Prelim Bits 31-12-2021 | UPSC Daily Current Affairs

Molnupiravir

The Central Drugs Standard Control Organisation (CDSCO) cleared the first anti-viral Covid-19 pill: Molnupiravir.

- Developed initially to treat influenza, Molnupiravir (MK-4482, EIDD-2801) is repurposed as an anti-viral candidate to treat Covid-19 patients.
- It is an oral form of potent ribonucleoside analogues that works by introducing errors into the SARS-CoV-2 virus' genetic code, which prevents the virus from further replicating.
- This prevention of replication reduces the severity of the disease.
- **In India**, the drug has been cleared for the treatment of adult patients with Covid-19 and who have a high risk of progression of the disease.
- [Risk factors include Obesity, Older age (>60 years), Diabetes mellitus, or Heart disease.]

Analogues

- Nucleoside and nucleotide analogues are the two types of analogues.
- They can be used in therapeutic drugs, include a range of antiviral products used to **prevent viral replication** in infected cells.
- **Nucleoside analogues** are nucleosides which contain a nucleic acid analogue and a sugar.
- This includes any group of antiviral drugs that inhibit the viral enzyme reverse transcriptase and are used in the treatment of HIV infection.
- Nucleoside analog inhibitors compete with nucleotide substrate to bind to the active site of polymerase.
- Once they are incorporated into the elongation chain of nucleic acid, chain termination results.
- Similar to nucleoside analogues, **Nucleotide analogues** are nucleotides which contain a nucleic acid analogue, a sugar, and a phosphate groups with one to three phosphates.

Reference

1. https://indianexpress.com/article/explained/molnupiravir-covid-19-india-7694303/
2. https://www.merck.com/news/merck-and-ridgebacks-investigational-oral-antiviral-molnupiravir-reduced-the-risk-of-hospitalization-or-death-by-approximately-50-percent-compared-to-placebo-for-patients-with-mild-or-moderat/
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Digital Currency vs Crypto Currency

The Centre plans to ban cryptocurrencies but introduce an official, digital currency.

While all cryptocurrencies could be considered digital currencies, not all digital

currencies need to be official sovereign backed currencies.

Difference	Digital Currency	Virtual Currency
Definition	Digital currency is a digital format of fiat money.	Cryptocurrencies are built on the blockchain. Their creation and usage is maintained through a distributed ledger. They transmit value across a decentralised network of users.
Issuing Authority	Official digital currencies are issued by the central banks of a country.	Crypto-currency is not under any single issuing authority.
Centralisation	Centralised	De-centralised
Encryption & underlying tech	There is little encryption that happens in digital currency and no special cybersecurity measures.	Blockchain is the underlying tech used.
Storage	Anyone with a regular online bank account can store and use digital currencies. This is a form of e-cash.	As blockchain is used, they are stored in 'wallets' with a high degree of cyber security.
Stability & fluctuation	As fiat digital currencies are largely stable in value, they provide more stability than crypto-currencies does.	As Crypto-currencies can wildly swing in value, they are known for their high degree of volatility and consequent risk.
Transparency	Less transparent As the issuing authority decides how much information to be shared about the digital currency, its receiver or sender will receive information only related to that transaction.	Highly transparent The entire history of transactions between two parties can be seen as it is done on blockchain and cannot be changed.
Cost of transaction	The issuing authority or the centralised controller can levy transaction fees.	Blockchain technology used in cryptocurrencies minimises such expenses as there is no commission for third parties.
Legal framework	In most countries, there is some kind of legal framework and protection.	Except for El Salvador, which is using Bitcoin as legal tender, cryptos are still in unchartered territory with their legal status not clearly defined.

Related Links

1. How Crypto Currencies Work
2. The Taproot
3. e-RUPI
4. Bitcoin Hardware Wallet
5. Report on Cryptocurrency Ownership & Cryptocurrency Adoption Index 2021
6. Cryptocurrency Fan Tokens
7. Non-Fungible Tokens
8. Britcoin
9. Dogecoin

Reference

1. https://www.thehindubusinessline.com/blexplainer/explainer-digital-currency-vs-cryptos-how-are-they-different/article3766885ece
2. https://timesofindia.indiatimes.com/business/india-business/digital-currency-vs-cryptocurrency-what-the-row-is-all-about/articleshow/87907344.cms

La Nina & Monsoon

- La Niña ('little girl' in Spanish) and El Niño ('little boy') refer to the see-sawing of surface temperatures of the Pacific Ocean.
- El Nino and La Nina are the opposite phases of the El Niño-Southern Oscillation (ENSO) cycle of the Pacific Ocean.
- It involves changes in the sea-surface temperatures (SSTs) in the waters of the Eastern and Central Pacific Ocean.
- It is a recurring phenomenon and the change in temperature is accompanied by changes in the patterns of upper and lower level winds, sea level pressure, and tropical rainfall across the Pacific Basin.

La Nina	**El Niño**
During a La Nina, SSTs are elevated beyond 27.5 degrees Celsius over the West Pacific.	During a El Niño, SSTs are elevated over the East Pacific.
When SSTs go up, it supports evaporation and cloud-building, triggering storms and heavy rain.	When the SSTs cool, the exact reverse happens. It suppresses evaporation, cloud-building, storm formation and rain.
Normally, a La Niña subdues the concurrent North-East monsoon in India.	El Niño has been associated with drought years in India, with exceptions.

Impact of La Niña on the North-East monsoon

- While a La Niña is known to enhance rainfall associated with the South-West monsoon, again with exceptions, it has correlated negatively with the North-East monsoon. This is due to two reasons,
    1. Low-pressure areas, depressions or cyclones form relatively north to their normal position during a La Nina year.
    2. Instead of moving West-North-West towards the East Coast of India, they tend to recurve and move away, robbing the South Peninsula of its share of rainfall.

La Niña this year

- Normally, La Niña subdues the concurrent North-East monsoon.
- But, this year, La Nina is contributing to the excessive NE monsoon. This is due to the rain-driving low-pressure areas/depressions in the Bay of Bengal/Arabian Sea so far.
- The Indian Ocean Dipole (IOD) or Indian Nino had gone from a slightly negative mode into neutral even as the NE monsoon was establishing.
- [IOD involves a periodic oscillation of SST between positive, negative and neutral.]
- Negative IOD could have wrecked the NE monsoon irrespective of the Pacific mode, since warming of the East Indian Ocean could divert rain systems away from the Bay.
- Weather systems seek out the nearest warm water pool to thrive and prosper.
- Given the neutral IOD phase, the flows from upstream South China Sea/ West Pacific may have been directed into the Bay, beefing up the NE monsoon.
- Monitoring the SSTs of the 'Nino' regions of the Equatorial Pacific shows that these phenomena may recur every 3 to 5 years.
- Each cycle lasts 9 months to a year or perhaps even more, manifesting in floods/drought

across geographies.

Reference

1. https://www.thehindubusinessline.com/blexplainer/explainer-la-nina-and-copious-north-east-monsoon/article37862083.ece
2. https://indianexpress.com/article/what-is/la-nina-el-nino-pacific-ocean-monsoon-india-rains-imd-6586704/

24th Financial Stability Report

The RBI has released the 24th Financial Stability Report (FSR).

- **FSR** - The FSR is published twice each year (biannual) by the RBI.
- It reflects the collective assessment of the sub-committee of the financial stability and development council (FSDC) on risks to financial stability and the resilience of the financial system.
- [FSDC is an umbrella group of regulators which gives an overview of the health of India's financial system.]
- The FSR primarily looks at questions like the following:
    1. Do Indian banks (both public and private) have enough capital to run their operations?
    2. Are the levels of bad loans (or non-performing assets) within manageable limits?
    3. Are different sectors of the economy able to get credit (or new loans) for economic activity?
- As part of the FSR, the RBI also conducts '**stress tests**', which may figure out what might happen to the health of the banking system if the broader economy worsens.
- Similarly, it also tries to assess how factors outside India might affect the domestic economy.
- Each FSR also contains the results of the **Systemic Risk Surveys**.
- To know more about Financial Stability Report, click here.

Highlights of the 24th Report

- The global economic recovery has been losing momentum in the second half of 2021 in the face of
    1. Resurfacing COVID-19 infections,
    2. Supply disruptions and bottlenecks,
    3. Elevated inflationary levels and
    4. Shifts in monetary policy stances and actions across advanced economies and emerging market economies.
- On the domestic front, progress in vaccination has enabled the recovery to regain traction after the debilitating second wave of the pandemic, despite signs of slowing pace more recently.
- The corporate sector is gaining strength and bank credit growth is improving.
- As per the 'stress tests', balance sheets of banks remain strong and capital and liquidity buffers are being bolstered to mitigate future shocks.
- Capital to risk-weighted assets ratio (CRAR) of scheduled commercial banks (SCBs) rose to a new peak of 16.6% and their provisioning coverage ratio (PCR) stood at 68.1% in September 2021.
- Macro stress tests for credit risk indicate that the gross non-performing asset (GNPA) ratio of SCBs may increase from 6.9% in September 2021
    1. To 8.1% by September 2022 under the baseline scenario and

    2. To 9.5% by September 2022 under a severe stress scenario.
- However, SCBs would have sufficient capital, both at the aggregate and individual levels, even under stress conditions.
- Emerging signs of stress in MSME as also in the micro finance segment call for close monitoring of these portfolios going forward.

Reference

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2. https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=52996

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