where fertilizer subsidy will be paid in advance.
- **Plans to cap the total number of subsidized fertilizer bags that any person can buy during an entire Kharif and Rabi Cropping season:**
 - This is expected to end even retail-level diversion and purchases by large buyers masquerading as farmers.

C) IMPACT OF FERTILIZER SUBSIDY POLICIES IN INDIA

- **Positive Impact:** Fertilizer subsidy policies have had positive impact in terms of **increasing fertilizer consumption** and hence leading to an increase in overall Agri-production.
- **But it has failed in the goals of** increasing domestic production (and has thus increased import dependency) and promoting balanced use of nutrients by farmers. It has also led to diversion of UREA for other industries and exports to neighboring countries.
- **Why domestic industry couldn't be promoted:**
 - **Lack of raw material for potassic and phosphatic fertilizers:** India completely lacks any commercially exploitable source of Potash and the entire demand for MOP is met through import. In the Phosphatic sector (for DAP etc.), there is limited availability of raw material like Sulphur and rock phosphates and hence, a bulk of raw material is imported. Even the **Urea sector** is dependent on imported fuel sources like crude oil and now, even gas.
 - **Low investment in fertilizer sector** over the years.
 - **Inefficient Fertilizer manufacturer companies** - Since they get subsidy based on the cost of production (rather than fixed subsidy for all manufacturers on the basis of per unit production).
- **Increased dependency on Urea has been harmful**
 - In India, the ideal ratio of NPK fertilizers use is considered as **4:2:1**. However, in most regions it is skewed against the ratio with a propensity to use larger quantities of N (urea) as it is cheaper.

- It has caused serious problems:
 - i. Widespread deficiency of secondary and micro-nutrients.
 - Among these, the deficiency of zinc has to be specifically mentioned as zinc deficiency in food causes problems like stunting.
 - ii. **Fertilizer response and efficiency** has continuously declined over decades mainly due to imbalanced use of nutrients.
 - iii. Environmental damages
 - Part of over-used Nitrogen is lost as NH_3 , N_2 , NO_x gases which adversely affect environment.
 - Part of Nitrogen leaches down as NO_3 and contaminates the ground water resources. It has been found to cause methemoglobinemia or the Blue baby syndrome.
 - iv. **Limits diversification of crops**
 - Specialized fruits, vegetables require special non-UREA fertilizers, which are not easily available at affordable prices. This prevents diversification of agriculture.
- **Diversion of UREA** -> smuggling to neighboring Nepal, Diversion to Industries
- **Huge Fiscal Burden on Government**
 - A burden of more than Rs 2 Lakh crore only because of fertilizer subsidy.

D) SOME STEPS THAT HAVE BEEN TAKEN TO MAKE UREA SECTOR EFFICIENT.

- i. **GAS Price Pooling**
 - Earlier, different urea plants got gas at different prices, so their cost of production differed.
 - Therefore, in 2015 government has approved a major policy intervention. Under this policy the **domestic gas is pooled with imported LNG gas** to provide uniform natural gas to all the Urea manufacturing plants for the production of Urea.
 - **Cost of UREA at pooled price will be less** than the price of imported urea. This will help in increasing the production. This will augment indigenous production capacity.
- ii. **Neem Coating of UREA**
 - Reduces rate of dissolution in soil -> slowly absorbed by plants
 - Reduces diversion to industry
 - Neem has other advantages for crops -> insecticidal and pesticidal properties
 - UREA can't be used in synthetic milk now
- iii. **New Urea Policy** to increase the productivity, efficiency and indigenous production
- iv. **Introduction of 45 kg Urea Bag** (from earlier 50 kg) -> aimed at cutting demand
- vi. **Nano Urea**
 - Government has notified the specification of Nano nitrogen under Fertilizer Control Order, 1985.
- vii. **One Nation One Fertilizer Scheme**

- It aims to ensure timely supply of fertilizers as well as eliminate the dilemma of farmers in choosing one of the many brands available in the market.
- viii. **Pradhan Mantri Krishi Samridhhi Kendra (PMKSK)**
 - It has been decided to convert the existing village/block/sub-district/taluk and district level fertilizer retail shop into **Model Fertilizer Retail Shops**. These shops will act as **"One Stop Shop"** for all the agriculture related inputs and services.
- ix. **PM PRANAM (Proposed)**
 - Aimed at reducing the use of chemical fertilizers and thus reducing the subsidy burden.

E) STEPS THAT FURTHER NEEDS TO BE TAKEN/WAY FORWARD

- i. **Work towards self-reliance and reducing dependency on imports.**
 - **Tie-up with gulf countries to set up plants**
 - Gas prices for UREA plants in India is 3 times higher than in gulf countries. So we should set up joint ventures in countries where these prices are low.
 - ii. **Correcting Price Signals and Decontrolling the Fertilizer sector -> More investment and more competition.**
 - The Commission on Agriculture costs and Prices (CACP) has recommended the centre to bring urea under NBS regime.
 - iii. **Direct Cash Transfer to Farmers and ensure progressive subsidies.**
 - iv. **Improve fertilizer efficiency -> Expand the soil health testing facilities and Issue of soil health cards**
 - v. **Digitization of land records**
 - The process of was launched in 2008 but has not gathered momentum.
 - Without setting right the land records, it will be impossible to transfer the subsidy to beneficiaries or to issue soil health cards.
 - vi. **Ensuring timely reach of subsidy to farmers**
 - Last, but not the least, in the drive for increased efficiency and productivity, we should not forget the question of equity and inclusiveness, for 85% of our operational holdings belong to small and marginal farmers and smaller farmers tend to use fertilizers more intensely.
 - vii. **Develop Alternative sources of nutrition for agriculture** - Shift towards non-chemical form of fertilizers -> scope to use large biomass of plants which is wasted today;
- **Conclusion:**
- These steps will go a long way in enhancing the productivity of agriculture, mitigating climate change, providing an alternative to chemical fertilizers and balancing the fiscal impact of fertilizer subsidy on the Union Budgets in the years to come.

3) NANO-FERTILIZERS

- **Why in news?**
 - Union Home Minister Amit Shah launched IFFCO's liquid nano Di-Ammonia Phosphate (DAP) (April 2023)

- Nano Urea fast-tracked for approval despite incomplete trials (Sep 2022)
- **Question:**
 - “The Nano-Fertilizer technology can change the contours of not just Indian agriculture but also the economy” Critically analyze [10 marks, 150 words]
- **Introduction:**
 - India has become the first country in the world to have developed and roll out nano-fertilizers.
 - » So far, it has launched nano-versions of two fertilizers – Urea and Diammonium Phosphate (DAMP).
 - » While nano-Urea has been made available to farmers since late 2021, nano-DAP was launched in April 2023.
 - The Indian Farmers Fertilizer Cooperative Limited (IFFCO), which had developed the variants using propriety technology, claims that Nano-UREA and Nano-DAP have several advantages over their conventional granular counterparts.
- **More Details:**
 - Both Nano-Urea and Nano-DAP come in liquid form.
 - IFFCO claims that a 500 ml bottle of nano-urea can replace at least a 45 kg bag of granular urea and a bottle of 500 ml nano-DAP can replace a 500 kg bag of granular DAP.
- **Advantages:** The Parliamentary Standing Committee on Chemicals and Fertilizers (2022-23), headed by Shashi Tharoor have enumerated several advantages of nano-fertilizers in its March 2023 report:
 - **Soil Health:** Nano-UREA can address the imbalanced and excessive use of conventional urea in the country, which accounts for around 82% of nitrogenous fertilizers applied to majority of the crops.
 - It costs lesser than subsidized conventional fertilizer thus **reducing the cost for farmers**.
 - They also result in **better productivity and higher income** for farmers.
 - » The PSC report notes that it has average 8% higher crop yield.
 - Experts also believe that these nano-fertilizers will lead to **reduced import dependency of fertilizers** and save forex reserves.
 - It will also **contribute to reduced fiscal burden** of government because of reduced fertilizer subsidy cost.
- **Limitations:**
 - **Doubts about Yield gain:** DTE has reported interviews of several farmers who had to resort back to traditional fertilizers after, nano-fertilizers didn't give good results.
 - **Labour cost for spraying fertilizer** is increasing the overall input cost for farmers.
 - **Complaints** about farmers being **forced to buy Nano-Urea**.
 - **Issue of Evaluation/Trial:** ICAR has given results of field trial based on a year (two seasons) of experiments in its affiliated labs. This was an exception as ICAR normally tests a new fertilizer for 2 years (or three seasons) before going ahead to a new fertilizer.
- **Conclusions:** Nanotechnology could play a crucial role in promoting sustainable agriculture in India and nano-urea is an example of that. At the same time, it should be ensured that any new technology-based product is properly evaluated in its efficacy, environmental impact and economic impact on farmers.

4. PRELIMS FACTS

1) PLACES IN NEWS: SVALBARD

SVALBARD (also known as Spitsbergen)

- It is a Norwegian archipelago in the Arctic Ocean. North of mainland Europe, it is about midway between the northern coast of Norway and the North Pole. The islands of the group range from 74 degree to 81-degree N.
- The largest island is Spitsbergen.
- Flora and Fauna:** The flora has adapted to take advantage of the long period of midnight sun to compensate polar nights. Many seabirds use Svalbard as a breeding ground, and it is home to polar bears, reindeer, the Arctic fox.
- Svalbard Global Seed Vault** is a seedbank to store seeds from as many of the world's crop varieties and their botanical wild relatives as possible. It is a cooperation between the government of Norway and the Global Crop Diversity Trust, the vault is cut into rock near Longyearbyen, keeping it at a natural – 6 degree C and refrigerating the seeds to -18 degree C. It is also referred as Earth's dooms day vault.
- IndARC:** It is India's first underwater moored observatory in the Arctic region. It was deployed in 2014 at Kongsfjorden fjord, Svalbard, Norway. It is focused on studying arctic climate



2) S&T: SPACE

- Why in news?**
 - Norwegian Ambassador Han Jacob Frydenlund's visit to ISRO's headquarters (June 2023)
- In June 2023, Norwegian Ambassador Frydenlund, accompanied by officials of Kongsberg Satellite service (KSAT), called on ISRO Chairman S. Somanath in Bengaluru, ISRO. The meeting concluded with a mutual agreement on the importance of maintaining a continued partnership and fostering increased engagements between India and Norway.

- It also offered an occasion to recall the '**Svalbard mission**' of 1997.

A) SVALBARD MISSION OF 1997

- On Nov 20, 1997, a Rohini RH-300 Mk-II sounding rocket rose to the skies from Svalbard, Norway, operationalizing a new rocket launching range.
- ISRO bagged the Norway mission after its commercial arm Antrix Corporation won a global tender floated by the Norwegian space agency.
- The RH-300 MK-II was given a new name by the NSC (Norwegian Space Centre): **Isbjorn-1**, which translates literally as 'Polar Bear-1'.