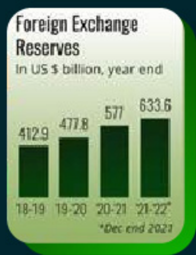
VAJIRAM & RAVI

(Institute for IAS Examination)

ECONOMIC SURVEY

HIGHLIGHTS

2021-2022



Azadi Ka Amrit Mahotsav

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1. PREFACE

THEME

- For second year running, the Economic Survey was written under the cloud of the Covid-19 pandemic. These have been difficult times for the world economy.
- It is not just about the immediate disruptions and uncertainty caused by repeated waves of the pandemic, but also the longer-term uncertainty about the post-Covid world due to accelerated shifts in technology, consumer behaviour, supply-chains, geo-politics, climate change and a host of other factors.
- Not only are these individual factors difficult to forecast, but the impact of their interactions are also fundamentally unpredictable.
- The theme of this Economic Survey, therefore, relates to the art and science of policy- making under conditions of extreme uncertainty.

AGILE APPROACH

Problems With "Waterfall" Approach

- The default mode of policymaking in India and most of the world has traditionally been to rely on a *pre-determined "Waterfall" approach – an upfront analysis of the issue, detailed planning and finally meticulous implementation*.
- This is the framework that underpins five-year plans and rigid urban masterplans.
- The problem is that the real world is a complex and unpredictable place buffeted by all kinds of random shocks and unintended consequences.
- The response of traditional economics was to create ever more detailed plans/regulations, and elaborate forecasting models despite more than adequate evidence that this did not improve outcomes.
- In his Nobel Prize acceptance speech, economist Friedrich Hayek dubbed this "***The Pretence of Knowledge***".

"Agile" Approach

- This Economic Survey sets out to explain the alternative "Agile" approach that informed India's economic response to the Covid-19 shock.
- This framework is based on feed-back loops, real-time monitoring of actual outcomes, flexible responses, safety-net buffers and so on.
- Planning matters in this framework but mostly for scenario- analysis, identifying vulnerable sections, and understanding policy options rather than as a deterministic prediction of the flow of events.
- The last Economic Survey did briefly discuss this approach, but this time it is a central theme.
- Some form of feedback loop based policymaking was arguably always possible, but the Agile framework is particularly relevant today because of the explosion of real-time data that allows for constant monitoring.
- Such information includes GST collections, digital payments, satellite photographs, electricity production, cargo movements, internal/external trade, infrastructure roll-out, delivery of various schemes, mobility indicators, to name just a few.
- Some of them are available from public platforms but many innovative forms of data are now being generated by the private sector. Short-term policy responses, therefore, can be tailored to an evolving

situation rather than what a model may have predicted.

BRIEF HISTORY OF THE ECONOMIC SURVEY

1950s

- The Survey was first published in 1950-51 and was initially part of the Budget documents.
- The document was less than 50 pages in the 1950s and contained a brief outline of economic developments of the previous year. For example, the Survey of 1957-58 had just 38 pages. It was primarily descriptive and contained little in the way of analysis and policy prescriptions.

1960s

- The ambition of the document increased significantly in the sixties.
- The Survey of 1962-63 was divided into two parts where the first part focused on broader economic developments while the second part gave a basic analysis of different sectors.
- The following year, the Economic Survey was separated from the budget and was presented a day earlier as a stand-alone document. This was the first Survey that saw the introduction of a statistical appendix.
- The sixties also saw several experiments with the format. In some years, the sections were done by themes such Recession and Measures of Revival, Control of inflation, and Food Shortage. In other years, it was done by sectoral sections such as Industry, Agriculture and Prices.

1970s – 1980s

- The format was further refined in the seventies and eighties with sections being transformed into chapters.
- This is the phase that developed the format that is broadly recognizable today. The 1980s saw a consistent rise in the length of the document with the introduction of new chapters.

1990s

- By 1990, the length of the Economic Survey had reached close to 250 pages including the statistical appendix.
- The Indian economy went through a major crisis and subsequent reforms in 1991, and the Economic Survey of 1991-92 was eagerly awaited.
- This was the first survey that was brought out in two volumes although the first volume was a short booklet of 27 pages that highlighted the macroeconomic problems facing the country while the second volume reviewed the various sectors in detail.

21st Century

- In 2007-08 and 2008-09, in the middle of a global financial crisis, an analytical chapter was added about the country's medium-term challenges and macro-economic prospects.
- From here onwards, more thematic chapters were included each year.
- In 2011-12, document was 485 pages spread over thirteen chapters and the statistical appendix. In 2013-14, the statistical appendix was separated out and published as a separate volume.
- In the following year, the Survey was presented as two volumes: Volume 1 had several chapters addressing topical policy concerns, while Volume 2 carried the traditional Economic Survey along with the statistical appendix.

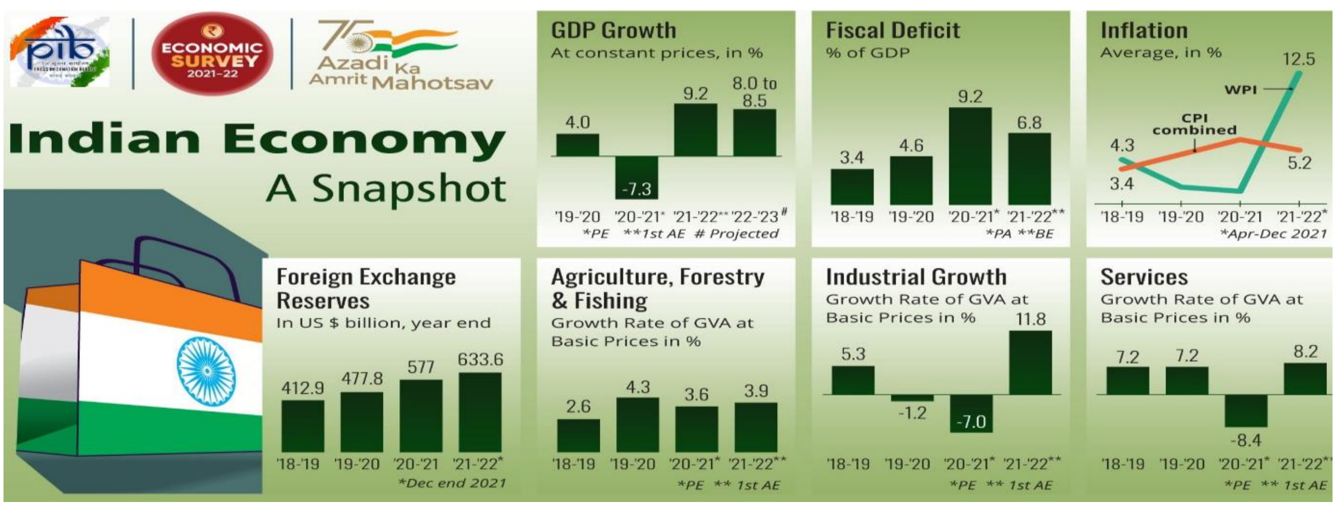
- This format was continued till last year with the length of document steadily going up.

Who Publishes Economic Survey?

- The Economic Survey is an annual document prepared by advisers to the finance minister and tabled in the Parliament a day before the Union budget.
- It is a flagship document of the **Department of Economic affairs under Finance Ministry.**
- The publication of the Economic Survey is a team effort. It is only possible because of inputs from Ministries and institutions across the Government of India, industry bodies, think-tanks and individual experts.
- The officers and consultants of the Economic Division, Department of Economic Affairs, put in months of effort to write, compile, and edit the document.

SHIFT TO SINGLE VOLUME FORMAT

- As one can see, the Economic Survey has gone through a great deal of evolution over the decades.
- The two-volume format did allow space for bringing in new ideas and themes but, at almost 900 pages, it was also becoming unwieldy. It was also felt that the thematic chapters of Volume 1 were not adequately linked to the sectoral chapters of Volume 2.
- Therefore, this year's Survey reverts to a single volume plus a separate volume for the Statistical Appendix. The idea of having a separate volume for the statistical appendix is to give it a distinct identity as the one-stop source of authentic data.
- It is hoped that it will evolve in the next few years to include new kinds of socio-economic data in line with the emphasis on a feedback loop approach.
- Along with the sectoral chapters, a new chapter has been added that demonstrates the use of satellite and geo-spatial images to gauge various economic phenomenon – urbanization, infrastructure, environmental impact, farming practices and so on.



2. STATE OF THE ECONOMY

INTRODUCTION

- Two years into the COVID-19 pandemic, the global economy continues to be plagued by uncertainty, with resurgent waves of mutant variants, supply-chain disruptions, and a return of inflation in both advanced and emerging economies.
- Moreover, the likely withdrawal of liquidity by major central banks over the next year may also make global capital flows more volatile.
- The economic impact of the second wave of the pandemic in April- June 2021 on Indian economy was muted compared to the national lockdown of the previous year.
- Advance estimates suggest that GDP will record an expansion of 9.2 % in 2021-22. This implies that the level of real economic output will surpass the pre-COVID level of 2019-20.

SECTORAL TRENDS

Agricultural Sector

- The agricultural sector was the least impacted by the pandemic-related disruptions. It is estimated to grow 3.9 % in 2021-22 on top of 3.6 % and 4.3 % respectively in the previous two years. This sector now accounts for 18.8 % of GVA.
- The strong performance of this sector was supported by Government policies that ensured timely supplies of seeds and fertilizers despite pandemic related disruptions.
- It was also helped by good monsoon rains as reflected in reservoir levels being higher than the 10-year average.

Industrial Sector

- The industrial sector went through a big swing by first contracting by 7 % in 2020-21 and then expanding by 11.8 % in this financial year.
- The manufacturing, construction and mining sub-sectors went through the same swing although the utilities segment experienced a more muted cycle as basic services such as electricity and water supply were maintained even at the height of the national lockdown.
- The share of industry in GVA is now estimated at 28.2 %.
- In November 2021, the Index of Industrial Production (IIP) and Core Industry indices went past their pre-pandemic level for the corresponding month in 2019.

Services Sector

- Services account for more than half of the Indian economy and was most impacted by the COVID-19 related restrictions, especially for activities that need human contact.
- Services sector first contracted by 8.4 % in 2020-21 and it is estimated to grow by 8.2 % in 2021-22, it should be noted that there is a wide dispersion of performance by different sub-sectors.
- Both the Finance/Real Estate and the Public Administration segments are now well above pre-COVID levels. However, segments like Travel, Trade and Hotels are yet to fully recover. There has been a boom in software and IT-enabled services exports.

DEMAND TRENDS

- Latest advance estimates suggest full recovery of all components on the demand side in 2021-22 except for private consumption.
- **Consumption:** Total consumption is estimated to have grown by 7.0 % in 2021-22 with *government consumption remaining the biggest contributor as in the previous year*.
- **Investment:** Investment, as measured by Gross Fixed Capital Formation (GFCF) is expected to register a robust growth of 15 % in 2021-22 and achieve full recovery of pre-pandemic level. The investment to GDP ratio has increased to 29.6 % in 2021-22, the highest in seven years.
- **Exports and Imports:** India's total exports are expected to grow by 16.5 % in 2021-22 and Imports are expected to grow by 29.4 % in 2021-22 surpassing corresponding pre-pandemic levels. Resultantly, India's net exports have turned negative in the first half of 2021-22.

BARBELL STRATEGY, SAFETY NETS AND AGILE RESPONSE

Barbell Strategy

- The last two years have been particularly challenging for policymaking around the world with repeated waves from a mutating virus, travel restrictions, supply-chain disruptions and, more recently, global inflation.
- Faced with all this uncertainty, the Government of India opted for a *"Barbell Strategy" that combined a bouquet of safety-nets to cushion the impact on vulnerable sections of society/business, with a flexible policy response based on a Bayesian updating of information*.
- This is a *common strategy used in financial markets to deal with extreme uncertainty* by combining two seemingly disparate legs.
- The iterative leg of this strategy is the same as the "Agile" approach that uses feedback-loops, and real-time adjustment.

Agile Approach

- The Agile approach is a well-established intellectual framework that is increasingly used in fields like project management and technology development.
- In an uncertain environment, the Agile framework responds by assessing outcomes in short iterations and constantly adjusting incrementally.

Comparison with "Waterfall" Framework

- It is important here to distinguish Agile from the "Waterfall" framework which has been the conventional method for framing policy in India and most of the world.
- Waterfall approach entails a detailed, initial assessment of the problem followed by a rigid up-front plan for implementation.
- This methodology works on the premise that all requirements can be understood at the beginning and therefore pre-commits to a certain path of action. This is the thinking reflected in five-year economic plans, and rigid urban masterplans.

High Frequency Indicators

- While some form of feedback-loop based policymaking was always possible, it is particularly effective at a time when we have wealth of real-time data.
- Over the last two years, Government leveraged a host of High Frequency Indicators (HFIs) both from government departments/agencies as well as private institutions that enabled constant monitoring and iterative adaptations.

- Such information includes GST collections, power consumption, mobility indicators, digital payments, satellite photographs, cargo movements, highway toll collections etc.
- These HFIs helped policy makers tailor their responses to an evolving situation rather than rely on pre-defined responses of a Waterfall framework.

Safety Nets Used to Cushion Vulnerable Sections

- Notice that the flexibility of Agile improves responsiveness and aids evolution, but it does not attempt to predict future outcomes.
- Therefore, the other leg of the Barbell strategy is also needed. It cushions for unpredictable negative outcomes by providing safety nets.
- This explains why the Government's initial measures in 2020-21 were mostly about making food available to the poor, providing emergency liquidity support for MSMEs and holding the Insolvency and Bankruptcy Code in abeyance.
- Once these were in place, the Government made its way forward by regularly announcing packages targeted at specific challenges.

VACCINATION

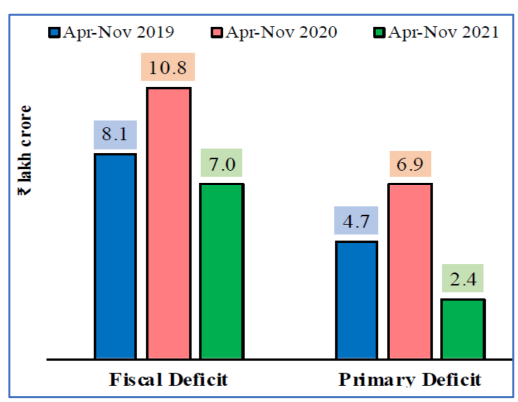
- As India completed one year of its COVID-19 vaccination drive in Jan' 2022, it crossed the historic milestone of administrating more than 156 crore doses of vaccine.
- More than 88 crore people (93 % of the adult population) have received at least one dose of which around 66 crore people (70 %of the adult population) stands fully vaccinated.
- With vaccination drive further extended to the age group of 15-18 years in January, 2022, more than 50 % of India's population in this age group have received their first dose of the vaccine by Jan' 2022.

MACROECONOMIC STABILITY

External Sector

- Despite all the disruptions caused by the global pandemic, India's balance of payments remained in surplus throughout the last two years.
- This allowed the Reserve Bank of India to keep accumulating foreign exchange reserves, which stands at US$ 634 billion on 31st December 2021). This is equivalent to 13.2 months of imports and higher than the country's external debt.
- As of end-November 2021, India was the fourth largest foreign exchange reserves holder in the world after China, Japan, and Switzerland.

Fiscal Balance



- The fiscal support given to the economy as well as the health response caused the fiscal deficit and government debt to rise in 2020-21. However, there has been a strong rebound in government revenues in 2021-22 so far.
- The fiscal deficit for April-November 2021 has been contained at 46.2 % of Budget Estimates (BE) which is nearly one third of the proportion reached during the same period of the previous two years (135.1% of BE in April-November 2020 and 114.8% of BE in April-November 2019).
- The primary deficit during the period April to November 2021 turned up at nearly half of the level it had

reached during April to November 2019.

Financial Sector

- **India's capital markets,** have done exceptionally well and have allowed record mobilization of risk capital for Indian companies. The Sensex and Nifty scaled up to touch its peak at 61,766 and 18,477 in Oct' 2021. Among major emerging market economies, Indian markets outperformed its peers in April-December 2021.
- **Gross Non-Performing Advances (GNPA) ratio** of Scheduled Commercial Banks (SCBs) decreased from 7.5% at end-September 2020 to 6.9% at end-September 2021. **Net Non-Preforming (NNPA) ratio** of SCBs also declined from 6% at end of 2017-18 to 2.2% at end-September 2021.
- **Capital to risk-weighted asset ratio (CRAR) of SCBs** increased from 15.84 % at end- September 2020 to 16.54 % at end-September 2021.

Inflation

- The surge in energy prices, non-food commodities, input prices, disruption of global supply chains, and rising freight costs stoked **global inflation** during the year.

Consumer Price Index (CPI) inflation	• In India, it moderated to 5.2 % in 2021-22 (April-December) from 6.6% in the corresponding period of 2020-21. The decline in retail inflation in 2021-22 was led by easing of food inflation
Wholesale Price Inflation (WPI)	• It has been running in double-digits. The inflation in 'fuel and power' group of WPI was above 20% reflecting higher international petroleum prices. The high WPI inflation is partly due to base effects that will even out.

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SUPPLY SIDE REFORMS

- Another distinguishing feature of India's economic response has been an *emphasis on supply-side reforms rather than a total reliance on demand management*.
- These *supply-side reforms include deregulation of numerous sectors, simplification of processes, removal of legacy issues like 'retrospective tax', privatisation, production-linked incentives and so on*.
- There are two common themes in India's supply-side strategy:
  - **Reforms that improve flexibility and innovation to deal with the long-term unpredictability of the post-Covid world.**
  - **Reforms aimed at improving the resilience of the Indian economy.**
- Two-pronged approach of "flexibility" and "resilience" is analogous to the Barbell strategy used for the short-term response to the pandemic.

Process Reforms

- An important theme discussed in the Economic Survey is that of '*process reforms*'.
- It is important to distinguish between *deregulation and process reforms. The former relates to reducing or removing the role of government from a particular activity*.
- *In contrast, the latter broadly relates to simplification and smoothening of the process for activities where the government's presence as a facilitator or regulator is necessary*.

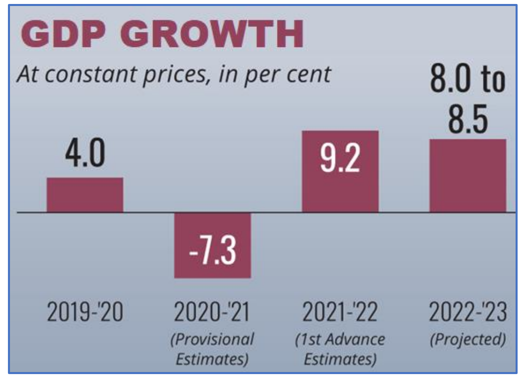
Global Supply-Side Disruption

- As the world economy recovered in 2021, it is faced with serious supply-side constraints ranging from delivery delays, container shortages and semiconductor chip shortages.

- The stress in the container shortages can be captured in the **Drewry's Composite World Container Index.** The Index stands at US$ 9,698.33 per 40ft container as of 20th January 2022. This is 82 % higher than a year earlier.
- A report by investment bank Goldman Sachs 2021 states that the supply chain disruptions in the **Semiconductor Industry** have spill overs in over 169 industries.

GROWTH OUTLOOK

- The Indian economy is estimated to grow by 9.2% in real terms in 2021-22, after a contraction of 7.3% in 2020-21.
- India's GDP is projected to grow in real terms by 8.0-8.5% in 2022-23.



Supporting Factors

- Growth in 2022-23 will be supported by *widespread vaccine coverage, gains from supply-side reforms and easing of regulations, robust export growth, and availability of fiscal space to ramp up capital spending*.
- The year ahead is also well poised for a pick-up in private sector investment with the financial system in a good position to provide support to the revival of the economy.
- This projection is based on the assumption that there will be no further pandemic related economic disruption, monsoon will be normal, withdrawal of global liquidity by major central banks will be broadly orderly, oil prices will be in the range of US$70-$75/barrel, and global supply chain disruptions will steadily ease over the course of the year.

3. FISCAL DEVELOPMENTS

INTRODUCTION

- Government of India has adopted a calibrated fiscal policy approach to the pandemic, which had the flexibility of adapting to an evolving situation to support the vulnerable sections of society/firms and enable a resilient recovery.
- India's unique agile policy response differed from the waterfall strategy of introducing front-loaded stimulus packages, adopted by most other countries in 2020.

FISCAL POLICY STRATEGY IN THE AFTERMATH OF THE PANDEMIC OUTBREAK

- In the initial phase of the pandemic, the fiscal policy focused on building safety-nets for the poor and vulnerable sections of society to hedge against the worst-case outcomes.
- Stimulus measures such as direct benefit transfers to the vulnerable sections, emergency credit to the small businesses, and the world's largest food subsidy programme targeting 80.96 crore beneficiaries enabled the creation of safety-nets.
- This was followed by a series of stimulus packages spread throughout the year 2020-21, driven by a Bayesian updating of information as the situation evolved. With the restoration of economic activities, the fiscal response focused on stimulating demand in the economy.
- During this phase of economic recovery, the stimulus mix included investment boosting measures like Production Linked Incentives (PLI), steps to encourage investment in infrastructure sector and enhancing capital expenditure by the Central and state Governments.
- Building on the same approach, the Union Budget 2021-22 had enhanced the budget outlays for the more productive capital expenditure.
- The Government budgeted for a 34.5% growth in capital expenditure over 2020-21 BE – with emphasis on railways, roads, urban transport, power, telecom, textiles and affordable housing amid continued focus on the National Infrastructure Pipeline.
- The stimulus measures announced during the year 2021-22 have continued the emphasis on liquidity enhancing and investment boosting measures such as the PLI Scheme, credit guarantee schemes and export boosting initiatives to support the reviving economy, apart from providing free food grains to the poor.

PERFORMANCE OF FISCAL INDICATORS DURING 2021-22

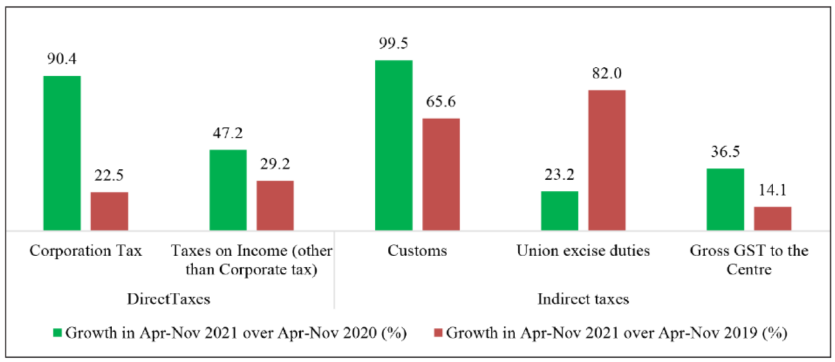
- The fiscal deficit of the Central Government at end November 2021 stood at 46.2% of the BE compared to 135.1% during the same period in 2020-21 and 114.8% during the same period in 2019-20.
- During this period both fiscal deficit and primary deficit stood at levels much below the corresponding levels in the previous two years.
- The primary deficit during the period April to November 2021 turned up at nearly half of the level it had reached during April to November 2019.

Revenue Collection

- **Revenue receipts** have grown at a much higher pace during the current financial year (April to November 2021) compared to the corresponding periods during the last two years.

- This performance is attributable to considerable growth in both tax and non-tax revenue.
- **Net tax revenue to the Centre**, which was envisaged to grow at 8.5% in 2021-22 BE relative to 2020-21 PA, grew at 64.9% during April to November 2021 over April to November 2020 and at 51.2% over April to November 2019.
- Within direct taxes, **personal income tax** has grown at 47.2% over April-November 2020 and at 29.2% over the April-November 2019. The corporate income tax registered a growth of 90.4% over April-November 2020 and 22.5% over April-November 2019.
- **Indirect tax receipts** have registered a YoY growth of 38.6% in the first eight months of this fiscal year. The rise in imports of goods and services ensued due to the recovery in both manufacturing sector and consumption demand, have led to a rise in customs collection.
- **Revenue from excise duties** has registered a YoY growth of 23.2% during April- November 2021.
- Government had raised the **excise duty on petrol and diesel** to garner revenues during the year 2020-21. However, by the end of Nov 2021, when the global oil prices had increased, other tax revenue sources had recovered and inflationary pressures were building up in the economy, the Central excise duty on petrol and diesel was reduced.

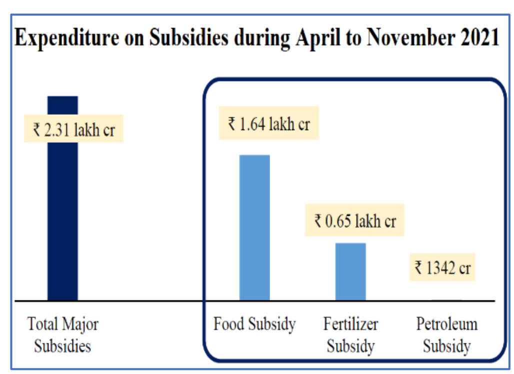
Growth in major direct and indirect taxes during April-November 2021



- Over the last 4 years, **GST revenues** have steadily grown and the year-average of monthly GST collection has increased from 0.9 lakh crore in 2017-18 to 1.19 lakh crore in 2021-22 (up to December).
- **Non-tax revenue collections** up to November 2021 registered an YoY increase of 79.5%. This increase was driven by dividends and profits, which stood at Rs. 1.28 lakh crore against BE of Rs. 1.04 lakh crore.
- The key component of dividends and profits during this period was Rs. 0.99 lakh crore surplus transfer from RBI to the Central Government.

Expenditure

- The total expenditure of the Government increased by 8.8% during April to November 2021 and stood at 59.6% of Budget Estimate.
- While the revenue expenditure has grown by 8.2% during the first eight months of 2021-22 over the same period in 2020-21, the non- interest revenue expenditure grew by 4.6% over April to November 2020.
- During April to November 2021, capital expenditure registered a growth of 13.5% over April to November 2020 and 28% over April to November 2019.



Subsidies

- During April to November 2021, the expenditure on major subsidies stood at Rs. 2.31 lakh crore.
- Food subsidy being the major component of total subsidies was at two third of its BE *i.e.,* Rs. 1.64 lakh crore during the first eight months of 2021-22.
- Pradhan Mantri Garib Kalyan Ann Yojana provides free food grains to beneficiaries over and above the

regular monthly NFSA food-grains.

LONG-TERM TRENDS IN FINANCES: CENTRE GOVERNMENT

- During the year 2020-21, there was shortfall in revenue collection owing to the interruption in economic activity and the additional expenditure requirements to mitigate the fallout of the pandemic on vulnerable people, small businesses, and the economy in general.
- As a result, the budgeted fiscal deficit for 2020-21 was revised from 3.5% in BE to 9.5% in RE. The fiscal deficit for 2020-21 Provisional Actuals stood at 9.2% of GDP i.e., lower than RE.
- The Medium- Term Fiscal Policy (MTFP) Statement presented with Budget 2021-22 envisaged a fiscal deficit target of 6.8% of GDP for 2021-22.

Trends in Receipts

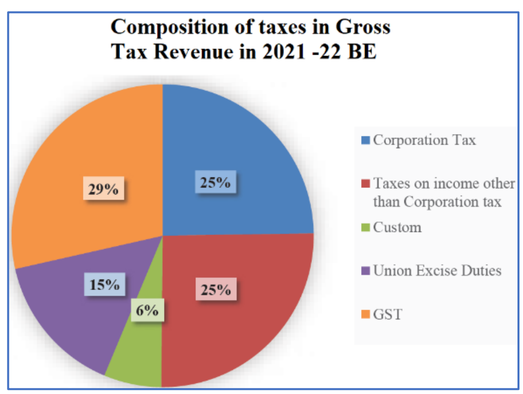
- Central Government receipts can broadly be divided into non-debt and debt receipts.
- The non-debt receipts comprise of tax revenue, non-tax revenue, recovery of loans, and disinvestment receipts.
- Debt receipts mostly consist of market borrowings and other liabilities, which the government is obliged to repay in the future.
- The Budget 2021-22 targeted significantly high growth in non-debt receipts of the Central Government, which was driven by robust growth in all its' components.

Non-Tax Revenue

- Non-tax revenue consists mainly of interest receipts on loans to States and Union Territories, dividends and profits from Public Sector Enterprises including surplus of Reserve Bank of India transferred to Government of India, and external grants and receipts for services provided by the Central Government.
- These services include fiscal services like currency, coinage and mint, general services such as Public Service Commission and police, social services like education and health, and economic services like irrigation, transportation and communication.
- The Budget for 2021-22 envisaged generation of Rs. 2.43 lakh crore of non-tax revenue, 16.8% higher than 2020-21 PA.

Tax Revenue

- Budget 2021-22 envisaged a growth of 16.7% in gross tax revenue (GTR) over the revised estimates (RE) of 2020- 21.
- GTR was estimated at Rs. 22.17 lakh crore for 2021-22 BE, which was 9.9% of the GDP.
- The budgeted growth in GTR was estimated to be led by 22.4 per cent growth in direct taxes and 11.4% growth in indirect taxes over the revised estimates of 2020-21.
- Broadly, 50% of GTR was estimated to accrue from direct taxes and the remaining 50% from indirect taxes.



Non-Debt Capital Receipts

- Non-debt capital receipts mainly consist of recovery of loans and advances, and disinvestment receipts.
- The share of recovery of loans has declined over the years following disintermediation of loan portion of Central assistance to States consequent to the recommendation of the Twelfth Finance Commission, and States allowed to borrow directly from the market.

- The Budget for 2021-22 has envisaged generation of Rs. 1.88 lakh crore of non-debt capital receipts, comprising Rs. 1.75 lakh crore of disinvestment receipts.
- In order to minimize the presence of the Government in the PSEs across all sectors of the economy, the Government has adopted a new disinvestment policy for Atmanirbhar Bharat in February 2021.

Evolution of the Disinvestment Policy of the Government of India

- With the passing of the Constitution (First Amendment) Act, 1951, nationalisation of private firms became a standard policy tool by the Government. Nevertheless, the issue of nationalisation has always been a highly debated issue.
- After the 1991 reforms, there was a transition in thinking about public and private sector. The term 'disinvestment' was used first time in Interim Budget 1991.
- However, the policy on disinvestment gathered steam under the Government of PM Vajpayee, when a new Department of Disinvestment was created in 1999, which became a full Ministry in 2001.
- It was during this period that the concept of strategic sales of state-owned companies became a part of policy debate.
- The process of disinvestment continued intermittently over the next decade 2004-2014, until the recent emphasis in this direction over the last five years.
- After 2014, the disinvestment policy was renewed with stake sales in PSEs such as Hindustan Petroleum Corporation Limited (HPCL), Rural Electrification Corporation Limited (REC) etc.

New Public Sector Enterprise ("PSE") Policy

- New Public Sector Enterprise ("PSE") Policy for Atmanirbhar Bharat was notified on 4th February 2021.
- Under the New PSE Policy, public sector commercial enterprises have been classified as Strategic and Non-Strategic sectors.
- Following four broad strategic sectors have been delineated
  - ✓ Atomic Energy, Space and Defence;
  - ✓ Transport and Telecommunication;
  - ✓ Power, Petroleum, Coal and other minerals; and
  - ✓ Banking, Insurance and Financial Services.

Trends in Expenditure

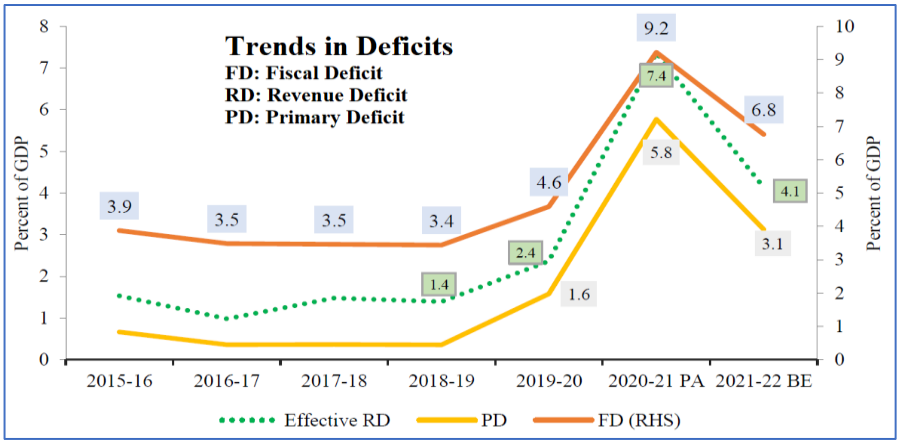
- In the wake of the pandemic, the additional expenditure requirements led to a YoY growth of more than 30% in the revenue expenditure of the Government in 2020-21 PA.
- The decline in salaries during 2020-21 PA was largely due to freezing of the additional instalment of Dearness Allowance to Government employees and disruptions in hiring.
- Nearly 60% of the increase in revenue expenditure during 2020-21 PA was due to increase in major subsidies.
- Government has focused on improving the quality of expenditure. Capital expenditure registered a YoY growth of 26.5% in 2020-21 PA, as it increased from 1.6% of GDP in 2019-20 to 2.2% of GDP in 2020-21 PA.

Transfer to States

- The Union Government has accepted the recommendations made by the Fifteenth Finance Commission (XV-FC) in its Report for the award period 2021-22 to 2025-26 relating to the grants-in-aid amounting to Rs. 2,33,233 crores to the States during 2021-22 for Post Devolution Revenue Deficit grant, grants to Local Bodies, Health sector grant and Disaster Management grants.
- The Post Devolution Revenue Deficit Grants are provided to the States under Article 275 of the Constitution.

- the XV-FC had recommended that urban areas are grouped into two broad categories for recommending grants to urban local bodies: (a) Category-I cities: urban agglomerations/cities with more than one million population and (b) Category-II cities: other than million-plus cities.

Central Government Debt



- Total liabilities of the Central Government include debt contracted against the Consolidated Fund of India, technically defined as Public Debt, as well as liabilities in the Public Account.
- These liabilities include external debt (end-of-the financial year) at current exchange rate but exclude part of NSSF liabilities to the extent of States' borrowings from the NSSF and investments in public agencies out of the NSSF, which do not finance Central Government deficit.
- Central Government's total outstanding liabilities were at Rs. 117.04 lakh crore at end-March 2021.
- Public Debt accounted for 89.9% of total liabilities, while Public Account Liabilities, which include National Small Savings Fund, State Provident Funds, Reserve Funds and Deposits and other Accounts, constituted the remaining 10.1%.

LONG-TERM TRENDS IN FINANCES: STATES GOVERNMENT

- The Gross Fiscal Deficit of States is estimated to cross the Fiscal Responsibility Legislation (FRL) threshold of 3% of GDP during 2020-21 RE and 2021-22 BE.
- The Revenue Deficit of the States also increased from 0.1% of GDP in 2018-19 to 2 per cent of GDP in 2020-21 (RE).
- This relaxation in borrowing limits was allowed on account of the additional expenditure needs and constrained revenues of the States due to COVID-19.
- The net borrowing ceilings of the States were enhanced to 5% of GSDP of the States for the year 2020-21 and 4% of GSDP of the States for 2021-22.
- Both Gross Fiscal Deficit and Revenue Deficit for the States are budgeted to decline in 2021-22 from the high levels they reached in 2020-21.

Fifteenth Finance Commission (XV-FC)

- In addition to the net borrowing ceilings fixed for the States, XV-FC had recommended performance based additional borrowing space of 0.50% of Gross State Domestic Product (GSDP) to States in the power sector.
- The objective of the additional borrowing space is to improve the operational and economic efficiency of the sector, and promote a sustained increase in paid electricity consumption.
- This special dispensation has been recommended for each year for a four-year period from 2021-22 to 2024-25.

Measures Taken By The Centre To Support The States During 2021-22

1) Enhanced limit of borrowing for the States

- Under the Atma-Nirbhar Bharat package, additional borrowing limit of up to 2% of Gross State Domestic

Product (GSDP) was allowed to the States for FY2020-21, which was equivalent to Rs. 4.27 lakh crore.

- Of the additional 2% borrowing allowed to the States, the first instalment of 0.5% borrowing was untied for all the states.
- The second part amounting to 1% of GSDP was subject to implementation of following four specific State level reforms, where weightage of each reform is 0.25% of GSDP:-

- Implementation of One Nation One Ration Card System
- Ease of doing business reform
- Urban Local body/ utility reforms
- Power Sector reforms

2) Loan to States in lieu of GST Compensation shortfall

In order to meet the shortfall in Goods and Services Tax (GST) compensation to be paid to States, the Government of India had set up a special borrowing window in the year 2020-21, which was extended for the current financial year 2021-22.

3) Scheme for Special Assistance to States for Capital Expenditure

- This scheme was approved wherein special assistance of Rs. 11,830 was provided to the State Governments in the form of 50-year interest free loan during 2020-21.
- This Scheme has been extended for the year 2021-22 with an allocation of Rs. 10,000 crores.
- The Scheme for the financial year 2021-22 has three parts:
  - Part-I is for the 8 north eastern States and for the hill States of Uttarakhand and Himachal Pradesh.
  - Part-II is for all other States not included in Part-I.
  - Part-III is for providing incentives to States Governments for privatization/disinvestment of the State Public Sector Enterprises (SPSEs) and monetization/recycling of assets.

LONG-TERM TRENDS IN FINANCES: GENERAL GOVERNMENT

- The General Government finances give an overview of fiscal position of the Government sector as a whole.
- The General Government liabilities as a proportion of GDP increased steeply during 2020-21 on account of the additional borrowings made by Centre and States due to the shortfall in revenue and higher expenditure requirements arising out of COVID-19 pandemic.
- However, in 2021-22 BE, the fiscal indicators are expected to rebound with the recovery in the economy and the General Government is expected to follow the path of fiscal consolidation.

POLICY MEASURES TO ENHANCE THE EFFICIENCY OF GOVERNMENT SPENDING

Government has undertaken consistent efforts to boost the efficiency of public procurement policy.

Government e-Marketplace (GeM)

- The Government in 2016 had set up a dedicated e-market known as Government e-Marketplace (GeM) for purchase of certain standard day to day use goods.

- This is a simple, transparent and completely digital process for procurement.
- The General Financial Rules 2017 mandates all Ministries and Departments to procure Goods and Services available on GeM from GeM.
- The use of this e-marketplace has resulted in a substantial reduction in prices in comparison to the rates used earlier, with average prices falling by at least 15-20%, up to 56%.

New Guidelines for Reforms in Public Procurement and Project Management

The Government issued new guidelines for procurement and project management in October 2021, which have expanded the ambit of selecting bidders for executing government projects and procuring goods and services.

The key changes in the procurement process are as follows:

- The revised guidelines now allow Quality-cum-Cost Based Selection (QCBS) for the selection of bidders for works and non-consultancy services as well (where estimated value of procurement does not exceed Rs. 10 crore).
- In order to ensure quality, the procuring entities now have the freedom to amend the specifications based on their requirements and make any criteria used in evaluation as mandatory.
- The new guidelines stipulate timely release of payments of 75% or more of bills raised within 10 working days of the submission of the bill.
- An additional method, fixed budget-based Selection has been added for consultancy services wherein the type of consulting service required is simple and/or repetitive and can be precisely defined.

4. EXTERNAL SECTOR

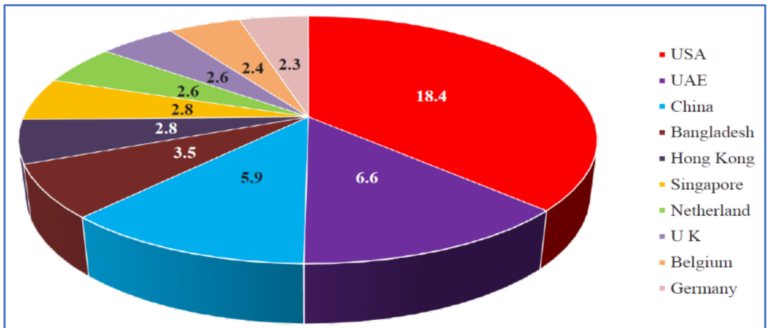
GLOBAL ECONOMIC ENVIRONMENT

- COVID-19 pandemic continued to impact the global economic environment during 2021.
- The first half (H1) of the calendar 2021 witnessed an acceleration in the global economic activity, which lifted the merchandise trade above its pre-pandemic peak.
- World Trade Organization in its October 2021 release, upgraded its forecast for global merchandise trade volume growth to 10.8% in 2021, followed by a 4.7% rise in 2022.
- Apart from revival in global economic activity, the high growth rate for global merchandise trade volume in H1 of 2021 is also aided by the previous year's slump, which bottomed out in the second quarter of 2020.
- As regards global financial conditions, in 2021, inflation picked up globally as economic activity revived with opening up of economies. Inflation in US touched 6.8% in November 2021, the highest since 1982, driven largely by energy and food prices.
- Overall, the balance of risks for global trade is tilted to the downside. The biggest downside risk emanates from the pandemic itself, particularly with resurgence of new variants such as Omicron.

DEVELOPMENTS IN INDIA'S MERCHANDISE TRADE

Merchandise Exports

- During 2021-22 (April-December), the merchandise exports recorded growth of 49.7% to US$ 301.4 billion, compared to corresponding period of last year and 26.5% over 2019-20 (April-December), <u>*exceeding the pre-pandemic levels*</u>.
- <u>*Out of an ambitious export target of US$ 400 billion set for 2021-22, India has already attained more than 75 per cent of it by exporting goods worth US$ 301.4 billion*</u>.
- Sharp recovery in key markets; increased consumer spending; pent up savings and disposable income due to announcement of fiscal stimulus by major economies; global commodity price rise and an aggressive export push by the government have bolstered exports in 2021-22.
- The rise in exports is contributed by high growth in petroleum, oil and lubricants (POL) exports (constituting about 15 per cent of total exports) as well as non-POL exports, indicating the broad-based nature of expansion.
- The export of agriculture and allied products (including marine and plantation products) grew by 23.2 per cent to US$ 31.0 billion during April-November, 2021 over the corresponding period of 2020-21.
- Ministry of Civil Aviation launched the ***Krishi UDAN (Ude Desh ka Aam Nagarik) scheme*** in August 2020 to assist farmers in transporting agricultural products on international and national routes to improve their value realisation.
- United States of America (USA) remained the top export destination in April-November, 2021 followed by United Arab Emirates (UAE) and China. Belgium has



Top ten Export Destinations in 2021-22 (April- November) [By Share in %]

replaced Malaysia and entered into the top ten leading export destinations during April-November 2021.

Progress on Trade Agreements

- During last few years, India has initiated its trade agreement negotiations and reviewed existing agreements with many countries. This inter alia includes negotiations for
  - ✓ Comprehensive Economic Cooperation Agreement (CECA) between India and Australia.
  - ✓ FTA with European Union (EU).
  - ✓ Comprehensive Economic Partnership Agreement (CEPA) with Canada, and
  - ✓ CEPA with UAE.
- In addition, India is reviewing its existing trade agreements such as the CECA with Singapore and ASEAN-India Trade in Goods Agreement (AITIGA) with ASEAN, among others.
- Further, India launched the FTA negotiations with the UK on 13th January, 2022, which is expected to facilitate the target of doubling bilateral trade by 2030, set by the Prime Ministers of both the nations in May 2021.

Major Schemes & Initiatives to boost exports

- **A WTO compliant Remission of Duties and Taxes on Exported Products (RoDTEP) scheme** is brought into effect from 01.01.2021. This scheme reimburses currently un-refunded Central, State, and Local taxes and duties incurred in the process of manufacture and distribution of exported products and thereby provides a level playing field to domestic industry abroad.
- **Developing District as Export Hub:** Under this initiative, the focus is to make districts active stakeholders in the promotion of exports of goods/services produced/ manufactured in the district. District Export Promotion Committees (DEPCs) have been set up in each district.
- **Production-Linked Incentive (PLI) scheme** provides incentives to companies on incremental sales for products manufactured in domestic units, which is expected to create minimum production of over US$ 500 billion in 5 years.
- The export promotion schemes such as **Trade Infrastructure for Export Scheme (TIES), Market Access Initiatives (MAI), Emergency Credit Line Guarantee Scheme (ECLGS) and Advance Authorization Scheme** continue to provide support to trade infrastructure and marketing.

Enabling An Efficient Logistics Eco-System To Boost Exports

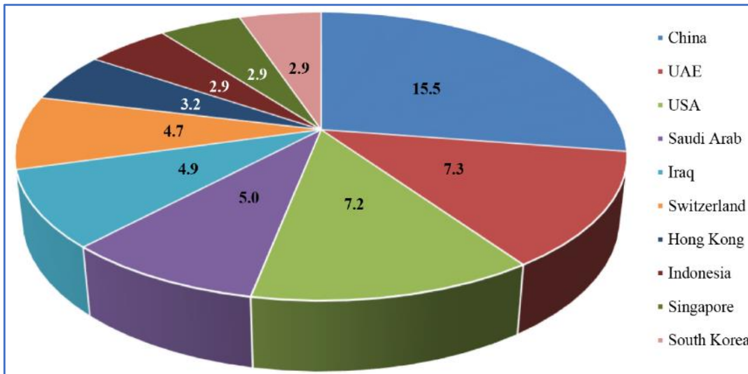
- India scored 90.3% in 2021 in United Nations Economic and Social Commission for Asia Pacific's (**UNESCAP**) latest *Global Survey on Digital and Sustainable Trade Facilitation*, a remarkable jump from its score of 78.5% in 2019, on account of improvement in scores of all five key indicators tracked by the survey i.e., *Transparency, Formalities, Institutional Arrangement and Cooperation, Paperless Trade and Cross-Border Paperless Trade*.
- The Survey notes that India is the best performing country when compared to South and SouthWest Asia region (63.1%) and Asia Pacific region (65.9%).
- Approved in October 2021, **Pradhan Mantri Gati Shakti National Master Plan (NMP)** aims to provide multimodal connectivity to various economic zones and integrate the infrastructure linkages holistically for seamless movement of people, goods & services to improve logistics efficiency.

Merchandise Imports

- Merchandise imports grew at the rate of 69% to US$ 444 billion in April-December, 2021 over the corresponding period of last year and 21.9% over April- December, 2019, crossing the pre-pandemic levels.
- The expansion recorded in merchandise imports in April-December, 2021 is accounted by the growth in three components i.e., *gold & silver imports (accounting for 9.1% share in total imports), POL imports (26.6%*

share) and non-POL, non-Gold & silver imports (64.3% share).

- Among major import commodities, *crude petroleum continues to be the highest imported commodity. Gold imports returned to second position. Industrial machinery for dairy and Iron & Steel do not figure in the list of top ten import commodities in current year*, unlike in April-November, 2019.
- Among the top ten countries for import origin, China, UAE and USA were the top import sources for India in April-November, 2021, with China's share reducing to 15.5% from 17.7% in corresponding period a year earlier.



Top ten Import Sources in 2021-22 (April-November) [By Share in %]

- Switzerland, which was ousted last year from top ten sources of India's import, bounced back at sixth position with a share of 4.7% in April-November, 2021.
- **Indonesia – second biggest source of crude palm oil –** remains to be one of top ten suppliers of India, with a share of 2.9% in total imports during same period.

Merchandise Trade Balance

- As both the merchandise exports as well as imports rebounded strongly and surpassed pre-pandemic levels, *it led to an increase in merchandise trade deficit*.
- It stood at US$ 142.4 billion in April-Dec, 2021 compared to deficit of US$ 61.4 billion in corresponding period of last year and US$ 125.9 billion in April-Dec, 2019.
- **India had the most favourable trade balance with USA followed by Bangladesh and Nepal.**

TRADE IN SERVICES

Services Exports

- Despite pandemic induced global restrictions and weak tourism revenues, India's services exports recorded growth of 18.4 per cent to US$ 177.7 billion during 2021-22 (April-December), over corresponding period a year earlier and 11.0 per cent growth over 2019-20 (April-December), surpassing the pre-pandemic levels.
- This is mainly on account of top three computer, business and transportation services that constitute more than 80% of total services exports.
- Key reforms undertaken by Government include liberalizing the Other Service Providers (OSPs) in November 2020 and further in June 2021 announcing reform package for Telecom sector.

Services Imports

- Services imports rose by 21.5 per cent to US$ 103.3 billion in 2021-22 (April-December) from the corresponding period a year earlier and 6.2 per cent over 2019-20 (April- December), crossing the pre-pandemic levels.
- The surge in services imports is mainly on account of payments for business, transport, travel and computer services, which together constitute more than 75 per cent of services imports.

PRIVATE TRANSFERS

- In H1: FY 22, the net private transfers – mainly representing remittances by Indians employed overseas –

grew by 7.2 % to US$ 38.4 billion, over corresponding period a year earlier and by 0.1 % over H1: FY 20, exceeding the pre-pandemic levels.

- As per the Migration and Development Brief, World Bank (November 2021), **India continues to be the largest remittance recipient country in the world in 2021 (in current US dollar terms)** and has been so since 2008.

INVISIBLES

On account of higher net services receipts and private transfers, net invisibles were higher at US$ 72.1 billion in H1: FY 22, compared to US$ 60.1 billion last year and US$ 63.7 billion in H1: FY 20, surpassing the pre-COVID levels.

CURRENT ACCOUNT BALANCE

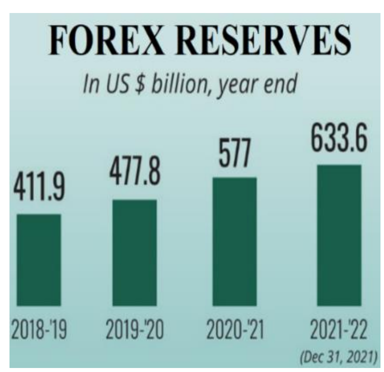
- After witnessing a surplus in H1: FY 21, India's current account balance flipped into deficit of US$ 3.1 billion (0.2 per cent of GDP) in H1: FY 22, on the back of sharp increase in merchandise trade deficit.
- However, this current account deficit remained lower than the deficit of US$ 22.6 billion recorded in H1: FY 20 (pre-pandemic level).

CAPITAL ACCOUNT/ FINANCIAL ACCOUNT

- Foreign Investment, consisting of foreign direct investment (FDI) and foreign portfolio investment (FPI), is the largest component of the capital account. Falling short of the pre-pandemic level, the net foreign investment inflows (FIIs) – primarily driven by FDI – moderated to US$ 25.4 billion in H1: FY 22 compared to corresponding period of FY 21.
- As far as sector-wise FDI inflows are concerned, **computer software and hardware attracted the highest FDI equity inflows** of US$ 7.1 billion in April-September, 2021.
- **Singapore continues to be the top investing country in terms of FDI equity inflow** while USA occupies the second position.
- Foreign Portfolio Investment (FPI) flows remained volatile due to global uncertainties relating to US monetary policy normalisation, rising global energy prices, fear of new variants of COVID-19 and strong inflationary pressures.

BOP BALANCE AND FOREIGN EXCHANGE RESERVES

- India's current account balance switched into a deficit in H1: FY 22 on the back of widening of trade deficit.
- However, this current account deficit (CAD) was adequately cushioned by robust capital flows, resulting into an overall balance of payments (BoP) surplus of US$ 63.1 billion in H1: FY 22.
- This led to an augmented foreign exchange reserves crossing the milestone of US$ 600 billion and touching US$ 635.4 billion as at end-September 2021.
- As at end-November 2021, India was the fourth largest foreign exchange reserves holder in the world after China, Japan and Switzerland.



MOVEMENT IN EXCHANGE RATE

- Indian rupee depreciated by 4.5 per cent (y-o-y basis) against US dollar in 2020-21. It depreciated by 3.4 per cent in December 2021 over March 2021.

- The depreciation of the rupee, however, was modest as compared with its emerging market peers, such as Turkish lira, Argentine Peso, Thai baht, and Philippine peso.
- The rupee appreciated against euro, Japanese yen and pound sterling by 1.8 per cent, 1.3 per cent and 0.6 per cent, respectively, in December 2021 over March 2021.

NET INTERNATIONAL INVESTMENT POSITION

- Net International Investment Position (IIP) is the difference between the value of financial assets of residents of an economy that are claims on non-residents and the liabilities of residents of an economy to non-residents at a point in time.
- It represents either a net claim on or a net liability to the rest of the world.
- India's net IIP stood at (-) 11.3 per cent of GDP (US$ -332 billion) as at end-September 2021 – a sustained improvement since end-March 2019 – led by a higher asset-liability ratio, which improved to 73.6 per cent as at end-September 2021 from end-March 2021.
- The improvement in asset- liability ratio is due to significant build-up of reserve assets (US$ 58.4 billion between Q4: FY21 and Q2: FY22), which more than compensated for build-up in liabilities on account of FDI, FPI and other investments.

EXTERNAL DEBT

- India's external debt as at end-September 2021, estimated at US$ 593.1 billion, grew by US$ 22.3 billion (3.9 per cent) over the level as at end-June 2021.
- Excluding the valuation gains due to the appreciation of the US dollar, the increase in external debt would have been US$ 23.7 billion, instead of US$ 22.3 billion.
- As far as currency composition of external debt is concerned, US dollar denominated debt remained the largest component of India's external debt, with a share of 51 per cent at end-September 2021, followed by the Indian rupee.

Components

- Commercial borrowings, the largest component of external debt, at US$ 218.8 billion, recorded a quarter-over-quarter (q-o-q) positive growth of 2.5 percent over the level a quarter ago.
- The NRI deposits, the second largest component, at US$ 141.6 billion were at the same level as at end of the previous quarter.
- The short-term trade credit, the third largest component, at US$ 97.4 billion continued to contract.
- Together, these three components constitute 77.2 percent of total external debt as at end-September, 2021.

External Sector Vulnerability Indicators

- Leveraging on the robust trends outlined above, the set of salient external sector vulnerability indicators improved.
- Debt service (i.e., principal repayments and interest payments) declined to 4.7 per cent of current receipts at end-September 2021, as compared with 8.2 per cent at end-March 2021, reflecting lower repayments and higher current receipts.
- The share of short-term debt in total external debt fell marginally to 17.0 per cent at end-September 2021 from 17.7 per cent at end-March 2021.
- The foreign exchange reserves as a ratio to external debt crossed 100 percent after 11 years since 2010, and stood at 107.1 per cent as at end-September 2021.

- The ratio of short-term debt (original maturity) to foreign exchange reserves declined to 15.8 per cent at end-September 2021 from 17.5 per cent at end-March 2021.

Taper Without Tantrums: India's External Sector Resilience

- The Federal Reserve embarked on a programme of asset purchases under the Quantitative Easing (QE), as part of a broader policy response to the Global Financial Crisis in 2007-08.
- As the US economy gained traction, in an attempt to unwind the QE, on May 22, 2013, the Fed announced the intent to start tapering asset purchases at a future date, which triggered a tantrum in the form of spike in bond yields and resulted in disruptions on the external front for India as well.
- In response to the pandemic, the long-awaited taper process has commenced by the systemically important central banks, renewing thereby an element of interest - within the academia and policy circles - in the potentially destabilising spill-over impact on the emerging market and developing economies as also for India.
- There is evidence that, inter alia, these emerging markets, including India, have succeeded in strengthening their external economic and financial position since 2013 and the ramifications of the taper on the Indian external sector would be limited.
- Apart from being the 4th largest forex reserve holder, Indian economy stands guard with an added advantage of plenty of policy room for manoeuvring as the process of normalisation of monetary policy by systematically important central banks takes hold.

5. MONETARY MANAGEMENT AND FINANCIAL INTERMEDIATION

MONETARY DEVELOPMENTS

- The Monetary Policy Committee (MPC) maintained status quo on the policy repo rate during April to December 2021 after a substantial cut of 115 basis points (bps) during February- May 2020 and a cumulative 250 basis points cut since February 2019.
- **Repo rate** which currently stands at 4 per cent is lowest in the last decade.
- Since May 2020, the policy rates have been on hold along with an accommodative monetary policy stance with forward guidance that this stance will continue as long as necessary to revive growth on durable basis while ensuring that inflation remains within the target (CPI inflation of 4 per cent within a band of +/- 2 per cent).

Reserve Money and Broad Money

- The growth rates of monetary aggregates- including Reserve money, Broad money were lower as compared to last year.
- **Reserve money (M0)** recorded a year-on-year (YoY) growth of 13 per cent as in January 2022, as compared to 14.3 per cent a year ago.
- **Currency in Circulation (CIC)** grew by 7.8 per cent as on 7th January 2022, lower as compared to the previous year as precautionary demand for cash subsided.
- In 2021-22 so far, the YoY growth of **broad money (M3)** stood at 9.9 per cent as on 31st December, as compared to 12.5 per cent a year ago. From the component side, aggregate deposits which is the largest component - has contributed most to the expansion of M3 during the year so far.
- **YoY credit growth for Scheduled Commercial Banks** was 9.2 per cent as on 31st December 2021 as compared to 6.6 per cent a year ago, reflecting pick-up in credit.
- **Money multiplier – measured as a ratio of M3 to M0** has been on the decline since 2017-18. As on 31st March 2021, money multiplier (MM) stood at 5.2 from 5.6 a year ago.

LIQUIDITY CONDITIONS AND ITS MANAGEMENT

- Liquidity has remained in surplus in the system since mid-2019 coordinated with the easing of monetary conditions. The liquidity conditions were further eased during the year 2020-21 after the covid pandemic to support growth.
- The liquidity conditions remained in surplus in 2021-22.

Liquidity Adjustment Facility (LAF)

- In 2021-22 so far, the RBI engaged in rebalancing liquidity from passive absorption under fixed rate reverse repo under its Liquidity Adjustment Facility (LAF) to market based reverse repo auctions.
- The 14-day Variable Rate Reverse Repo (VRRR) auctions were deployed as the main operation under the LAF.
- Further, the cash reserve ratio (CRR) which was reduced by 100 basis points (bps) in March 2020, was gradually raised to its pre-pandemic level of 4 per cent by May 2021.

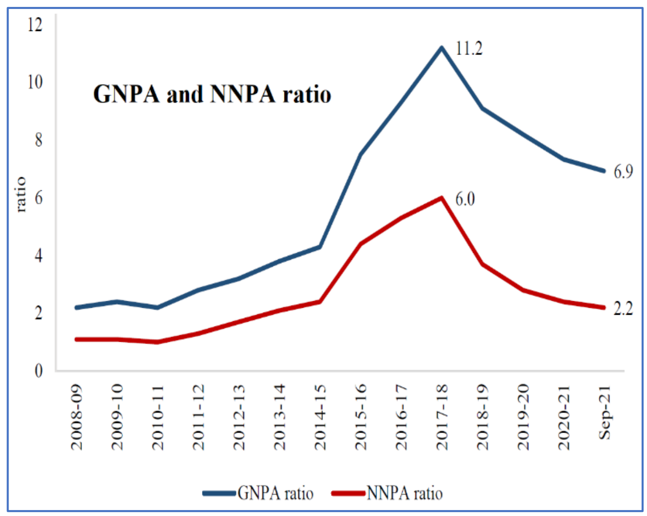
DEVELOPMENTS IN G-SEC MARKET

- The yields on 10-year G sec which had reached 8.2 per cent on 26th September 2018 reduced substantially to reach 5.75 per cent in June 2020. It has since then increased to stand at 6.45 per cent as on 31st December 2021.
- The term spread (measured as the gap between 10 year and 1-year G sec yield) had widened sharply in 2020, but has narrowed down slightly in 2021-22. However, it is still wider as compared to the pre-pandemic years.

G-sec Acquisition Programme (G-SAP)

- A secondary market G-SAP - which was announced during the year 2021-22 added to the surplus liquidity during the period.
- G-SAP involves upfront commitment to purchase a specific quantum of government securities with a view to enabling a stable and orderly evolution of the yield curve.

BANKING SECTOR



- The Gross Non-Performing advances (GNPA) ratio (i.e. GNPAs as a percentage of Gross Advances) and Net Non-Preforming (NNPA) ratio of Scheduled Commercial Banks (SCBs) continued to decline since 2018-19.
- GNPA ratio of SCBs decreased from 7.5 per cent at end- September 2020 to 6.9 per cent at end-September 2021.
- NNPA ratio of SCBs was 2.2 per cent at end-September 2021.
- Restructured Standard Advances (RSA) ratio of SCBs increased from 0.4 per cent to 1.5 per cent during the same period.
- Overall, the Stressed Advances ratio of SCBs increased from 7.9 per cent at end-September 2020 to 8.5 per cent at end-September 2021.
- The Capital Adequacy Ratio has continued to improve since 2015-16.
- Capital to Risk-weighted Asset Ratio (CRAR) of SCBs increased from 15.84 per cent at end-September 2020 to 16.54 per cent at end-September 2021 on account of its improvement for both public and private sector banks.
- Based on the capital position as on September 30, 2021, all Public Sector and Private Sector banks maintained the Capital Conservation Buffer (CCB) well over 2.5 per cent.
- Overall, for SCBs, the net profit increased from Rs. 59,426 crores at end-September 2020 to Rs. 78,729 crores at end-September 2021.

National Asset Reconstruction Company Limited

- To resolve the legacy NPAs and clean up the banking system, the Union budget 2021-22 announced the setting up on an Asset Reconstruction Company (ARC) Limited and Asset Management Company (AMC).
- Subsequently, National Asset Reconstruction Company Limited (NARCL) was incorporated in July 2021. NARCL will majorly be owned by Public Sector Banks. Canara bank is the Sponsor with shareholding of up to 12 per cent.

- India Debt Resolution Company Limited (IDRCL) was incorporated in 2021 and will have minimum of 51 per cent ownership of Private sector Banks and balance will be held by Public Sector Banks.
- NARCL and IDRCL's relationship will be defined through a debt management agreement where in NARCL will aggregate and acquire the stressed assets and IDRCL will provide stressed assets management and resolution services to NARCL on an exclusive basis.

MONETARY TRANSMISSION – BANK LENDING AND DEPOSIT RATES

- RBI has reduced repo rate by 250 bps since February 2019 (the current easing cycle).
- The Weighted Average Lending Rate (WALR) on fresh rupee loans declined by 197 basis points and by 133 bps on outstanding loans during the period February 2019 to November 2021.
- Large surplus systemic liquidity, forward guidance of continuing with the accommodative stance and the external benchmark system for pricing of loans in select sectors aided monetary transmission.
- The transmission has been slightly higher in public sector banks than private sector banks in the overall current monetary easing cycle.

Deposit Insurance in India

- The functions of the Deposit Insurance and Credit Guarantee Corporation (DICGC) are governed by the provisions of the DICGC Act, 1961 and the DICGC General Regulations, 1961.
- The Deposit Insurance and Credit Guarantee Corporation (Amendment) Act, 2021 made significant changes in the landscape of deposit insurance in India.

The following are the key features of the Amendment Act

- Interim payment will now be made by DICGC to depositors of those banks for whom any restrictions/ moratorium have been imposed by RBI under the Banking Regulation Act resulting in restrictions on depositors from accessing their own savings.
- Clear-cut timeline of maximum of 90 days has been fixed for providing interim payment to depositors.
- DICGC may defer repayments due to it from an insured bank after insurance pay out, on terms decided by DICGC's Board.
- To establish the priority of repayment to DICGC, a provision for penal interest in case of delay has been put in the act.
- Now, the ceiling on premium will be notified by DICGC, with the prior approval of RBI.

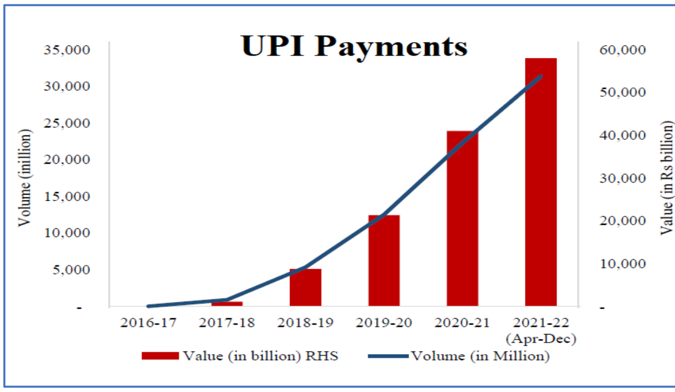
BANK CREDIT GROWTH

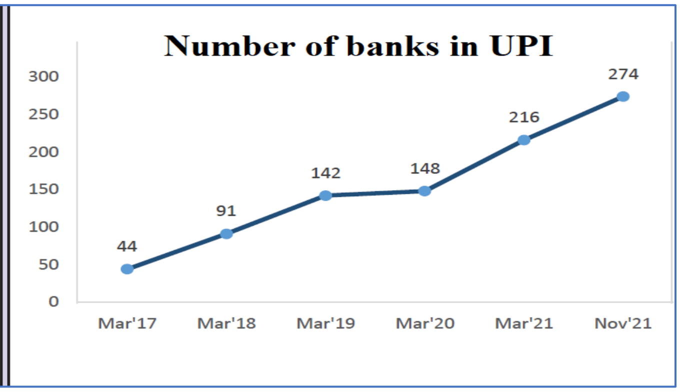
- The credit growth had been declining since 2019. The credit growth was 5.3 per cent at beginning of April 2021 and started to increase since then. However, it was still modest and stood at 9.2 per cent as in December 2021.
- In 2021-22, the risk capital (i.e. money raised from capital markets) has so far been more important than the banks in providing finance to the revival.
- Non-food bank credit growth has gradually improved and stood at 9.3 per cent as on 31st December 2021, as against 6.6 per cent a year ago. This growth was driven by personal loans and agriculture sector.
- Deceleration in credit growth in the services sector continued though credit to industry showed signs of improvement.
- Credit to agriculture continued to register robust growth, and was at 10.4 per cent (YoY) in November 2021, as compared with 7 per cent in November 2020.

- Growth in personal loans improved to double digits at 11.6 per cent in November 2021 as compared with 9.2 per cent in the previous year. Housing loans, the largest constituent of personal loans, registered growth of 8 per cent in November 2021.

DIGITAL PAYMENTS

- **Unified Payments Interface (UPI)** is currently the single largest retail payment system in the country in terms of volume of transactions, indicating its wide acceptance.
- In 2018, **'UPI as a payment option in IPO'** was introduced as a new payment channel to the retail investors by SEBI.
- RBI and the Monetary Authority of Singapore announced a project to link UPI and PayNow, which is targeted for operationalization by mid 2022.
- **Bhutan recently became the first country to adopt UPI standards for its QR code.** It is also the second country after Singapore to have BHIM-UPI acceptance at merchant locations.
- In Oct' 2021, RBI increased the daily limit of **Immediate Payment Service (IMPS)** transactions from Rs. 2 lakhs to Rs. 5 lakh which should further help in boosting digital payments.
- Another digital payment solution launched in August 2021, **e-RUPI** is a person-specific, and purpose-specific digital voucher where it is not required for the customer to have a bank account and is operable on basic phones, even in areas which lack an internet connection.





Digital Payments Index of RBI

- It captures the extent of digitization of payments across the country.
- The index captures (i) Payment Enablers (weight 25%), (ii) Payment Infrastructure – Demand-side factors (10%), (iii) Payment Infrastructure – Supply-side factors (15%), (iv) Payment Performance (45%) and (v) Consumer Centricity (5%).
- The Digital Payments Index increased from 100 in March 2018 (base period) to 304.06 in September 2021.

NON-BANKING FINANCIAL COMPANIES (NBFCS) SECTOR

- **The total credit of NBFC sector** increased marginally from Rs. 27.53 lakh crore in March 2021 to Rs. 28.03 lakh crore in September 2021.
- **The credit intensity of NBFCs,** measured by NBFC credit as a ratio of GDP has been rising consistently and stood at 13.7 at end March 2021.
- **Industry remained the largest recipient of credit** extended by NBFC sector, followed by retail loans & services.
- **GNPA ratio of NBFCs** was higher at 6.55 per cent at end-September 2021, as compared to 6.06 per cent at end-March 2021. However, their **net NPA ratio** remained at 2.93 per cent at end-September 2021 same as in

March 2021.

- As against the regulatory requirement of 15 per cent, **CRAR** for the NBFC sector stood at 26.64 per cent at end-September 2021.

Factoring In India

- Factoring is an important source of liquidity worldwide, especially for MSMEs.
- Factoring is a transaction where an entity sells its receivables (dues from a customer) to a third party (a 'factor' like a bank or NBFC) for immediate funds.
- All or part of invoice can be sold to a factor for getting money immediately at competitive interest rate. The factor then collects payments from the buyer of goods and earns a commission in the form of some interest.
- There are different types of factoring:
  - 'With recourse' factoring where seller has to pay back the advance obtained from the factor if buyer of goods fails to pay.
  - 'Without recourse' factoring where factor bears the risk of default in case of non-payment by buyer of goods.
- As per the Factoring Regulation Act 2011, four types of entities were allowed to engage in factoring business: Banks, Statutory Corporations, NBFCs (which have to obtain registration from RBI) and companies.
- Factoring Regulation (Amendment) Act, 2021 was enacted on the recommendations of UK Sinha Committee to liberalize the restrictive provisions in the Act.

DEVELOPMENT IN CAPITAL MARKETS

Equity

- Overall, during April-November 2021, Rs. 1.81 lakh crore have been raised through equity issues through diverse modes viz., public offerings, rights, Qualified Institutional Placements (QIP) and preferential issues.
- The year 2021-22 so far has been an exceptional year for the primary markets with a boom in fundraising through Initial Public Offerings (IPOs) by many new age companies/tech start-ups/unicorns.

Debt

- Overall, debt mobilization slowed, and this contrast with equity market suggest an increased appetite for risk among investors.
- In addition to equity and debt, corporates are also diversifying into a large number of new instruments such as hybrids & convertibles, Real Estate Investment Trusts (REITs), Infrastructure Investment Trusts (InvITs) etc

MSCI Emerging Markets Index and India's Weight

- A key aspect of Foreign Portfolio Investments (FPI) are global indices such as MSCI with over US$ 16.3 trillion (equity) assets benchmarked against them (as of June 30, 2021).
- One of the most popular MSCI indices is the MSCI Emerging Market (EM) index which tracks equity performance capturing large and mid-cap companies across 25 emerging market countries including India.
- In June 2017, MSCI had announced that beginning June 2018, China A-shares would be included in MSCI - EM index in a phased manner. This meant a gradual reduction in weights of all other countries.
- Consequently, India's weight in MSCI-EM index reduced from 9.32 per cent in August 2018 to 8.3 per cent

in August 2020.

Trends in Retail participation in the Capital Market

With continuing buoyant trend in Indian stock markets, participation by individual investors in equity cash segment has increased and the share of individual investors in total turnover at NSE increased from 38.8 per cent in 2019-20 to 44.7 per cent in April-October 2021.

Mutual Fund Activities

The net Assets Under Management (AUM) of mutual fund industry rose by 24.4 per cent to Rs. 37.3 lakh crore at the end of November 2021 from Rs. 30.0 lakh crore end of November 2020.

INVESTMENT BY FOREIGN PORTFOLIO INVESTORS (FPIs)

- During April-November 2021, FPIs made a net investment of Rs. 24,124 crores in Indian securities, 82.8 per cent lower that what was made in same period previous year.
- As of November 2021, cumulative net investment by FPIs increased by 9.2 per cent to US$ 288.4 billion from US$ 264 billion at end November 2020.

INDIAN BENCHMARK INDICES

- The benchmark stock market indices in India - **Sensex and Nifty 50**, increased by 17.7 per cent and 18.1 per cent, respectively during April-December 2021.
- Sensex and Nifty scaled up to touch its peak at 61,766 and 18,477 respectively on 18th October 2021.
- **India VIX**, which indicates market's expectation of volatility in near term i.e. next 30 calendar days, decreased 21.4 per cent during April-December 2021.

INSURANCE SECTOR

- Insurance penetration is measured as the percentage of insurance premium to GDP and insurance density is calculated as the ratio of premium to population (measured in US$ for convenience of international comparison).
- In India, **Insurance Penetration** was 2.71 per cent in 2001 and has steadily increased to 4.2 per cent in 2020. As of 2020, the penetration for life insurance in India is 3.2 per cent and non-life insurance penetration is 1 per cent.
- Globally, insurance penetration was 3.3 per cent for the life segment and 4.1 per cent for the non-life segment in 2020.
- The **Insurance Density** in India increased from $11.5 in 2001 to $78 in 2020. In 2020, density for Life insurance in India is $59 and non-Life insurance is $19, much lower than global standards.

PENSION SECTOR

- The total number of subscribers under **New Pension Scheme (NPS) and Atal Pension Yojana (APY)** increased from 374.32 lakhs as of September 2020 to 463 lakhs as on September 2021, recording a growth of 23.7 per cent over the year.
- The overall contribution under NPS grew by more than 29 per cent during the period September 2020 - September 2021.
- Maximum growth in contribution was registered under All Citizen model (51.29 per cent) followed by Corporate Sector (42.13 per cent), APY (38.78 per cent), State Government Sector (28.9 per cent), and

Central Government Sector (22.04 per cent).

- As on September 2021, more than 43 per cent subscribers in the APY scheme were between 18 and 25 years, as compared to 29 per cent as on March 2016.
- Female subscribers in APY have increased from 37 per cent as of March 2016; to 44 per cent as of September 2021.
- The limit of aggregate holding of equity shares by a foreign company in Pension Funds has been revised up from 49 per cent to 74 per cent.

INSOLVENCY AND BANKRUPTCY CODE, 2016 (IBC)

Insolvency and Bankruptcy (Amendment) Ordinance, 2020

- In view of the COVID-19 pandemic, the Insolvency and Bankruptcy (Amendment) Ordinance, 2020 was promulgated on 5th June 2020, which suspended initiation of the **Corporate Insolvency Resolution Process (CIRP)** of a corporate debtor (CD) for any default arising on or after 25th March 2020.
- Further, the suspension of the Code was extended twice for 3 months each on 24th September 2020 and 22nd December 2020, to provide relief to the firms undergoing stress due to the pandemic.

Outcomes Under The Code

Rescue of distressed assets	**•As of September 2021, the Code has rescued 421 Corporate Debtors (CDs) through resolution plans and referred 1419 CDs for liquidation.**
Liquidations	**•Till September 2021, 264 CDs have been completely liquidated which had outstanding claims of Rs. 45,790 crores.**
Time and cost	**•The 421 CIRPs, which have yielded resolution plans by the end of September 2021 took on average 428 days for the conclusion of the process. The cost works out on average to 0.98 per cent of liquidation value and to 0.54 per cent of resolution value.**
Behavioural Change	**•Thousands of debtors are resolving distress in the early stages of distress and making best effort to avoid consequences of the resolution process.**

IBC and Pre-packaged Insolvency Resolution Process For Corporate MSMEs

- The IBC was amended through an Ordinance in April 2021, to provide for a Pre-Packaged Insolvency Resolution Process (PPIRP) for corporate MSMEs as an alternative insolvency resolution process to ensure quicker outcomes.
- PPIRP has the rigour and discipline of the CIRP. It is informal up to a point and formal thereafter. It blends debtor-in-possession with creditor-in-control.
- It is neither a fully private nor a fully public process.
- It safeguards the rights of stakeholders as much as in CIRP and has adequate checks and balances to prevent any potential misuse.
- This process entails a limited role of the courts and insolvency professionals (IPs).

Voluntary Liquidation of Corporates

- Liquidation can be involuntary as in the case of insolvency or bankruptcy; or voluntary which could be due to personal reasons, subsidiaries being merged etc. A company may decide to voluntarily close its operation even when it's viable.

- Currently, there are two main methods of voluntary liquidation, one is through the Registrar of Companies (RoC) under section 248 of the Companies Act, 2013 and other is under the IBC. The former is currently the more popular route by far.
- There has been an overhaul in the process of winding-up due to the insolvency/ bankruptcy with the introduction of the IBC. However, the procedure of voluntary exit of business still needs to be simplified significantly, on top of recent progress.

Cross Border Insolvency

- At present, the IBC provides for the domestic laws for the handling of an insolvent enterprise. IBC at present has no standard instrument to restructure the firms involving cross border jurisdictions. This raises various issues.
- The Insolvency Law Committee (ILC) (October 2018) had recommended the adoption of the United Nations Commission on International Trade Law (UNCITRAL) with certain modifications to make it suitable to the Indian context.
- In fact, UNCITRAL on Cross-Border Insolvency, 1997 has emerged as the most widely accepted legal framework to deal with cross-border insolvency issues. It has been adopted by 49 countries until now, such as Singapore, UK, US, South Korea, etc.
- This law addresses the core issues of cross border insolvency cases with the help of four main principles:

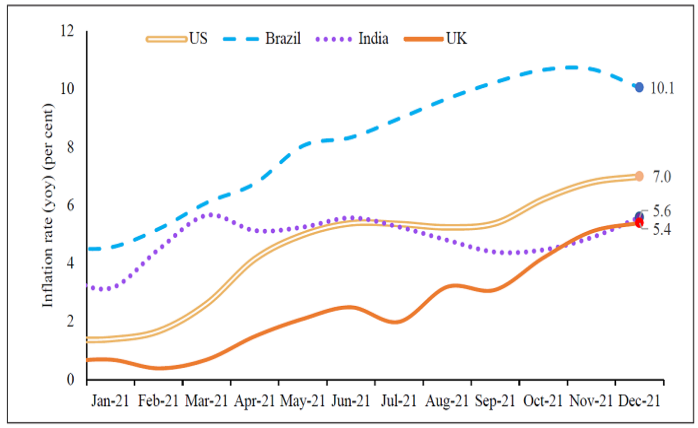
Access	Recognition	Cooperation	Coordination
• It allows foreign professionals and creditors direct access to domestic courts and enables them to participate in and commence domestic insolvency proceedings against a debtor.	• It allows recognition of foreign proceedings and enables courts to determine relief accordingly	• It provides a framework for cooperation between insolvency professionals and courts of countries.	• It allows for coordination in the conduct of concurrent proceedings in different jurisdictions.

6.PRICES AND INFLATION

GLOBAL INFLATION

- In 2021, inflation picked up globally as economic activity revived with opening-up of economies.
- In the advanced economies, inflation has increased from 0.7 per cent in 2020 to around 3.1 per cent in 2021 (IMF, 2022).
- Inflation in USA touched 7.0 per cent in December 2021, the highest since 1982, driven largely by second-hand vehicles and energy.
- Among emerging markets, Brazil witnessed high and rising inflation during 2021 which touched 10.1 per cent in December 2021.
- Inflation in Turkey has been in double digits, reaching 36.1 per cent in December 2021.

Consumer Price Inflation in select countries



Source: Organisation for Economic Co-operation and Development; Office for National Statistics, UK

- Argentina has witnessed inflation rates above 50 per cent during the last six months.

Reasons

- COVID-19 related stimulus spending, mainly in the form of discretionary handouts to households in major economies, along with pent up demand fuelling consumer spending, pushed inflation up in both advanced and emerging economies.
- The surge in energy, food, non-food commodities, and input prices, supply constraints, disruption of global supply chains, and rising freight costs across the globe stoked global inflation during the year.
- Crude oil prices also witnessed an upswing during the year on the back of increased demand from recovering economies and supply cuts by the Organization of the Petroleum Exporting Countries and its allies (OPEC+).

DOMESTIC INFLATION

Retail Inflation

- In comparison to many Emerging Markets and Developing Economies (EMDEs) and advanced economies, consumer price inflation in India remained range bound in the recent months, touching 4.9 per cent in November 2021 and 5.6 per cent in December 2021.
- Retail inflation, as measured by Consumer Price Index-Combined (CPI-C) inflation, in India, which was slightly above 6 per cent in 2020-21 owing to supply chain disruptions caused by COVID-19 restrictions, lockdowns, and night curfews, moderated during the current financial year. Retail inflation during 2021-22 (April-December) stood at 5.2 per cent.

Wholesale Inflation

- Wholesale inflation, based on Wholesale Price Index (WPI), after remaining benign during the previous financial years, saw a sharp uptick during 2021-22 (April-December).

- A part of the observed rise in wholesale inflation could be attributed to the low base in the previous year. However, rising input costs and global commodity prices also contributed to the rise in wholesale prices.

CURRENT TRENDS IN INFLATION AND ITS DRIVERS

Recent Trends In Retail Inflation

- The average retail inflation which was 4.8 per cent in 2019-20, inched up to 6.2 per cent in 2020-21, on account of COVID-19 related supply chain disruptions and stalled economic activity due to lockdown.
- Since July 2021, retail inflation is well within the tolerance band of targeted limit of 4 per cent +/- 2 percentage points set by the Government for the period April 1, 2021- March 31, 2026.
- In 2021-22, the decline in retail inflation was led by easing of food inflation. Food inflation, as measured by the Consumer Food Price Index (CFPI), averaged at a low of 2.9 per cent in 2021-22 (April to December), as against 9.1 per cent in the corresponding period last year. Food inflation declined between July and September 2021.

Core Inflation

- During the current financial year, retail core inflation (inflation excluding 'food and beverages' and 'fuel and light' – the transitory components of the index) has shown a rising trend.
- Conventionally, core inflation is calculated by excluding 'food and beverages' and 'fuel and light' groups from overall inflation.
- In CPI-C, major fuel items such as 'petrol for vehicle' and 'diesel for vehicle', which have relatively large weights, are not included in 'fuel and light'. These fuel items are included in 'transport and communication', a subgroup under the miscellaneous group.
- Therefore, conventional way of calculating retail core inflation, instead of excluding the volatile fuel items from core inflation, continue to include volatile fuel items in core inflation. As a result, the fuel price rise continues to impact core inflation.

'Refined' Core Inflation

- A 'refined' core inflation was constructed to address this anomaly by excluding main fuel items viz., 'petrol for vehicle', 'diesel for vehicle' and 'lubricants and other fuels for vehicles',
- in addition to 'food and beverages' and 'fuel and light' from the headline retail inflation.
- Since June 2020, refined core inflation has been much below the conventional core inflation, indicating the impact of inflation in fuel items in the conventional core inflation measure.

What Has Driven Retail Inflation And Why?

- Unlike 2020-21 (April-December) when 'food and beverage' drove inflation, during 2021-22 (April to December) the major drivers of retail inflation have been miscellaneous and 'fuel and light' group.
- Contribution of miscellaneous group has increased from 26.8 per cent in 2020-21 (April-December) to 35 per cent in 2021-22 (April-December) and contribution of 'fuel and light' increased from 2.3 per cent to 14.9 per cent.
- On the other hand, during the same period, contribution of 'food and beverages' declined from 59 per cent to 31.9 per cent. Within 'miscellaneous group', sub-group 'transport and communication' contributed the most, followed by health.
- Inflation in protein-based items like 'meat and fish' remained considerably elevated during 2021-22 (April to December), due to COVID-19 related supply disruptions and high poultry feed prices owing to high prices of soybean meal.
- 'Oils and fats' contributed around 60 per cent of 'food and beverages' inflation despite having a weight of

only 7.8 per cent in the group.

- India imports around 60 per cent of its consumption of edible oils', and Palm oils (Crude + Refined) constitutes around 60 per cent of the imports of edible oils. As a result, fluctuation in imports and international prices transmit to domestic prices of edible oil.

Seasonality And Irregularity In The Retail Prices Of Tomato And Onion

- Seasonality in production and irregular shocks are two important components contributing to the variations in prices of agriculture commodities, more so in prices of perishable commodities such as tomato and onion.
- Seasonality in prices is a result of the varying pattern of production of these commodities during different months of a year.
- On the other hand, shocks often originate from uncertain weather conditions and other unpredictable events. Distinguishing between these two, however, is important as policy can be oriented at least towards addressing the more certain seasonal pattern of price rise.

Retail Prices Of Tomato And Onion

- Both seasonal as well as shock components contribute to the spikes of the tomato and onion prices. Seasonality in prices resulting from seasonal production patterns require policy attention.
- Strategies to incentivize production during lean season should be designed. Investments in processing of surplus production of tomato, and processing and storage infrastructure of onion must be promoted. Cutting wastage of the production, better supply chain management will also help in meeting the demand.

Measures by Government to Overcome These Challenges

- The Mission for Integrated Development of Horticulture (MIDH) envisages holistic development of horticulture and provides assistance at 50 per cent of total cost of Rs. 1.75 lakh per unit for low-cost onion storage structure having a capacity of 25 tonne each.
- Schemes such as Agricultural Marketing Infrastructure (AMI) for rural godowns enables small farmers to enhance their holding capacity to sell their produce at remunerative prices and avoid distress sale.
- Kisan Rail service, was launched on 7th August 2020 to enable speedy movement of perishables including fruits, vegetables, meat etc.

Steps By the Government to Augment The Supply Of Essential Commodities

- To augment domestic availability of pulses, Tur and Urad are kept under 'free' import category till 31st March, 2022.
- Basic import duty and Agriculture Infrastructure and Development Cess on Masur have been brought down to zero and 10 per cent respectively.
- To soften the prices of edible oils, the duty on edibles oil has been reduced with effect from 14th October 2021.
- Futures trading in mustard oil on NCDEX has been suspended and stock limits have been imposed.
- Government has notified an Order under the Essential Commodities Act to declare 'Soya Meal' as an Essential Commodities up to 30th June, 2022 by amending the Schedule of the Essential Commodities Act, 1955. Stock limit on Soya Meal has been imposed for a period from 23rd December, 2021 up to 30th June, 2022.

Liquified Petroleum Gas (LPG) price trend

- Prices of LPG in the country are based on **Saudi Contract Price (CP)**, the benchmark for international prices of LPG. Saudi CP has risen approximately 258 per cent from April, 2020 to November, 2021 (236 USD to 846 USD).

- LPG subsidy is governed under **Direct Benefit Transfer for LPG consumers (DBTL) scheme**, wherein the subsidy on domestic LPG is regulated based on direction of price trends in international market.
- In order to provide clean cooking fuel to poor households, in May 2016 the Government launched "Pradhan Mantri Ujjwala Yojana" (PMUY) scheme to provide 5 crore deposit-free LPG connections, subsequently increased to 8 crores. The target of Scheme was achieved in September, 2019, 7 months ahead of the target.
- In its revised version, Pradhan Mantri Ujjwala Yojana was launched as Ujjwala 2.0, in August 2021. While it covers all existing eligible categories of beneficiaries, Ujjwala 2.0 makes specific relaxations for migrants. Also, free first refill and stove are being provided to all Ujjwala 2.0 beneficiaries.

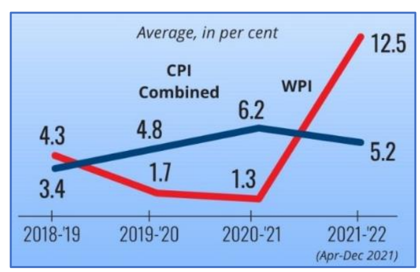
Kerosene Price Trend

- Government has decided to phase out use of kerosene for cooking and lighting in view of the increasing coverage of electricity for lighting needs and LPG as a clean cooking fuel.
- Post Saubhagya (Pradhan Mantri Sahaj Bijli Har Ghar yojana) and Pradhan Mantri Ujjwala Yojana the use of kerosene is steadily going down.
- Out of 37 states/UTs, 11 states/UTs2 are kerosene free i.e no PDS Kerosene is allocated to these states/UTs by Ministry of Petroleum and Natural Gas (MOP&NG).
- Kerosene is distributed through PDS and is sold at market price with zero central subsidy.

Trends In Wholesale Price Index Based Inflation

- WPI inflation during the current financial year, in contrast to the trends observed in CPI-C inflation, has shown an increasing trend, and remained high.
- WPI inflation has been benign during 2020-21 and 2019-20 while being moderate or low in the preceding years. Therefore, part of the high inflation in WPI being witnessed currently could be because of a low base in the previous year.
- Within the primary articles group, 'crude petroleum & natural gas' sub-group has witnessed very high inflation and stood at 55.7 per cent in December 2021.
- Similarly, minerals have witnessed high inflation throughout the year. Impact of rising international prices in WPI manufacturing was clearly visible, especially in manufacture of basic metals.

Divergence Between WPI and CPI Based Inflation Rates



- In December 2021, WPI based inflation rate was 8 percentage points higher than the retail inflation. Why is CPI inflation diverging from WPI inflation with WPI inflation being higher than CPI inflation?
- The high WPI based inflation rate in 2021, is largely attributable to the low base of the preceding year.
- On the other hand, retail inflation that had remained high during 2020-21 due to supply chain disruptions and high food inflation, moderated in 2021-22 on account of effective supply side management, resulting in a divergence between WPI and CPI based inflation.
- Also, the weights and the importance of specific commodity groups vary significantly in the CPI and WPI. While in CPI, food and beverages have the highest weight (45.9), in WPI, the manufactured group has the highest weight (64.2).

HOUSING PRICES

Impact of COVID-19

- Amidst initial COVID-19 restrictions, not only construction of new houses slowed down, but launch of new housing projects also got delayed.

- With the loss of income, uncertainty about future income, and stay at home orders, home buyers delayed their housing purchases.
- After the initial COVID-19 induced restrictions were removed, transactions in housing properties increased significantly, possibly because of pent up demand and improvement in affordability in response to measures taken by government during the pandemic, such as lower interest rates, reduction in circle rates, and cut in stamp duties, which made houses affordable to buyers.
- Besides, several major banks, mortgage companies, and housing finance companies have significantly reduced their interest rates on home loans, which fuelled the revival in housing demand.

NHB RESIDEX

- NHB RESIDEX tracks the movement in prices of residential properties in select cities on quarterly basis.
- National Housing Bank (NHB) RESIDEX HPI @ Assessment Prices index (Base 2017- 18) captures the prices of residential housing properties for the transactions through primary lending institutions.
- Data on composite index for prices and transaction records from NHB have been used to analyze the impact of first and second COVID-19 wave on the housing transactions and prices across a sample of 12 cities.
- It can be broadly observed that the response of housing transactions to COVID-19 shock is much higher than the response of housing prices. This implies that shocks to housing sector adjust more through changes in transactions than prices.
- Further, decline in housing transactions have also been much less during second COVID-19 wave than the decline during first COVID-19 wave.
- Between two COVID-19 waves, from June 2020 to April 2021, housing transactions recovered swiftly, as quarterly purchases crossed even the pre-pandemic levels for all the selected cities.
- This boost in housing demand is possibly because of pent up demand and measures taken by the government to increase affordability. The number of unsold residential units have also witnessed significant drops during the second wave of the pandemic.

Recent Measures Taken By Government To Enhance Housing Affordability

- Reduction in circle rates and stamp duties by various state governments like Delhi, West Bengal, Maharashtra to boost housing sales.
- Eligibility for tax deductions for affordable housing announced in the 2019-20 budget has been extended till March 2022.
- **Pradhan Mantri Awas Yojana – Urban (PMAY-U)** aims to address urban housing shortage among the Economically Weaker Section (EWS)/Low Income Group (LIG) and Middle-Income Group (MIG) categories including the slum dwellers by ensuring a pucca house to all eligible urban households by the year 2022.
- **The Credit Linked Subsidy Scheme for Middle Income Group** (annual Income between Rs 6 - 18 lakhs) being implemented since January 2017, was extended up to March 2021 to benefit 2.5 lakhs middle income families with targeted investment of over Rs 70,000 crore in housing sector under the Atma Nirbhar Programme announced in May 2020.

PHARMACEUTICAL PRICING

- Government regulates pricing of drugs to ensure availability and accessibility of medicines at affordable prices. National Pharmaceutical Pricing Authority (NPPA), an attached office of the Department of Pharmaceuticals (DoP), is mandated to regulate the prices of drugs.
- Ceiling prices for 355 medicines and 886 formulations were fixed for medicines under National List of

Essential Medicines, 2015 (Schedule-I of Drug Price Control Order (DPCO), 2013) until 31 December 2021.

- NPPA also capped the trade margin up to 30 per cent on selected 42 anti-cancer non-schedule medicine on pilot basis in February, 2019.

COVID-19 Initiatives

- Based on recommendations of Standing Committee on Affordable Medicines and Health Products (SCAMHP), NITI Aayog, NPPA capped the trade margin for Oxygen Concentrators at 70 per cent on Price to Distributor (PTD) level on 3rd June 2021.
- Most of drugs used for COVID management are scheduled drugs for which ceiling price has been given by NPPA.
- Even in the case of a few non-scheduled medicines like Remdesivir, which are part of COVID-19 protocol, on Government intervention, MRPs of various brands of Remdesivir have been reduced voluntarily by the major manufacturers/marketers.

LONG TERM PERSPECTIVE FOR MANAGEMENT OF SUPPLY SIDE FACTORS

Given the importance of supply-side factors in having a predominance in determination of inflation in India, long-term policies are likely to help.

- **Changing Production Patterns**

  Encouraging farmers to shift from cultivation of rice and wheat to pulses and oilseeds would help ensure that the country is self-reliant in pulses and oilseeds and also assist in reducing import dependence.

- **Calibrated Import Policy**
  - A step in this direction has been taken by the government where five year MoUs have been signed with Myanmar for annual import of 2.5 LMT of Urad and 1 LMT of Tur, with Malawi for annual import of 1 LMT of Tur, and MoU with Mozambique for annual import of 2 LMT Tur has been extended by another five years.
  - These MoUs will ensure predictability in the quantity of pulses being produced abroad and exported to India, thus benefiting both India and the pulse exporting country.
- **Transportation and Storage Infrastructure For Perishable Commodities**
  - Better storage and supply chain management is required to ensure availability in lean season and reduced wastages of horticulture and other perishable essential commodities.
  - Effective utilisation of Agriculture Infrastructure Fund for investment in viable projects for post-harvest management infrastructure for perishable commodities can help improve agriculture infrastructure in the country.
  - Schemes like Operation Green and Kisan Rail need to be exploited further.

7. SUSTAINABLE DEVELOPMENT & CLIMATE CHANGE

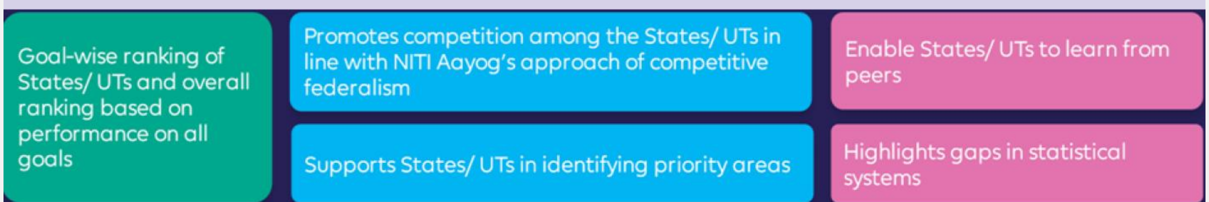
INDIA'S PROGRESS ON SUSTAINABLE DEVELOPMENT GOALS (SDGs)

- India's overall score on the NITI Aayog SDG India Index & Dashboard improved to 66 in 2020-21 from 60 in 2019-20 and 57 in 2018-19, showing progress in India's journey towards achieving the SDGs.
- Despite 2020-21 being a pandemic year, *India performed well on eight of the 15 SDGs measured by the NITI Aayog SDG India Index*.
- These included – *Goal 3 (good health and well-being), goal 6 (clean water and sanitation), Goal 7 (affordable and clean energy), Goal 10 (reduced inequalities), Goal 11 (sustainable cities and communities), Goal 12 (responsible consumption and production), Goal 15 (life on land) and Goal 16 (peace, justice, and strong institutions)*.

NITI Aayog SDG India Index

- NITI Aayog SDG India Index is the *world's first government-led sub-national measure of SDG progress*.
- NITI Aayog has been publishing the SDG India Index annually since 2018.
- Overall state and UT scores are generated from goal-wise scores to measure aggregate performance of the sub-national unit based on its performance across the 16 SDGs.
- These scores range between 0–100, with states/UTs being categorised as Aspirant (score 0-49), Performer (score 50-64), Front Runner (65-99) and Achiever (score 100) based on their score.

Evolution of the NITI Aayog SDG India Index



Baseline report – 2018	V2.0 report – 2019-20	V3.0 report – 2020-21
13 goals	16 goals + qualitative analysis on goal 17	16 goals + qualitative analysis on Goal 17
39 targets	54 targets	70 targets
62 indicators	100 indicators	115 indicators
Goal-wise ranking on States/ UTs	Goal-wise ranking on States/ UTs + State/ UT profiles	Goal-wise ranking on States/ UTs + State/ UT profiles
Preceded National Indicator Framework (NIF)	Aligned with NIF: 68 indicators completely aligned, 20 refined, 12 new to cover goals 12, 13, and 14	Aligned with NIF: 76 indicators completely aligned, 31 refined, 8 in consultation with the line ministries

Performance of States and UTs on the NITI Aayog SDG India Index, 2021

- The number of Front Runners (scoring 65-99) increased to 22 states and UTs in 2020-21 from 10 in 2019-20. All remaining states and UTs were Performers (scoring 50- 64).
- Amongst states, additions to the Front Runner category in 2020-21 included Uttarakhand, Gujarat,

Maharashtra, Mizoram, Punjab, Haryana and Tripura.

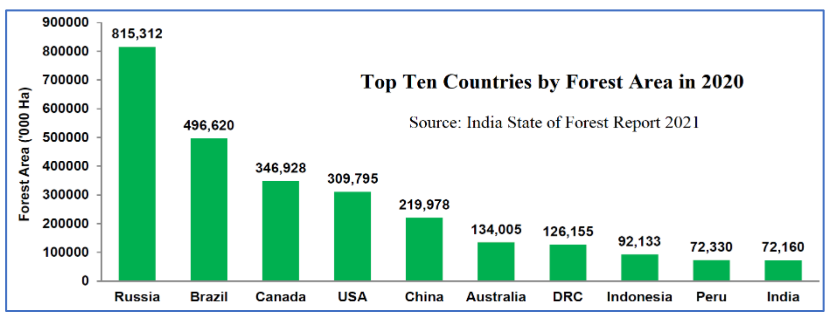
- Amongst UTs, additions to the Front Runner category included Andaman and Nicobar Islands, Delhi, Jammu and Kashmir, Ladakh and Lakshadweep.
- Kerala (score of 75) retained its top rank amongst states in 2020-21.
- Tamil Nadu and Himachal Pradesh ranked second while Goa, Uttarakhand, Karnataka and Andhra Pradesh ranked fourth.
- Mizoram, Haryana, and Uttarakhand are the top gainers in 2020-21, in terms of improvement in score from 2019, with an increase of 12, 10 and 8 points respectively.
- Chandigarh (score of 79) retained its top rank amongst UTs in 2020-21 while Puducherry, Lakshadweep and Delhi (score of 68) ranked second. Puducherry made the highest gain (nine points) in 2020-21, followed by Delhi, Jammu and Kashmir and Ladakh (seven points each).

North-Eastern Region (NER) District SDG Index 2021-22

- North-Eastern Region (NER) District SDG Index 2021-22, developed by NITI Aayog, is constructed from 84 indicators and covers 15 global goals, 50 SDG targets and 103 districts in the eight states of the North-Eastern Region.
- The score for the 103 districts ranges from 75.87 in East Sikkim (Sikkim) to 53.00 in Kiphire (Nagaland). There are 64 districts in the Front Runner category and 39 districts in the Performer category. All districts of Sikkim and Tripura fall in the Front Runner category.

STATE OF THE ENVIRONMENT: LAND FORESTS

- Forest Area refers to area recorded as forest in government records and is similar to "Recorded Forest Area".
- Russia, Brazil, Canada, USA and China were the top five largest countries by forest area in 2020, while India was the tenth largest country by forest area.



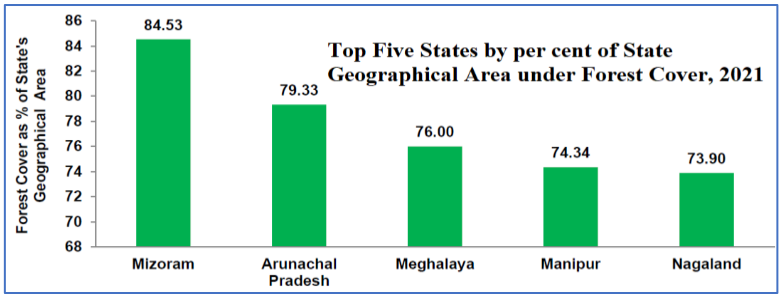
- Forests covered 24 per cent of India's total geographical area. Brazil (59 per cent), Peru (57 per cent), Democratic Republic of Congo (56 per cent) and Russia (50 per cent) have half or more of their total geographical area under forests.
- India ranks third globally in average annual net gain in forest area between 2010 to 2020, adding approximately 0.38 per cent of the 2010 forest area every year between 2010 to 2020.

Forest Cover in India

- Forest cover comprises all lands, more than one hectare in area, with a tree canopy density of more than 10 per cent, irrespective of ownership and legal status.
- Such lands may not necessarily be a recorded forest area, and include orchards, bamboo and palm plantations.
- India's total forest cover was 7,13,789 sq km in 2021 reflecting an increase of 3.14 per cent in the forest cover over 2011, from 21.05 per cent of the country's geographical area in 2011 to 21.71 per cent in 2021.
- This increase in total forest cover is attributed to increase in very dense forest (all lands with tree canopy density of 70 per cent and above), which rose by 19.54 per cent between 2011 and 2021.
- Open forest (all lands with tree canopy density between 10-40 per cent) also improved by 6.71 per cent,

while moderately dense forest (all lands with tree canopy density between 40-70 per cent) declined by 4.32 per cent between 2011 and 2021.

Scenario in States



- Amongst states, *Madhya Pradesh (11 per cent of India's total forest cover) had the largest forest cover in India* in 2021, followed by Arunachal Pradesh (9 per cent), Chhattisgarh (8 per cent), Odisha (7 per cent) and Maharashtra (7 per cent).
- *Mizoram* (85 per cent), Arunachal Pradesh (79 per cent), Meghalaya (76 per cent), Manipur (74 per cent) and Nagaland (74 per cent) were the top five states in terms of highest per cent of forest cover w.r.t. total geographical area of the state in 2021
- Arunachal Pradesh accounted for 21 per cent of India's very dense forest in 2021, followed by Maharashtra (9 per cent), Odisha (7 per cent), Chhattisgarh (7 per cent) and Madhya Pradesh (7 per cent).
- Madhya Pradesh and Chhattisgarh accounted for 11 per cent of India's moderately dense forest in 2021, followed by Arunachal Pradesh (10 per cent), Odisha (7 per cent) and Karnataka (7 per cent).
- Madhya Pradesh accounted for 12 per cent of India's moderately dense forest in 2021, followed by Odisha (8 per cent), Maharashtra (7 per cent), Chhattisgarh (5 per cent) and Assam (5 per cent).

STATE OF THE ENVIRONMENT: PLASTIC WASTE MANAGEMENT

- In 2018, PM Modi announced that India would *phase-out single use plastic by 2022*.
- *Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016* as amended regulate the import of identified plastic waste into the country by SEZ and EOUs.
- India piloted a resolution on ''Addressing Single Use Plastic Product Pollution'' which was adopted by the Fourth United Nations Environment Assembly held in 2019.
- In August 2021, the Ministry of Environment, Government of India, notified the *Plastic Waste Management Amendment Rules, 2021* prohibiting identified single use plastic items, which have low utility and high littering potential, by 2022.
- In order to stop littering due to light-weight plastic carry bags, the thickness of plastic carry bags has been *increased from 50 microns to 75 microns* with effect from September 30, 2021 and to 120 microns with effect from December 31, 2022.
- The Government has also been taking measures for awareness generation towards elimination of single use plastics and effective implementation of Plastic Waste Management Rules, 2016.

STATE OF THE ENVIRONMENT: WATER

Ground Water

- The annual ground water recharge has remained similar during 2004-2020 (except in 2013).
- Overall, the annual ground water extraction has been in the range of 58-63 per cent during this period.
- Over-exploitation of ground water resources, i.e. extraction exceeding the annually replenishable ground water recharge is concentrated in north-west and parts of southern India.

Reservoirs

- Reservoir live storage is at its peak during monsoon months and lowest in summer months, requiring careful planning and coordination of storage, release and utilization of reservoirs.

Rivers

- The Ganga River Basin is the largest river basin in India, covering more than a quarter of country's land area, hosting about 43 per cent of its population and contributing 28 per cent of India's water resources.
- In recognition of River Ganga's economic, environmental and cultural value, the Government of India declared River Ganga as the National River in 2008.
- The Clean Ganga Fund (CGF) was established in 2014 with the objective of contributing to the national effort of improving the cleanliness of river Ganga with the contributions received from the residents of the country, NRIs/ PIO, corporates and organizations.

Namami Gange Mission

- The Namami Gange Mission aims to protect, conserve and rejuvenate the Ganga River Basin.
- In 2015, the Cabinet approved the Mission for a period of five years (2015-2020) with a budget outlay of Rs. 20,000 crores.
- The National Mission for Clean Ganga (NMCG) is the nodal agency responsible for monitoring and implementing the Namami Gange Mission.
- The activities undertaken as part of the Mission rest upon four pillars –Nirmal Ganga (Unpolluted Flow), Aviral Flow (Continuous Flow), Jan Ganga (People-River Connect) and Gyan Ganga (Research and Knowledge Management).

STATE OF THE ENVIRONMENT: AIR

- **National Clean Air Programme (NCAP):** It was launched by the Government of India in 2019 to tackle the air pollution problem in a comprehensive manner, with a target to achieve 20-30 per cent reduction in particulate matter (PM) concentrations by 2024 across the country keeping 2017 as the base year for the comparison of concentration.
- **Vehicular Emission:** India has leap frogged from BS-IV to BS-VI norms for fuel and vehicles since April, 2020. Metro rail networks for public transport have been enhanced and more cities have been covered. Cleaner/alternate fuels like CNG, LPG and ethanol blending in petrol have been introduced.
- **Industrial Emission:** There is ban on use of imported pet coke in the country since July 2018, with exception for permitted processes. Brick kilns have been shifted to zig-zag technology to reduce pollution.
- **Air Pollution due to dust and burning of waste:** Six waste management rules covering solid waste, plastic waste, e-waste, bio-medical waste, construction and demolition waste and hazardous waste have been notified. Burning of biomass/garbage has been banned.

- **Monitoring of Ambient Air Quality:** Air Quality Early Warning System, which provides alerts for taking timely actions, is being implemented in Delhi, Kanpur and Lucknow.
- **To control emissions from stubble burning,** a Central Government Scheme on 'Promotion of Agricultural Mechanization for in-situ management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' has been launched.
- **All diesel vehicles older than 10 years and all petrol vehicles older than 15 years** have been banned in Delhi and NCR.

CLIMATE CHANGE

- India launched the National Action Plan on Climate Change (NAPCC) in 2008, establishing eight National Missions. These are:
  - National Solar Mission (NSM)
  - National Mission for Enhanced Energy Efficiency (NMEEE)
  - National Mission for a Green India (GIM)
  - National Mission on Sustainable Habitat (NMSH)
  - National Water Mission (NWM)
  - National Mission for Sustainable Agriculture
  - National Mission for Sustaining Himalayan Ecosystems
  - National Mission on Strategic Knowledge for Climate Change (NMSKCC)
- Climate Change Action program (CCAP) is a central sector scheme, which has now been extended up to 2025-26.
- It consists of eight broad sub-components including the National Action Plan on Climate Change (NAPCC) coordination, State Action Plan on Climate Change (SAPCC), National Carbonaceous Aerosols Programme (NCAP) etc.
- India has announced the National Hydrogen Mission for generating hydrogen from green energy sources.
- In 2021, PM Modi announced 20 per cent ethanol blending in petrol by 2025.
- Indian Railways has set a target of Net Zero Carbon Emission by 2030.
- India has launched the Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyan (PM-KUSUM) Scheme to provide energy and water security, de-dieselise the farm sector and generate additional income for farmers by producing solar power.

COP26 Climate Summit, Glasgow

- The 26th Session of the Conference of the Parties (COP 26) to the UNFCCC was held under the UK Presidency in Glasgow from 31st October – 13th November 2021.
- The COP26 adopted outcomes on all pending issues of the "Paris Rule Book", which is the procedures for implementation of the Paris Agreement, including market mechanisms, transparency, and common timeframes for NDCs.
- The "Glasgow Climate Pact" emphasizes adaptation, mitigation, finance, technology transfer, capacity-building, loss and damage.
- COP26 also welcomed the launch of a comprehensive two-year Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation.

India's NDC

- India submitted its Nationally Determined Contribution (NDC) under the Paris Agreement on a "best effort basis" keeping its developmental imperatives in mind.
- India committed to:
  - reduce the emission intensity of GDP by 33 to 35 per cent by 2030 as compared to 2005 level;
  - create an additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover by 2030; and
  - achieve about 40 per cent cumulative electric power installed capacity from non-fossil fuel energy resources by 2030.

FINANCE FOR SUSTAINABLE DEVELOPMENT

Dealing With Financial Risks associated with Climate Change

In May 2021, Reserve Bank of India (RBI) set up a new unit–'*Sustainable Finance Group' (SFG)* within its Department of Regulation to effectively counter these risks, and for leading the regulatory initiatives in the areas of sustainable finance and climate risk.

Augmenting Finance for Sustainable Development

- In January 2021, a *Task Force on Sustainable Finance* has been set up by the Department of Economic Affairs, Ministry of Finance, Government of India.
- RBI joined the *Central Banks and Supervisors Network for Greening the Financial System (NGFS)* as a member in April 2021 and has begun participating in the work streams of the NGFS.
- *RBI is a member of a Task Force on Climate-related Financial Risks set up by the Basel Committee on Banking Supervision, and the International Platform on Sustainable Finance*.
- In October 2021, RBI has also been featured in the first Annual Report on Sustainable Financial Regulations and Central Bank Activities published by the Worldwide Fund for Nature.

Investing in Resilience for Sustainable Development

- In May 2021, SEBI issued new sustainability reporting requirements as per the Business Responsibility and Sustainability Report (BRSR) which shall replace the existing Business Responsibility Report (BRR) to bring in greater transparency through disclosure of Environmental, Social and Governance (ESG)-related information.
- BRSR shall be applicable to the top 1000 listed entities (by market capitalisation) on a mandatory basis from FY 2022–23; however, entities can choose to adopt it on a voluntary basis from FY 2021–22.

INDIA'S INITIATIVES AT THE INTERNATIONAL STAGE

Lifestyle for Environment (LIFE)

In November 2021, PM Modi proposed a One-Word Movement in the context of climate change: LIFE - Lifestyle for Environment, at the COP 26 in Glasgow.

International Solar Alliance (ISA)

- In November 2021, PM Modi launched the joint *Green Grids Initiative- One Sun One World One Grid (GGI – OSOWOG)* at the World Leaders' Summit in Glasgow. A joint *GGI-OSOWOG Secretariat* is being planned to be established at the ISA Secretariat.
- ISA has attained a Permanent Observer Status at the UN General Assembly.
- ISA is mandated to facilitate mobilization of USD 1 trillion in solar investments by 2030 for massive scale-up of solar energy deployment.

- The Strategic Plan of the ISA for 2021-2026 identifies three key global issues – *Energy Access, Energy Security, and Energy Transition*.

Coalition for Disaster Resilient Infrastructure (CDRI)

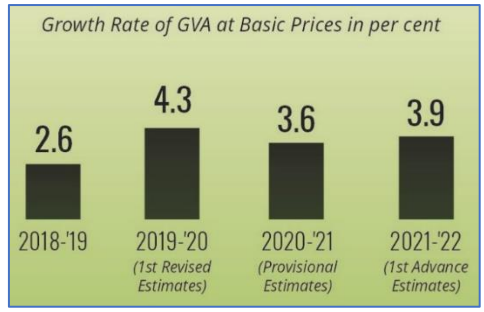
- Since CDRI's launch in September 2019, its membership has expanded to 28 countries and seven multilateral organizations.
- In March 2021, Prime Ministers of India, UK, Italy and Fiji launched the third International Conference on Disaster Resilient Infrastructure (ICDRI), which discussed key global issues around resilience of critical infrastructure sectors
- In November 2021, *Prime Ministers of India, UK, Australia, Fiji, Jamaica and Mauritius launched the Infrastructure for Resilient Island States (IRIS)*. This is a dedicated initiative for Small Island Developing States (SIDS)

Leadership Group for Industry Transition (LeadIT Group)

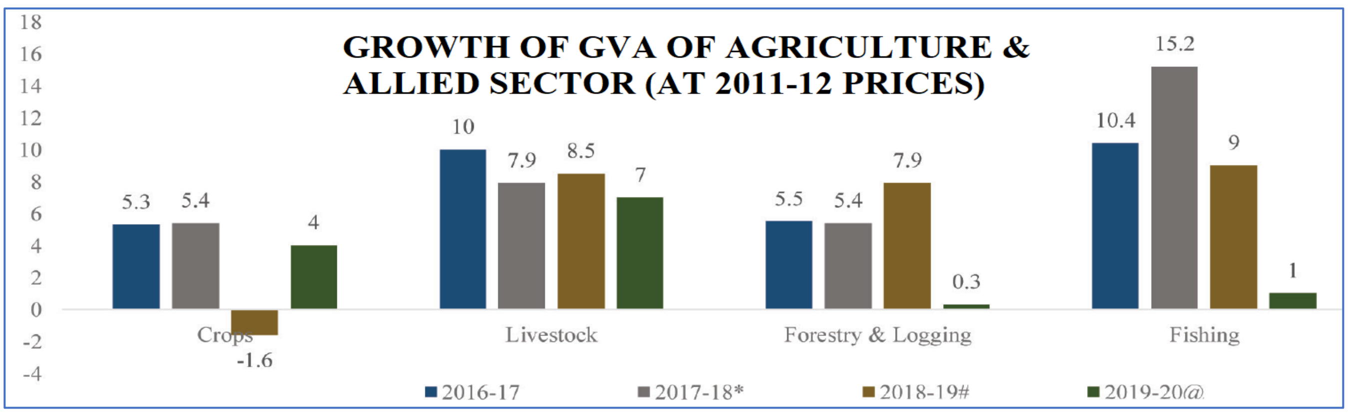
LeadIT was *launched by India and Sweden, with the support of the World Economic Forum* at the UN Climate Action Summit in New York in 2019, as one of the nine action tracks identified by the UN Secretary-General to boost climate ambitions and actions to implement the Paris Agreement.

8. AGRICULTURE & FOOD MANAGEMENT

INTRODUCTION



- The agriculture and allied sectors grew at a positive growth rate of 3.6 per cent during 2020-21.
- This became possible due to good monsoon and various government measures to enhance credit availability, improve investments, create market facilities, promote infrastructure development in the agriculture sector and increase provision of quality inputs to the sector.
- The timely intervention in the form of Atma Nirbhar Bharat (ANB) Abhiyan coupled with other growth promoting schemes has further helped agriculture to achieve an improved growth of 3.9 per cent in 2021-22.
- In 2018-19 the growth in the agriculture was buoyed by the performance of livestock and fisheries even though the growth of GVA for crops was -1.6 per cent.

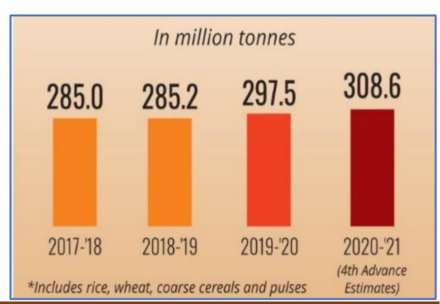


GROSS VALUE ADDED (GVA) IN AGRICULTURE

- The share of agriculture sector in total GVA of the economy has a long-term trend of around 18 per cent.
- The share of the agriculture & allied sector in total GVA, however, improved to 20.2 per cent in the year 2020-21 and 18.8 per cent in 2021-22.

Investment in Agriculture and Allied Sectors

- The Gross Capital Formation (GCF) in agriculture and allied sectors relative to GVA in the sector has been showing a fluctuating trend mainly because of wide fluctuations in private investment in agriculture and allied sectors.
- While public investment has remained stable between 2-3 per cent over the years, the private investment has fluctuated and the total agricultural GCF has moved in sync with variation in private investment.



Agricultural Production

- As per Fourth Advance Estimates for 2020-21, total food grain production in the country is estimated at a record 308.65 million tonnes which is 11.15 million tonnes higher than that during 2019-20.

- The production of rice, wheat and coarse cereals has increased at compound annual growth rates (CAGR) of 2.7, 2.9 and 4.8 per cent respectively during last six years i.e. 2015-16 to 2020-21.
- The CAGR for pulses, oilseeds and cotton has been 7.9, 6.1 and 2.8 per cent, respectively during the same period.

Edible Oils

- Oilseed production in India has grown by almost 43% from 2015-16 to 2020-21.
- Oil production in India has however lagged behind its consumption necessitating import of edible oils.
- India is the world's second largest consumer and number one importer of vegetable oil.
- Government is promoting the production and productivity of oilseeds through the centrally sponsored scheme of *National Food Security Mission: Oilseeds (NFSM-Oilseeds)* from 2018-19 onwards in all districts of India.
- Further, in August, 2021, *National Mission on Edible Oils - Oil Palm (NMEO-OP)* has been launched to augment the availability of edible oil in the country by harnessing area expansion and through price incentives. Under the scheme, *for the first time, Government will give a price assurance to the oil palm farmers for the Fresh Fruit Bunches (FFBs)*.

Sugar Sector

- Sugarcane and sugar industry is *India's second largest agro-based industry*, next to cotton.
- India is the *largest consumer and the second-largest producer of sugar* in the world.
- Over the years, India has become a sugar surplus nation. Since 2010-11, production has outstripped consumption except in 2016-17.
- This has been possible because of various measures undertaken by Government.
    - The interest of the farmers is protected by *Fair and Remunerative Price (FRP)*.
    - In addition, some States announce *State Advised Price (SAP)* at levels higher than FRP.
    - Additionally, sugar mills that buy sugarcane are mandated to purchase crops from farmers within a specified radius known as the *Cane Reservation Area*.

Price Policy: Minimum Support Price (MSP)

- The Government fixes MSP of 22 mandated agricultural crops on the basis of the recommendations of Commission for Agricultural Costs & Prices (CACP).
- The 22 mandated crops include
    - 14 Kharif crops viz. paddy, jowar, bajra, maize, ragi, tur (arhar), moong, urad, groundnut, soybean (yellow), sunflower seed, sesamum, nigerseed, cotton;
    - 6 Rabi crops viz. wheat, barley, gram, masur (lentil), rapeseed and mustard, safflower and
    - 2 commercial crops viz. jute and copra.
- In addition to that, MSP for toria and de-husked coconut are also fixed based on MSPs of rapeseed & mustard and copra respectively.
- The highest absolute increase in MSP over the previous year has been recommended for sesamum (₹ 452 per quintal) followed by tur and urad (₹ 300 per quintal each).

Crop Diversification

- Crop diversification can be used as a tool to promote sustainable agriculture, reduction in import dependence and higher incomes for the farmers.

- *<u>Crops Diversification Programme (CDP) is being implemented in the original green revolution states viz. Punjab, Haryana and Western UP as a sub scheme of Rashtriya Krishi Vikas Yojana (RKVY)</u>* since 2013-14 to shift area under paddy cultivation towards less water requiring crops such as oilseeds, pulses, coarse cereals, nutri cereals, cotton, etc.
- The *<u>CDP also focuses on shifting of areas under tobacco farming to alternative crops/ cropping system in tobacco growing States</u>*, namely, Andhra Pradesh, Bihar, Gujarat, Karnataka, Maharashtra, Odisha, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal with effect from 2015-16.

Agricultural Credit

- As a part of the Atma Nirbhar package, Government announced ₹ 2 lakh crore concessional credit boost to 2.5 crore farmers through Kisan Credit Cards (KCCs).
- The Government of India in 2018-19 extended the facility of KCC to fisheries and animal husbandry farmers

Water and Irrigation

- Water is a critical input for agriculture which accounts for about 80 per cent of the current water use in the country.
- The share of net irrigated area accounts for about 49 per cent of the total net sown area in the country and out of the net irrigated area, about 40 per cent is irrigated through canal systems and 60 per cent through groundwater.
- The overall stage of ground water development (ratio of annual ground water draft and net annual ground water availability) in the country is 63 per cent. This ratio which signifies the rate of extraction of ground water, is very high (more than 100 per cent) in the states of Delhi, Haryana, Punjab and Rajasthan.
- A Micro Irrigation Fund (MIF) with corpus of ₹ 5000 crore was created with National Bank for Agriculture and Rural Development (NABARD) during 2018- 19.

Agricultural Marketing

- Agricultural Produce Market Committees (APMCs) have been recognized as one of the eligible entities under Agriculture Infrastructure Fund (AIF) to further strengthen the infrastructure in APMC mandis.
- Government of India launched National Agriculture Market (e-NAM) Scheme in 2016 with the objective of creating online transparent competitive bidding system to facilitate farmers with remunerative prices for their produce.
- The Government of India has launched a Central Sector Scheme of "Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)" to form and promote 10,000 new FPOs till 2027-28.

Sweet Revolution

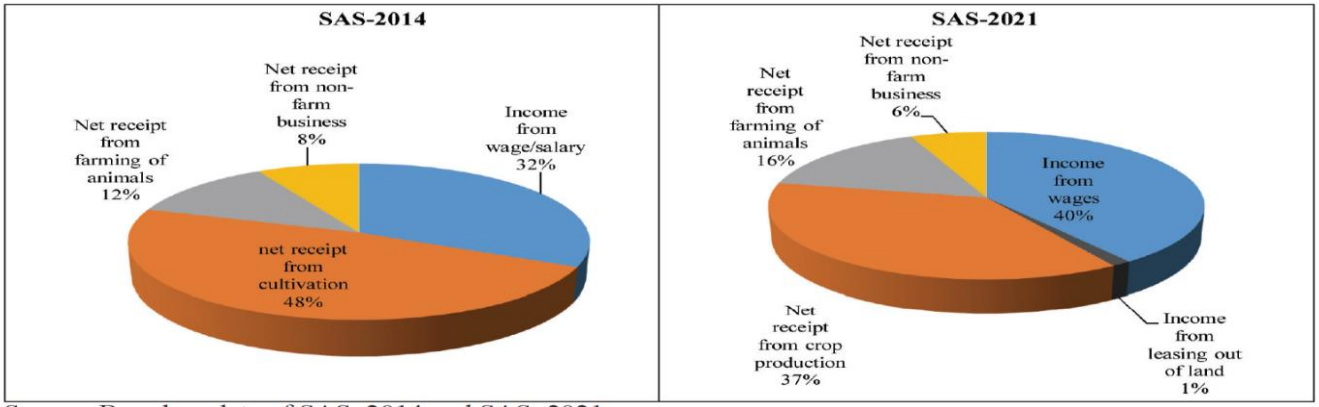
- Government approved the allocation of ₹ 500 crores for National Beekeeping & Honey Mission (NBHM) for three years (2020-21 to 2022-23). The mission was announced as a part of the ANB scheme.
- NBHM aims for the overall promotion & development of scientific beekeeping in the country to achieve the goal of 'Sweet Revolution' which is being implemented through National Bee Board (NBB).

SITUATION ASSESSMENT SURVEY

- National Statistical Office (NSO) in its 77th round of survey, conducted in 2019, carried out a survey on "Land and Livestock Holdings of Households and Situation Assessment of Agricultural Households" (referred as SAS) in the rural areas of India. The Report was released in September, 2021. The last SAS was published in 2014.

- The SAS, 2021 reveals that the average monthly income per agricultural household, as per paid out expenses approach, works out to be ₹ 10218. The average monthly income per agricultural household was ₹ 6426 as per the last SAS Report of 2014 estimated by the same approach.

Composition of Average Monthly Income of Agricultural Households



Source: Based on data of SAS, 2014 and SAS, 2021.

NATURAL FARMING

- Natural farming in India is being promoted through a dedicated scheme of *Bharatiya Prakritik Krishi Paddhati Programme (BPKP).*
- The scheme promotes on-farm biomass recycling with major stress on biomass mulching, use of on-farm cow dung-urine formulations, periodic soil aeration and exclusion of all synthetic chemical inputs.

ALLIED SECTORS: ANIMAL HUSBANDRY & DAIRYING AND FISHERIES

- The contribution of livestock in total agriculture and allied sector GVA (at constant prices) has increased from 24.32 per cent (2014-15) to 29.35 per cent (2019-20).
- Livestock sector contributed 4.35 per cent of total GVA in 2019-20.

Animal Husbandry & Dairying

- **Dairy Sector:** Dairy is the single largest agricultural commodity contributing 5 per cent of the national economy and employing more than 8 crore farmers directly. India is ranked 1st in milk production contributing 23 per cent of global milk production.
- **Egg and Meat Production:** According to FAOSTAT production data (2020), India ranks 3rd in Egg Production and 8th in meat production in the world.
- **National Animal Disease Control Programme (NADCP)** is the largest ever vaccination programme carried out either for human or animal vaccination in the world, is being implemented with the aim to control and eventually eradicate the Foot & Mouth Disease (FMD) and Brucellosis by 2030.
- As part of the ANB stimulus package, **the Animal Husbandry Infrastructure Development Fund (AHIDF)** worth Rs 15,000 crore was launched in 2020. Under this scheme the Central Government provides 3 per cent interest subvention to the borrower and credit guarantee up to 25 per cent of total borrowing.

Fisheries

- India is the second largest fish producing country in the world accounting for 7.56 per cent of global production. It contributes about 1.24 per cent to the country's GVA and over 7.28 per cent to the agricultural GVA.
- Government of India in 2018-19 extended the facility of KCC also to fisheries in addition to animal husbandry

farmers to help them meet their working capital needs.

- Government launched a new flagship scheme of ₹ 20,050 crores called **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** in May 2020 as a part of the ANB Package.

AGRICULTURAL RESEARCH & EDUCATION

- Department of Agricultural Research & Education (DARE) has developed 35 special trait varieties including biofortified and stress tolerant varieties of field and horticulture crops during 2021-22, taking the tally of biofortified varieties to 87.
- Indian Council of Agricultural Research (ICAR) has also designed and developed an *Agri-voltaic system of 105 kW for crop production and electricity generation from a single land use system*.
- To promote an inclusive growth of farm mechanization in the country, *Sub Mission on Agricultural Mechanization (SMAM)* was launched in the year 2014-15.
- The Government has also developed and launched *Multilingual Mobile App called Farm Machinery Solutions (FARMS) which helps the farmers in getting rented farm machinery and implements through Custom Hiring Centre (CHC) in their area*.
- Indian tractor industry is the largest in the world accounting for *one-third of the total global production*.
- A new Central Sector Scheme on 'Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' (CRM) for the period from 2018-19 to 2020-21 had been launched.
- *World's food system contributes to about one-fifth of global greenhouse gas (GHG) emissions. It is important to make agriculture climate resilient. There is a need to develop climate resilient and pest resilient crop varieties and also focus on research to improve incomes of farmers.*
- Research shows that every rupee spent on agricultural research and development, yields much better returns (11.2), compared to returns on every rupee spent on fertiliser subsidy (0.88), power subsidy (0.79), education (0.97) or on roads (1.10). *Increasing R&D spending on agriculture is, therefore, not only a vital necessity for ensuring food security, but also important from the socio-economic point of view.*

FOOD PROCESSING SECTOR

- During the last five years ending 2019-20, Food Processing Industries (FPI) sector has been growing at an average annual growth rate of around 11.18 per cent.
- The sector constituted as much as 9.87 per cent of GVA in manufacturing in 2019-20 at 2011-12 prices.

FDI in Food Processing Sector

- In FPI, 100 per cent FDI is permitted under the automatic route.
- However, in case of trading in respect of food products manufactured and/or produced in India including through e-commerce, 100 per cent FDI is allowed under the Government approval route.

Prime Minister-Formalization of Micro Food Processing Enterprises (PM-FME)

- Ministry of Food Processing Industries (MoFPI) has launched a new Centrally Sponsored Scheme, PM-FME with a total outlay of ₹ 10,000 crore over the period 2020-2025.
- Under the scheme, *One District One Product (ODOP)* status for 137 unique products in 710 districts of 35 States/ UTs has been approved by the Ministry.

Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)

- Under the umbrella central sector scheme PMKSY, the Ministry is implementing various component schemes, inter-alia, including (i) Mega Food Parks, (ii) Integrated Cold Chain and Value Addition Infrastructure, (iii) Infrastructure for Agro-processing Clusters, (iv) Creation of Backward and Forward Linkages (v) Creation / Expansion of Food Processing & Preservation Capacities, (vi) Operation Greens and (vii) Food Testing Laboratories.

TOP Scheme

- *Operation Greens Scheme* was announced in the Union Budget for 2018-19 to promote Farmer Producer Organisations (FPOs), agri-logistics, processing facilities and professional management for *Tomato, Onion and Potato (TOP) crops*.
- The Scheme was launched with two components:
  - *Long term: Value Chain Development Projects* - Under this, support is provided to capital investment projects for TOP crops.
  - *Short term: Price Stabilization Measures* - Under this, subsidy is provided at the rate of 50 per cent on transportation and storage at the time of harvest for evacuation of surplus production of TOP crops from the producing area to the consumption centres.

From TOP to TOTAL

- The Ministry of Food Processing Industries (MoFPI), on June 2020, extended the Operation Greens scheme from Tomato, Onion and Potato (TOP) *to all fruits & vegetables* (TOTAL) for a period of six months on pilot basis as part of Aatmanirbhar Bharat Abhiyan.
- The objective of intervention is *to protect the growers of fruits and vegetables from making distress sale due to lockdown and reduce the post-harvest losses*.

Eligible Crops

- Fruits- Mango, Banana, Guava, Kiwi, Litchi, Papaya, Mousambi, Orange, Kinnow, Lime, Lemon, Pineapple, Pomegranate, Jackfruit, Apple, Almond, Aonla, Passion fruit, Pear, Mandarins;
- Vegetables - French beans, Bitter Gourd, Brinjal, Capsicum, Carrot, Cauliflower, Chillies (Green), Okra, Cucumber, Peas, Garlic, Onion, Potato, Tomato, Turmeric (raw).
- Any other fruit/vegetable can be added in future based on recommendation by Ministry of Agriculture or State Government (For list of eligible crops, selected surplus production clusters and trigger price for intervention under the scheme.

FOOD MANAGEMENT

- The instruments of food management used are procurement at MSP from farmers and sale at *Central Issue Price (CIP)* under the **Targeted Public Distribution System (TPDS).**
- The nodal agency which undertakes procurement, distribution and storage of food grains is the **Food Corporation of India (FCI).**
- The distribution of foodgrains is undertaken primarily under the **National Food Security Act, 2013 (NFSA)** and other welfare schemes of the Government of India.
- The difference between the per quintal economic cost and the per quintal Central Issue Price (CIP) gives the quantum of per quintal food subsidy.
- To ameliorate the hardships faced by the poor due to economic disruption caused by COVID-19 Pandemic, the Government launched **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY).** Currently Phase V of PMGKAY is in operation covering December, 2021 to March 2022.
- The Government of India approved the Centrally Sponsored Pilot Scheme **'Fortification of Rice and its**

Distribution under Public Distribution System' on 14.02.2019 for a period of 3 years beginning 2019-20. The Pilot Scheme is being implemented in 15 Districts (1 District per State).

- Under the scheme "*Integrated Management of Public Distribution System*" which was started during 2018-19 and 2019-20, **One Nation One Ration Card (ONORC) System** has been launched. The validity of the scheme has been extended to 31.03.2023.
- Under the **Open Market Sale Scheme (Domestic) [OMSS (D)] 2020-21 policy**, a special dispensation for supply of food grains to all the charitable or non-governmental organizations etc. engaged in relief or running community kitchens for migrant labourers/vulnerable groups due to the present lock down condition was introduced since 08.04.2020.

Ethanol Blended with Petrol (EBP) Program

- The Government has now set 20 per cent ethanol blending target for mixing ethanol with petrol to be achieved by 2025.
- To achieve the targets, Government has allowed production of ethanol from different feed stocks viz B-Hy & C-Hy molasses, cane juice, sugar syrup, sugar and damaged food grains including surplus FCI rice, maize, etc. by the distilleries either attached with sugar mills or standalone.

FERTILIZERS

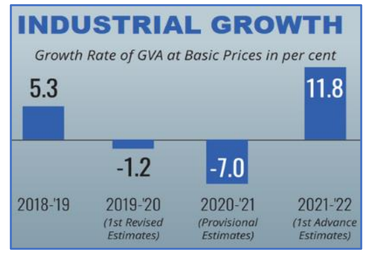
- Government is making available fertilizers, namely Urea and 24 grades of P&K fertilizers to farmers at subsidized prices through fertilizer manufacturers/importers.
- *Urea is being provided to the farmers at a statutorily notified Maximum Retail Price (MRP)*.
- As far as Phosphatic and Potassic (P&K) fertilizers are concerned, Government is implementing *Nutrient Based Subsidy (NBS) Scheme* w.e.f 01.04.2010.
- Under the said scheme, subsidy is provided on each grade of subsidized Phosphatic and Potassic (P&K) fertilizers depending upon its nutrient content.

Recent initiatives

- *New Urea Policy-2015* has been notified with the objectives of maximizing indigenous production, promoting energy efficiency in production, and rationalizing subsidy burden on the government.
- *Government has made it mandatory for all the domestic producers of urea to produce only neem coated urea.*
- Government has brought *Potash Derived from Molasses (PDM) under Nutrient Based Subsidy (NBS) scheme* for the first time since its inception in 2010 to give a push to its manufacturing by Sugar Mills as a by-product and reduce its import dependence.

9. INDUSTRY AND INFRASTRUCTURE

INTRODUCTION



- The gross value addition at constant prices (GVA) in the industrial sector grew at the compound annual growth rate (CAGR) of 4.53 percent between 2011-12 and 2019-20 while total GVA grew by CAGR of 5.63 percent over the same period.
- The share of the industrial sector in the nominal GVA (at current prices) was 25.9 percent in 2020-21.
- With the industrial sector recovering and expected to grow at 11.8 percent, as per advance estimates for 2021-22 by National Statistical Office, industry's share is expected to increase to 28.2 percent.
- In 2020-21, the share of manufacturing fell to 14.4 percent but is expected to improve to 15.3 percent in 2021-22. In 2020-21, **electricity, gas, water supply and other utility services** was the only sub sector that had experienced a positive growth of 1.9 percent.
- In 2021-22, the manufacturing sector is expected to grow by 12.5 percent, mining and quarrying by 14.3 percent, construction by 10.7 percent and electricity, gas and water supply by 8.5 per cent.

KEY INDICATORS

Index Of Industrial Production (IIP)

- The impact of the pandemic on the industrial sector is reflected in the negative growth of 8.4 percent in 2020-21. In April-November 2021-22 the IIP grew by 17.4 per cent as compared to (-15.3) per cent in the corresponding period of the previous year.
- The IIP also provides data for 23 subgroups of the manufacturing sector. In the period, April-November 2021-22, all the 23 sectors recorded a positive growth.
- The major industrial groups like textiles, wearing apparel, electrical equipment, motor vehicles staged a strong recovery.
- *Note: IIP is a composite indicator that measures the short-term changes in the volume of production of a basket of industrial products during a given period. The index is released by National Statistical Office under the Ministry of Statistics and Program Implementation. The base year of the IIP is 2011-12.*

Index of Eight Core Industries (ICI)

- The monthly Index of Eight Core Industries (ICI) measures collective and individual performance of production in selected *eight core industries like Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity*.
- This is an index of the eight most fundamental industrial sectors of the Indian economy and comprises 40.27 percent of the weight in IIP.
- The growth rate of the ICI index during the period of April-Nov 2021-22 was 13.7 percent as compared to (-) 11.1 percent in the corresponding period of last financial year.
- This acceleration in ICI is mainly driven by improved performance in the steel, cement, natural gas, coal and electricity. Fertilizers and crude oil registered a negative growth of 0.6 percent and 2.7 percent respectively.
- *Note: The Index of Eight Core Industries is released by Office of Economic Adviser, under the Department for*

Promotion of Industry and Internal Trade (DPIIT), under Ministry of Commerce & Industry. The base year of this index is 2011-12.

Capacity Utilization (CU)

- Capacity utilization (CU) is an important economic indicator to assess demand and investment prospects of the economy. CU rates are largely able to track the pace of manufacturing activities in the economy.
- The extent of CU had decreased substantially during the first quarter of 2020-21 due to the COVID-19 pandemic as severe restrictions were imposed in the country.
- It was, however, less severe during the second wave of COVID-19 mainly because the lockdown was not imposed as a country wide measure.

RBI's Business Expectation Index (BEI)

- This index gives a glimpse of the demand conditions in the manufacturing sector by combining parameters which include overall business situation, production, order books, inventory of raw material and finished goods, profit margin, employment, exports and capacity utilization.
- BEI remained stable with only a slight downturn in the second quarter of 2020-21 owing to the onset of the pandemic in the first quarter of that year. Since then, it has been on an upswing.

GROSS FIXED CAPITAL FORMATION

- Gross fixed capital formation (GFCF) is the gross addition to fixed assets like machinery and equipment, intangible assets and indicates the state of investments in the economy.
- During 2019-20, the share of industrial sector in total GFCF in the economy (at current prices) was recorded at 30.1 per cent, which is slightly lower than 31 per cent in the previous financial year.
- Within the industrial sector, share of manufacturing in GFCF was 51 per cent, followed by electricity at 23 per cent, construction at 21 per cent, and mining with 5 per cent.

CREDIT IN INDUSTRY

- Gross bank credit to the industrial sector, recorded a growth of 4.1 percent in October 2021 (Y-o-Y basis) compared to a negative growth of 0.7 growth in October2020.
- The share of industry in non-food credit stood at 26 percent in October 2021.

FDI IN INDUSTRIES

- India registered its highest ever annual FDI inflow of US$ 81.97 billion in the 2020-21 reflecting a growth of 10 percent as compared to the previous year. The increase has been on the back of growth of 20 per cent in 2019-20.
- Over the last seven fiscal years (2014-21), India received FDI inflow worth US$ 440.27 billion which is nearly 58 percent of the FDI received by the country in the last 21 years (US$ 763.83 billion).

FDI Policy Reforms During The Covid-19 Pandemic

Sectoral FDI Reforms

- **Defence Sector:** FDI in defence sector is allowed up to 74 percent through automatic route (from earlier 49 percent) for companies seeking new industrial licenses. FDI beyond 74 percent and up to 100 percent will be permitted under Government route.
- **Insurance Sector:** Government raised the permissible FDI limit from 49 percent to 74 percent in Insurance Companies under the automatic route and allow foreign ownership and control with safeguards.
- **Petroleum & Natural Gas sector:** Foreign investment up to 100 percent is permitted under the automatic

route in cases where the Government has accorded an 'in-principle' approval for strategic disinvestment of a Public Sector Undertaking (PSU) engaged in the Petroleum and Natural Gas Sector.

- **Telecom sector:** Foreign investment up to 100 percent is permitted under automatic route in Telecom services sector.

FDI Related Policy Reforms

- **Curbing opportunistic acquisitions/takeovers:** Government amended the FDI policy in 2020 according to which an entity of a country, which shares land border with India or where the beneficial owner of an investment into India is situated in or is a citizen of any such country, can invest only under the Government route.
- **FDI Monitoring Cell:** It has been formed which follows up with applicant/ investor, to expedite FDI proposals with a view identify and hurdles if any. An inter-ministerial committee headed by Secretary, DPIIT has been formed to take appropriate actions on delayed FDI proposals and those escalated by Administrative Ministries/Departments.
- Process rationalisation and transparency by amending the Standard Operating Procedure (SOP) to improve ease of processing FDI proposals.

PERFORMANCE OF CENTRAL PUBLIC SECTOR ENTERPRISES

- As on 31.03.2020, 256 CPSEs were operational. There were 58 listed CPSEs as on 31.03.2020 with market capitalization of Rs. 8.2 lakh crore.
- The Government notified the ***new Public Sector Enterprise (PSE) Policy*** on 4 February 2021. The new PSE Policy envisages classification of CPSEs into *Strategic and Non-Strategic Sectors*.
- The strategic sectors as per the policy are as under: atomic energy; space and defense; transport and telecommunication; power; petroleum; coal and other minerals; banking, insurance, and financial services.
- The non-strategic CPSEs will be privatized or otherwise shall be closed.
- It exempts certain CPSEs such as those setup as not-for-profit companies under the Companies Act, 2013 or those supporting vulnerable and weaker sections of society, from the scope of the Policy.

SECTOR WISE PERFORMANCE AND ISSUES IN INDUSTRY

Steel

- According to World Steel Association (November, 2021) world crude steel production was 143.3 million tonnes (Mt) in November 2021, a 9.9 percent decrease compared to November 2020.
- The reduction in world output of steel is because of reduced global production. With economic recovery, the global demand for steel is slated to increase this year and the next.
- Schemes by Government of India in steel sector
  - PLI Scheme for Specialty Steel.
  - Domestically Manufactured Iron and Steel Products (DMI&SP) Policy.
  - Quality Control Order (QCO) covering carbon steel, alloy steel, tin plate, tin free steel and stainless steel.
  - Promotion of R&D in Iron & Steel Sector to address the technological issues faced by the sector.

Coal

- Coal accounts for 55 percent of the country's energy need.
- Despite the push for renewables, as per the Draft National Energy Policy of NITI Aayog, the demand for coal

is expected to remain in the range of 1.3-1.5 Billion Tonnes by 2030.

- Opening of coal mining for private sector is the most ambitious coal sector reform. So far, 28 coal mines have been successfully auctioned.

Micro Small Medium Enterprise (MSMEs)

- The share of MSME GVA in total GVA (current prices) for 2019-20 was 33.08 per cent.
- To improve the ease of doing business for the MSMEs, Government of India launched the new Udyam Registration Portal in July 2020.
- The *CHAMPIONS portal* is an ICT based technology system for making the smaller units big by helping and handholding them.
- The revision in the definition of MSMEs brought in w.e.f. 1st July, 2020 introduced a composite-criteria of investment and annual turnover- and identical limits for manufacturing and services sector.

	Old Definition		New Definition	
	Manufacturing	Services	Manufacturing	Services
Micro	Investment in Plant and Machinery: Does not exceed Rs. 25 Lakh.	Investment in Equipment: Does not exceed Rs. 10 Lakh.	Investment in Plant and Machinery or Equipmentand turnover: The investment in plant and machinery or equipment does not exceed Rs. 1 Crore and turnover does not exceed Rs. 5 crores.	
Small	Investment in Plant and Machinery: More than Rs. 25 lakh but does not exceed Rs. 5 crore	Investment in Equipment: More than Rs. 10 Lakh but does not exceed Rs. 2 crore	Investment in Plant and Machinery or Equipment and turnover :The investment in plant and machinery or equipment does not exceed Rs. 10 crore and turnover does not exceed Rs. 50 crore.	
Medium	Investment in Plant and Machinery: More than Rs. 5 crore but does not exceed Rs. 10 crore	Investment in Equipment: More than Rs. 2 crore but does not Rs. 5 crore.	Investment in Plant and Machinery or Equipment and turnover: The investment in plant and machinery or equipment does not exceed Rs. 50 crore and turnover does not exceed Rs. 250 crore.	

Textiles

- Textile industry is the **second largest employment generator** in the country, next only to agriculture.
- **Production-Linked Incentive (PLI) Scheme for Man Made Fiber (MMF) segment and technical textiles**, notified in September 2021, for enhancing India's manufacturing capabilities and enhancing exports will focus on promotion of 40 MMF apparel and 10 Technical textiles lines and create global champions.
- The government notified the setting up of **7 PM Mega Integrated Textiles Region and Apparel Park (MITRA)** in October 2021.

Electronics Industry: Initiatives By Government of India

- *National Policy on Electronics 2019* (NPE 2019) aims to position India as a global hub for Electronics System Design and Manufacturing (ESDM);
- *Production Linked Incentive (PLI) Schemes* for Large Scale Electronics Manufacturing;
- *PLI Scheme for IT Hardware*;
- *Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS);*
- *Modified Electronics Manufacturing Clusters 2.0 (EMC 2.0);*
- A portal called "*PARAKH*" has been set up in 2021, wherein all the accredited, certified and recognised laboratories in the country would be mapped on a Geographic Information System (GIS).

Pharmaceuticals

- Indian Pharmaceutical industry ranks **third in the world in pharmaceutical production by volume.** India is the **largest supplier of generic medicines** with a 20 percent share in the global supply.
- **FDI in the pharmaceutical sector** has seen a sudden spurt in 2020-21 vis a vis the previous year showing a 200 percent increase.
- Although a prominent player in formulations, India is significantly dependent on the import of bulk drugs that are used in the formulation of medicine. In certain cases, import dependence varies between 80-100 percent.
- **Production linked incentive (PLI) scheme for Bulk drugs** has been approved for promotion of domestic manufacturing of 53 critical APIs in the country with a budget of INR 6,940 crore for the next eight years.

- **PLI scheme for Pharmaceuticals:** Three categories (biopharmaceuticals, API/KSM/drug intermediates, and drugs not covered under Category 1 and Category 2) of pharmaceutical goods will be incentivized under the scheme based on their incremental sales for 6 years.
- **PLI Scheme for Promoting Domestic Manufacturing of Medical Devices** was approved on 20th March, 2020. The Scheme is *applicable only to the greenfield projects* and intends to attract large investments in the medical devices sector.

INFRASTRUCTURE

National Infrastructure Pipeline (NIP)

- National Infrastructure Pipeline (NIP) was launched with projected infrastructure investment of around Rs. 111 lakh crore (US$ 1.5 trillions) during FY 2020-2025 to provide world-class infrastructure across the country.
- NIP was launched with 6,835 projects, which has expanded to over 9,000 projects covering 34 infrastructure sub-sectors.
- During the fiscals 2020 to 2025, sectors such as energy (24 percent), roads (19 percent), urban (16 percent), and railways (13 percent) amount to around 70 percent of the projected capital expenditure in infrastructure in India.

National Monetisation Pipeline (NMP)

- NITI Aayog has developed the 'National Monetisation Pipeline (NMP)' in consultation with infrastructure line ministries.
- Asset monetisation, entails a limited period license/ lease of an asset, owned by the government or a public authority, to a private sector entity for an upfront or periodic consideration.
- The private sector entity is expected to operate and maintain the asset based on the terms of the contract/concession, generating returns through higher operating efficiencies.

Road Transport

- The road network of the country consists of National Highways (NH), State-Highways (SH), District Roads, Rural Roads, Urban Roads and Project Roads of over 63.71 (Provisional) lakh km of roads as on 31 March 2019, which is the second-largest in the world, after the United States with 66.45 lakh kms of roads.
- The extent of road construction per day increased substantially in 2020-21 to 36.5 kms per day from 28 kms per day in 2019-20, a rise by 30.4 percent as compared to the previous year.

Railways

- Indian railways (IR) with over 68,102 route kms, has the third largest network in the world under single management.
- IR is also adopting indigenous new technology such as KAVACH, Vande Bharat trains and redevelopment of stations to have safe and better journey experience.
- IR is targeting for 100% electrification of its network by December 2023.

National Railway Plan

- The National Rail Plan lays down the road map for capacity expansion of the railway network by 2030 to cater to growth up to 2050. It aims to increase the modal share of railways in freight to 40-45% from the present level of 26-27%.
- As per National Rail Plan, freight ecosystem is expected to grow from the present level of 4700 MT to 8200 by 2030. Railway capacity enhancing projects under it have been categorized as Super Critical and Critical.

Civil Aviation

- Domestic traffic in India has more than doubled from around 61 million in 2013-14 to around 137 million in 2019-20, registering a growth of over 14 percent per annum.
- After launching of UDAN in 2016, four rounds of bidding under RCS-UDAN have taken place and 153 Regional Connectivity Scheme (RCS) airports including 12 water aerodromes & 36 Helipads have been identified for operation of RCS flights.
- Government has released liberalized *Drone Rules 2021* on August 2021 and released PLI scheme for Drones on 15 September 2021.
- M/s Talace Pvt Ltd, a wholly owned subsidiary of M/s Tata Sons Pvt. Ltd has been awarded 100 percent equity shareholding in Air India along with equity shareholding of Air India in Air India Express Ltd. (AIXL) and AISATS.

Ports

- The capacity of 13 major ports has increased by 79 percent from March 2014 till the end of March 2021. The average turnround time at these major ports has reduced from 62.11 hours in 2019-20 to 55.99 hours in 2020-21.
- Indian fleet is just 1.2 percent of world's fleet in terms of capacity and carries only 7.8 percent (for 2018-19) of India's EXIM trade.
- ***Sagarmala Program*** is aimed at accelerating economic development in the country by harnessing the potential of India's 7,500 km long coastline and 14,500 km of potentially navigable waterways.
- The Major Port Authorities Act 2021 provides for inter alia regulation, operation and planning of major ports in India and vests the administration, control and management of such ports upon the Boards of Major Port Authorities.
- The Maritime India Vision 2030 (MIV 2030) estimates that development of Indian ports will drive cost savings of Rs. 6,000-7,000 crore per annum for EXIM clients.

Inland Waterways

- The *Inland Vessels Act, 2021*, replaced the over 100 years old Inland Vessels Act, 1917 and ushered in a new era in the inland water transport sector.
- Augmentation in navigation capacity of National Waterway-1 (NW-1) is being implemented since 2018 through the ***Jal Marg Vikas Project*** from Varanasi to Haldia stretch of Ganga-Bhagirathi-Hooghly River System to enable large barge movements.
- Construction of multi-modal terminals at Varanasi and Sahib Ganj have been completed and that of the multimodal terminal at Haldia and the Navigational Lock at Farakka have achieved substantial progress.

PM-GATI SHAKTI

- PM Gati Shakti is an integrated plan ensuring multi-modal and seamless connectivity for people, goods and services.
- It covers 16 ministries and infrastructure like Bharatmala, Sagarmala, inland waterways, dry/land ports, UDAN etc. It is also *expected to include social infrastructure like hospitals and universities*.

Telecom

- India is the *world's second-largest telecommunications market*.
- The total telephone subscriber base in India has increased from 933.02 million in March 2014 to 1200.88 million in March 2021. In March 2021, 45 percent of subscribers were based in rural India and 55 percent in urban areas.
- Internet subscribers increased from 302.33 million in march 2015 to 833.71 million in June 2021. Of these,

only 4 percent of subscribers have narrowband connection and 96 percent have broadband connection.

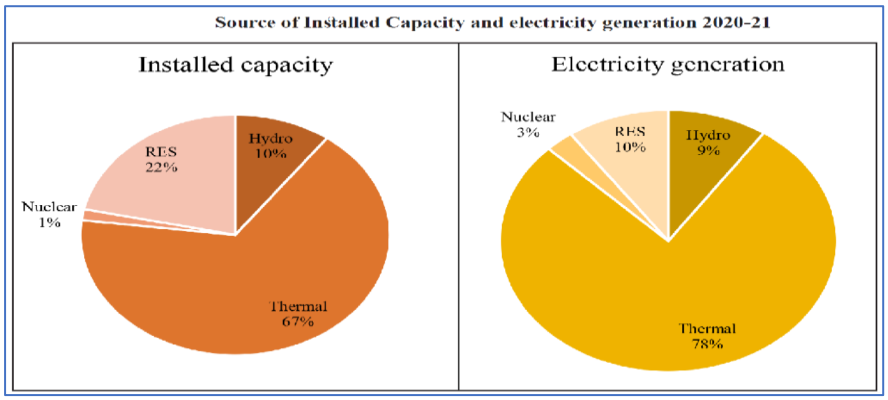
- The number of mobile towers has also increased substantially reaching 6.93 lakhs towers in December 2021.
- Under the flagship *BharatNet project*, as on 27.09.2021, 5.46 lakh km Optical Fiber Cable has been laid. The scope of BharatNet has now been extended to cover all inhabited villages beyond Gram Panchayats.

Petroleum, Crude and Natural gas

- India depends on imports to meet more than 80 per cent of its Crude oil requirements.
- **The "Lakshya Bharat Portal"** launched in September, 2021 requires all oil and gas organizations to upload details of various items procured by them including the future requirements.
- **The second phase of the Pradhan Mantri Ujjwala Yojana, Ujjawala 2.0,** was launched on 10th August, 2021 on pan India basis to provide additional one crore LPG connections along with free first refill and stove.
- **National Gas Grid:** With the aim to create nationwide gas grid, Petroleum and Natural Gas Regulatory Board (PNGRB) has authorized approximately 33,764 km natural gas pipeline network across the country, as on 31.03.2021. The National Gas Grid would connect all major demand and supply centres in India.

Electricity

- Total installed power capacity and captive power plant (industries having demand of 1MW and above) was 459.15 GW on 31.03.2021 as compared to 446.35 GW on 31.03.2020 registering a growth of 2.87 percent.



- Thermal sources of energy make the largest – 61.42 percent share of total installed capacity in utilities followed by renewable energy resource (RES) with 24.7 percent and hydro by 12.09 percent.
- Overall, due to pandemic led disruptions in economic activity, electricity generation was lower in the year 2020-21 which is now expected to increase with the recovery of the economy.

Renewable Energy – Solar, Wind, Biomass And Small Hydro Energy

- Renewable energy (excluding large hydro) constitutes over 24.71 percent of the country's installed power capacity and around 10.7 percent of the electrical energy generation for year 2020-21.
- As of 31 October 2021, India's total renewable energy installed capacity (excluding hydro power above 25 MW) has reached over 103.05 GW.
- During the last 7.5 years, if large hydro is included, the share of renewable energy in electric installed capacity is estimated to be about 38.27 percent (as of October 2021) and its share in electric energy generation is estimated to be about 26.96 percent (for the month of August 2021).
- The difference in the share of renewable energy in installed capacity and electricity generation is because of the variability in the sunshine hours or extent of wind which in turn will determine the utilization of the installed capacity.
- The ***Green Energy Corridor (GEC) Project*** aims at synchronizing electricity produced from renewable sources, such as solar and wind, with conventional power stations in the grid.
- The energy losses in transformation, transmission and distribution during the year 2019- 20 was at 20.46 percent for all India which was highest for the North east region - 29.98 percent.

10. SERVICES

INTRODUCTION

- Services sector contributes over 50 per cent to India's GDP.
- The services sector has been the worst affected by Covid-19 pandemic as its' share in India's GVA declined from 55 per cent in 2019-20 to 53 per cent in 2021-22.
- Within the services sector, the effect of Covid-19 has been varied.
  - Non-contact services such as information, communication, financial, professional and business services have remained resilient.
  - The impact has been much severe on contact-based services such as tourism, retail trade, hotel, entertainment and recreation, etc.

IMPACT OF COVID-19 AND SEQUENTIAL RECOVERY

- The services sector contracted by 8.4 per cent Year on Year (YoY) in 2020-21.
- This decline was driven by a sharp contraction of 18.2 per cent YoY in the sub-sector 'Trade, hotels, transport, communication & services related to broadcasting'.
- Owing to its contact intensive nature, the services included in this sub-sector had to bear the maximum brunt of the disruptions caused by the prevailing pandemic.
- The sub-sector 'Public administration, defence & other services' which includes expenditure by the government on one hand and services such as health, education, recreation etc, on the other, contracted by 4.6 per cent YoY in 2020-21.
- The relatively less contact intensive sub-sector 'Financial, real estate & professional services' was the least impacted, with a marginal decline of 1.5 per cent YoY in its GVA during 2020-21.

Recovery

- During the first half of the current fiscal year, the services sector has registered a steady recovery. Overall, the services sector grew by 10.8 per cent YoY in first half (H1) 2021-22.
- As per the first advance estimates, Gross Value Added (GVA) of services sector is estimated to grow by 8.2 per cent in 2021-22.
- Sub-sectors 'Trade, hotels, transport, communication & broadcasting services', 'Financial, real estate & professional services', and 'Public administration, defence & other services' are estimated to expand by 11.9 per cent, 4 per cent and 10.7 per cent respectively in 2021-22.
- A part of this growth is attributable to the low base in 2020-21.

TRENDS IN HIGH FREQUENCY INDICATORS

The upturn in Services GVA, when seen with the trend in high frequency indicators such as Purchasing Managers Index (PMI) Services Index, freight and passenger traffic point to a pickup in economic momentum.

Services PMI

- India's services sector activity, gauged by PMI services, which had contracted for five consecutive months since March 2020, recovered sharply in October 2020.

- It dropped again for three consecutive months (May, June and July 2021) as a consequence of the second Covid-19 wave.
- With the easing of restrictions, PMI Services started to grow once again from August 2021 recording strongest jump in over 10 years to 58.4 in October 2021.

Freight Traffic

- The freight traffic (rail, air and port) had fallen sharply as a consequence of the complete lockdown in March 2020.
- As the economy gradually opened up from June 2020, freight traffic also started to improve.
- Freight traffic registered strong growth in during April- June 2021, partly reflecting the rebound from the low base during the same period last year.
- The impact of second covid wave in April-May 2021 on these indicators was much more muted as compared to during the full lockdown in March-May 2020.

Passenger Traffic

- Travel restrictions in the early half of 2020-21 had halted the movement of Indian airlines and railways leading to a sharp fall in air and rail passenger traffic.
- Domestic passenger traffic (both air and rail) had then started to recover gradually from August 2020 on a monthly basis but fell again in April-May 2021 due to the disruptions caused by second wave of Covid-19. It has picked up since then.
- The emergence of the Omicron variant and the consequential travel restrictions pose a threat to the domestic passenger traffic in the near term.

Bank Credit to Services Sector

- Bank credit to services sector registered a growth (YoY) of 3.6 per cent in November 2021, as compared to the 8.2 per cent a year ago.
- The slowdown in growth is largely on account of the lower growth in credit to ‘Tourism, Hotel & Restaurants’, ‘Transport Operators’ and Trade- Retail as well as Wholesale.
- On the other hand, growth in bank credit picked up in ‘Computer Software’, ‘Shipping’, and ‘Non-Banking Financial Companies (NBFCs).

SERVICES SECTOR SHARE AT THE STATE AND UT LEVEL

- The services sector accounts for more than 50 per cent of the Gross State Value Added (GSVA) in 12 out of the 33 states and UTs.
- Chandigarh stands out with a particularly high share of services in GSVA at 74 per cent while Sikkim’s share remains the lowest at 24.25 per cent.
- Due to the Covid-19 pandemic and restrictions in movement, GSVA in services sector declined in 2020-21 relative to the pre-pandemic year 2019-20. This is true for 13 out of 20 states for which data is available. During 2020-21, services GSVA contracted by almost 11 per cent in Rajasthan, and by almost 10 per cent in Jharkhand and Punjab. On the other hand, Sikkim achieved the highest growth of 11.71 per cent in services GSVA during 2020-21.

FDI INFLOWS INTO SERVICES SECTOR

- Services sector is the largest recipient of FDI inflows in India.
- According to the World Investment Report 2021 by the UN Conference on Trade and Development

(UNCTAD), India was the fifth-largest recipient of Foreign Direct Investment (FDI) in 2020 improving its rank by four places, from ninth position in 2019.

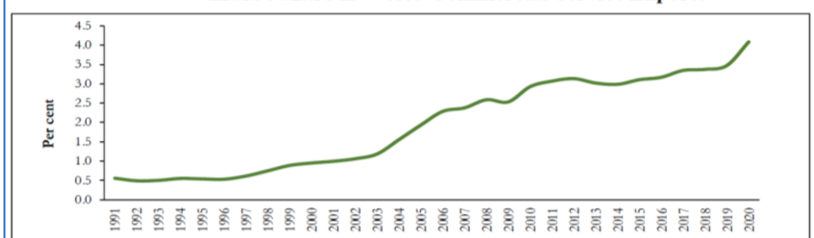
- In 2020-21, India registered highest ever annual FDI inflows of US$ 81.97 billion.
- The country has received US$ 43.12 billion FDI inflows in the first six months of 2021-22.
- FDI equity inflows, i.e., FDI inflows minus re-invested earnings, were US$ 31.15 billion during April-September 2021, growing by 3.8 per cent over the corresponding period last year.

TRADE IN SERVICES SECTOR

- World trade in commercial services plummeted in 2020 following the Covid-19 pandemic.
- The slowdown in global services was predominately due to restrictions on travel and tourism and reduction in transportation services, largely in the passenger segment (WTO, 2021).
- In 2021 so far, world trade in services has shown signs of recovery as a result of world-wide extensive inoculation and resumption in global economic activity. According to WTO, global services trade returned to positive growth territory in April-June 2021, rising 26 per cent YoY.
- Bolstered by increased demand for goods, shipping under-capacity and higher freight costs, transport services improved on YoY basis.
- However, travel services remain below pre-pandemic levels.

Services Exports

India's share in World Commercial Service Exports



Source: World Bank

Note: Commercial service exports are total service exports minus exports of government services not included elsewhere. International transactions in services are defined by the IMF's Balance of Payments Manual (1993) as the economic output of intangible commodities that may be produced, transferred, and consumed at the same time.

- India has a dominant presence in global services exports.
- It remained among the top ten services exporter countries in 2020, with its share in world commercial services exports increasing from 3.4 per cent in 2019 to 4.1 per cent in 2020.
- India's software exports, with a share of 48.5 per cent in total services exports, remained relatively resilient during Covid-19 period with higher demand for digital support, cloud services and infrastructure modernisation catering to the new pandemic challenges.
- Until 2019-20, India was net exporter of travel services. However, amid drop in foreign tourist arrivals owing to the mobility restrictions imposed worldwide, travel receipts remained below the pre-pandemic level.

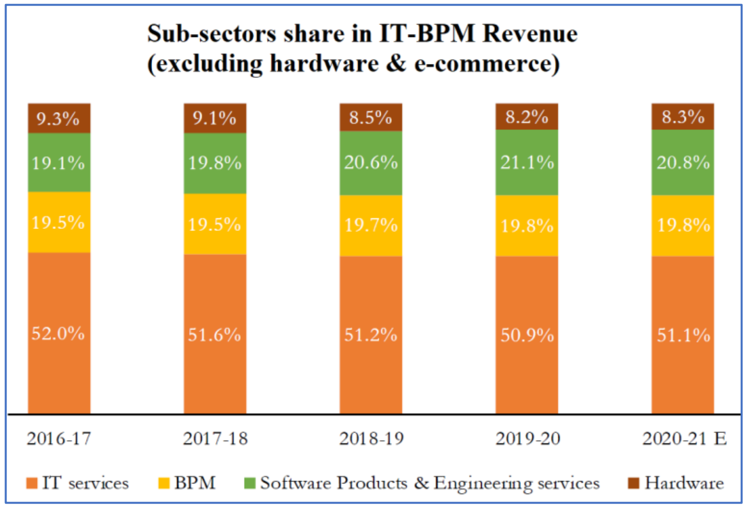
Services Imports

- India's services imports exhibited sharper decline of 8.4 per cent in 2020-21 in comparison with services exports primarily on account of fall in travel and transportation payments.
- During H1 2021-22, growth of services imports was 20.7 per cent on account of relaxation in lockdown restrictions and resumption in domestic economic activity.
- Business services, the largest category in India's import of services, increased by 0.9 per cent in H1 2021-22. The increase in business services payments was due to technical, trade-related, other business services, higher outward remittances for maintenance of offices abroad.
- Despite Covid-19 impacting travel and transport services exports in 2020-21, double digit growth in gross exports of services, aided by exports of software, business and transportation services, resulted in an increase of 22.8 per cent in net exports of services in H1 2021-22.

MAJOR SERVICES: SUB-SECTOR WISE PERFORMANCE AND RECENT POLICIES

IT BPM Services

- The Information Technology-Business Process Management (IT-BPM) sector is a major segment of India's services.
- During 2020-21, according to NASSCOM's provisional estimates, IT-BPM revenues (excluding e-commerce) reached US$ 194 billion, growing by 2.26 per cent YoY, adding 1.38 lakh employees.
- Out of the total US$ 149.1 billion in exports of the IT-BPM sector (excluding hardware and e-commerce) in 2020-21, Banking, Financial services and Insurance (BFSI) contributed US$ 61.4 billion, accounting for over 41 per cent of the exports.



- United States remained the biggest source of exports revenues amounting US$ 92.1 billion in 2020-21. This is followed by UK.

Removal of Telecom Regulations in IT-BPO Sector

- The Government undertook a major reform of liberalizing the Telecom regulations in the IT-BPO sector. In legal parlance, these are called Other Service Providers (OSPs). New revised and simplified OSP guidelines were first issued in November 2020 and further in June 2021.
- The applicability of new guidelines is limited to entities that provide "Voice based BPO services" to its customers.
- No registration certificate will be required for OSP centres in India.
- No bank guarantee whatsoever will be required for any facility or dispensation under these guidelines.
- The categorization of OSPs has been done away with and one single OSP category has been introduced regardless of their domestic/ international business operations.

Tourism Sector

- According to the World Tourism Barometer of the United Nation's World Tourism Organization (January 2021), International Tourist Arrivals (ITA) declined by 74 per cent globally in 2020 over the previous year, with restrictions on travel, low consumer confidence and a global struggle to contain the Covid-19 spread.
- ITA had reached a total of 1.5 billion in 2019, and reduced to 381 million in 2020, leading to an estimated loss of US$ 1.3 trillion in export revenues.
- This weakness in international tourism has continued in 2021. During January- September 2021, ITA worldwide was 20 per cent lower than the same period in 2020 and 64 per cent below 2019 levels.
- In India, special international flights have been operating under the Vande Bharat Mission to help expats fly back home under special diplomatic arrangements (air travel arrangements) with various countries since May 2020.

Ports, Shipping and Waterways Services

- Ports handle around 90 per cent of export-import cargo by volume and 70 per cent by value in India. The total cargo capacity of all the ports has increased to 1,246.86 Million Tonnes Per Annum (MTPA) as of March 2021 from 1,052.23 MTPA as of March 2014.

- Over the last seven years, the shipping Turnaround Time (TRT) at major ports has declined consistently from almost 3.64 days in 2015-16 to 2.25 days in 2021 (April-December).
- The turnaround time is now the lowest at the JNPT port (1.16 days) and the highest at the Visakhapatnam and Mormugao ports.
- The Sagarmala programme is the flagship programme of the Ministry of Ports, Shipping and Waterways to promote port-led development in the country by taking advantage of India's 7,500 km long coastline and 14,500 km long potentially navigable waterways.

Start-ups

- During 2021, the Government recognised over 14,000 new start-ups as compared to only, only 733 new start-ups during 2016-17. As a result, more than 61,400 start-ups have been recognised in India as of January 10, 2022.
- Over the recent years, Delhi has replaced *Bangalore as the start-up capital of India*.
- India had a record number of start-ups (44) reach unicorn status in 2021. It overtook UK to emerge as the third highest country in number of unicorns after US and China which added 487 and 301 unicorns respectively in 2021.

Space Sector

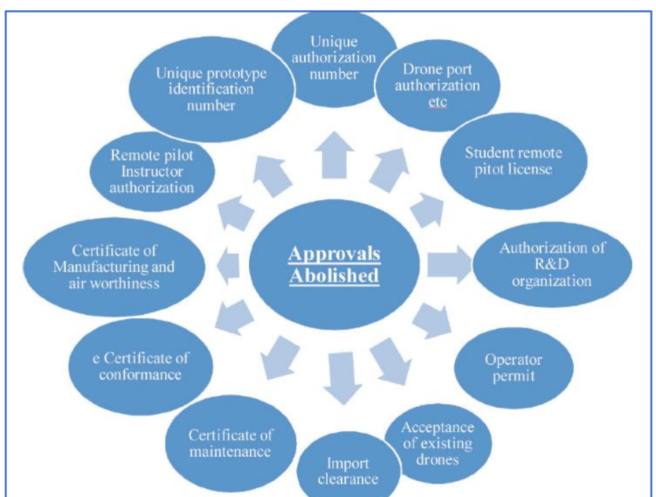
- Government undertook reforms in space sector in 2020, which envisage the private sector to act as a co-traveller in the exploration of outer space and also in providing space-based services.
- The first step taken was empowering New Space India Limited (NSIL)-the Public Sector Undertaking (PSU) in this sector –to "own" the operational launch vehicles and space assets of ISRO.
- The second step was the creation of an independent nodal agency under the Department of Space, Indian National Space Promotion and Authorization Centre (IN-SPACe), which shall act as the promotor and regulator of space activities in India by NGPEs (Non-government/private entities).
- The third step has been in providing an enabling regulatory regime for space activities in the country. The first to be updated were the SpaceCom and SpaceRS policies, further liberalizing the traditional Satellite Communication and Remote Sensing sectors.
- At present, India accounts for only about 2 per cent of the space economy, much behind the major players – USA and China.

Number of Start-ups in Space Sector

Year	No of start-ups
2012	1
2013	1
2014	1
2015	3
2016	1
2017	8
2018	7
2019	11
2020	21
2021	47
Total	**101**

Key Features Of Drone Rules 2021 Include:

- Several approvals abolished; with the total forms to be filled reduced from 25 to 5.
- Type of fees reduced from 72 to 4.
- Drones up to 500 kg are now subject to regulations, compared to the earlier limit of 300 kg.
- A Digital Sky platform is being developed as a single-window platform for one-step and one-time clearances for drone ownership and operation.
- Foreign-owned and controlled Indian companies can conduct drone operations in India. Import of drones will be regulated by Directorate General of



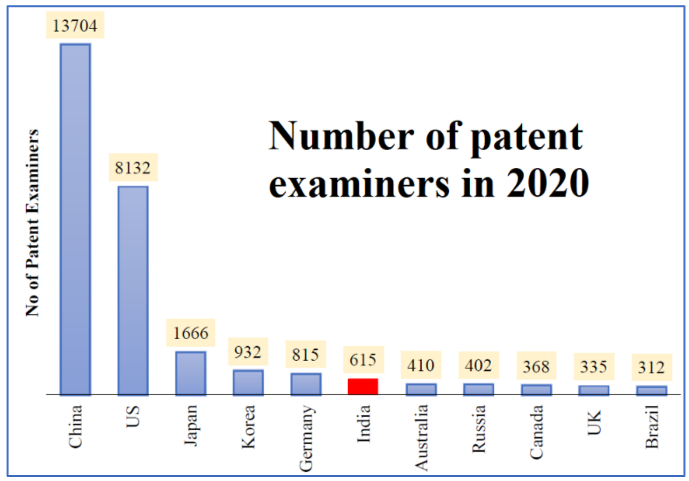
Foreign Trade (DGFT).

Revised Guidelines for Acquiring and Producing Geospatial Data

- All entities are now required to follow a self-certification process to show adherence to the guidelines, as opposed to obtaining prior approval or licenses for the use of geospatial data and maps.
- Mapping activities are prohibited only for specific attributes of highly sensitive locations, as opposed to restricted areas under the previous regime.
- The guidelines permit the export of maps with resolutions up to a 1:100 resolution thereby relaxing the previous threshold of 1:250000.
- The guidelines require all geospatial data produced using public funds, including data produced by the Survey of India, to be freely accessible to all Indian entities, for scientific, economic and developmental purposes.

Patents

- Number of patents filed in India has gone up from 39,400 in 2010-11 to 45,444 in 2016-17 to 58,502 in 2020-21 and the patents granted in India has gone up from 7,509 to 9,847 to 28,391 during the same time period.
- Share of Indian residents in total applications has increased from 20 per cent in 2010-11 to around 30 per cent in 2016-17 and 40 per cent in 2020-21. Consequently, India's ranking in ***Global Innovation Index*** has climbed 35 ranks, from 81st in 2015-16 to 46th in 2021.

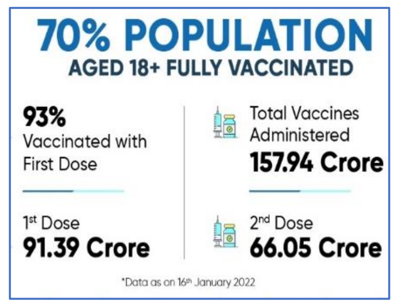


- *Note: Global Innovation Index is published by World Intellectual Partnership in partnership with Portulans Institute. The index aims to capture metrics and methods that could capture a picture of innovation in society. The index is based on 7 parameters of (i) Institutions (ii) Human capital and research (iii) Infrastructure (iv) Market Sophistication (v) Business Sophistication (vi) Knowledge and technology outputs (vii) Creative outputs.*
- But the number of patents granted in India is still a fraction compared to patents granted in China, USA, Japan, and Korea.
- One of the key reasons for relatively low patents in India vis a vis USA, China, etc is India's low expenditure on Research and Development (R&D) activities, which was 0.7 per cent of its GDP in 2020.
- Secondly, delay in India's patent application is also due to the low number of patent examiners in India.

11. SOCIAL INFRASTRUCTURE AND EMPLOYMENT

INDIA'S HEALTH SECTOR RESPONSE TO THE COVID-19

- India having already faced two COVID-19 waves, with the first peak in September 2020 and the second peak in May 2021, is currently facing the third wave led by the Omicron variant.
- To save lives, Government adopted a multi-pronged approach viz., (i) restrictions/partial lockdowns, (ii) building capacity in health infrastructure, (iii) COVID-19 appropriate behaviour, testing, tracing, treatment, and (iv) vaccination drive.
- **Indian National COVID Vaccination Program**, one of the world's largest vaccination programs, has not only supported production of COVID-vaccines domestically, but it has also ensured free vaccines to its population - world's second largest population.
- **National Expert Group on Vaccine Administration for COVID-19 (NEGVAC)** on the basis of concurrent scientific evidence guided the program.
- **Union Budget for 2021-22** allocated Rs. 35,000 crore for procurement of vaccines under COVID-19 Vaccination Program.
- From 16th January, 2021, as on 16th January 2022, a total of 157.94 crore doses of COVID-19 vaccines, have been administered: 91.39 crore first dose and 66.05 crore second dose.
- With these, 93 percent of 18 year and above aged persons have been vaccinated with first dose and about 70 percent with second dose.
- From 3rd November 2021, a campaign, **'Har Ghar Dastak',** has been initiated to identify and vaccinate those who missed 1st dose and due for 2nd dose through house-to-house mobilisation activity.



- **ArogyaSetu mobile app** was launched to enable people to assess themselves the risk of their catching the COVID-19 infection.
- DRDO developed **SPO2 based Oxygen Cylinder Controller (SPOCC)** based Medical Oxygen Cylinders to optimally use the available medical oxygen for COVID-19 patients.

TRENDS IN SOCIAL SECTOR EXPENDITURE

- Government's spending on social services increased significantly during the pandemic.
- In 2021-22 (BE), Centre and State governments earmarked an aggregate of Rs. 71.61 lakh crore for spending on social service sector; an increase of 9.8 percent over 2020-21.
- During the last five years, social services accounted for about 25 percent of the total Government expenditure (Centre and States taken together). In 2021-22 (BE), it was 26.6 percent.
- Expenditure on health sector increased from Rs. 2.73 lakh crore in 2019-20 (pre-COVID-19) to Rs. 4.72 lakh crore in 2021-22 (BE), an increase of nearly 73 percent. For the education sector, the increase during same period was 20 percent.
- **National Health Policy, 2017** envisaged to increase government's health expenditure to 2.5 percent of GDP by 2025. In keeping with this objective, Central and State Governments' budgeted expenditure on health sector reached 2.1 percent of GDP in 2021-22, against 1.3 percent in 2019-20.

EDUCATION

School Infrastructure

- Priority to drinking water and sanitation in schools under Jal Jeevan Mission, Swachh Bharat Mission as well as under Samagra Shiksha Scheme has been instrumental in providing required resources.
- Under the Information & Communication Technology (ICT) component of the Samagra Shiksha Scheme, Government supports the establishment of smart classrooms, and ICT labs in schools, including support for hardware, educational software and e-content for teaching.

Total number of schools, colleges, and universities in India

Particulars	2018-19	2019-20
Primary & Upper Primary schools (in lakhs)	12.37	12.22
Secondary and Sr. Secondary Schools (in lakhs)	2.76	2.85
Colleges (numbers)	39931	42343
Universities (numbers)	993	1043

School Enrolment

- In 2019-20, 26.45 crore children were enrolled in schools.
- During the year, schools enrolled about 42 lakh additional children, out of which 26 lakh were in primary to higher secondary levels and 16 lakh were in pre-primary as per Unified District Information System for Education plus (UDISE+) database.
- The enrolments increased across all levels viz., upper-primary, secondary, and higher secondary, except for primary level.
- At primary level, enrolment reduced from 13.5 crore in 2012-13 to 12.2 crore 2019-20. This decline in enrolment was because of decline in total number of children in the age group 6-10 years.

School Drop-out: ASER

- Annual Status of Education Report (ASER) found that despite the pandemic, enrolment in age cohort of 15-16 years continued to improve as number of not enrolled children in this age group declined from 12.1 percent in 2018 to 6.6 percent in 2021.
- However, ASER (Rural) report also found that during pandemic, children (age 6-14 years) 'not currently enrolled in schools' increased from 2.5 percent in 2018 to 4.6 percent in 202113.
- The enrolment decline was relatively large among the younger age group (age 7-10 year); decline of enrolment for younger boys was higher than girls.
- During pandemic, children in rural areas have moved out of private to government schools in all three age groups.

Major Initiatives for Students during COVID-19 pandemic

- **PM e-VIDYA**: Launched in May 2020, PM e-Vidya *unifies all efforts related to digital/online/ on-air education to enable coherent multi-mode access to education*. The four components of PM e-VIDYA for school education are:

One Nation, One Digital Education (DIKSHA) Platform

One Class, One TV channel through Swayam Prabha TV Channels

Extensive use of Radio, Community Radio and Podcasts

One DTH channel is being operated specifically for hearing impaired students in sign language

- **Vidyanjali:** To connect the Government and Government aided schools through a community/ volunteer management program, the government has launched Vidyanjali on 7th September, 2021.

- **NIPUN Bharat Mission:** On 5th July 2021, government launched a National Mission on Foundational Literacy and Numeracy called "National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat)" .
- **Pradhan Mantri Poshan Shakti Nirman (PM POSHAN) Scheme:** The Scheme, earlier known as 'National Programme for Mid-Day Meal in Schools", covers all school children studying in Balvatika (just before class I) and Classes I-VIII in Government and Government-Aided Schools.

Higher Education

- Gross enrolment ratio in higher education recorded at 27.1 percent in 2019-20, slightly higher from 26.3 percent in 2018-19.
- For males, it has also increased from 26.3 percent in 2018-19 to 26.9 percent in 2019-20 while for females it has increased from 26.4 percent to 27.3 percent respectively.

Recent Initiatives in Higher Education

- **National Apprenticeship Training Scheme** (NATS) has been extended for the next five years with an outlay of Rs. 3054 crore which will *make, through apprenticeship, around 9 lakh students employable*.
- **Academic Bank of Credit,** launched on 29.07.2021, would digitally store the academic credits earned from various recognized Higher Educational Institutions (HEI) such that credits so earned can be accounted for award of degree by any given HEI.
- ***e-PGPathshala***: 154 Universities have come on board for accepting credit transfer for courses offered through SWAYAM platform till now. In this regard, the e-PGPathshala has been offered as an Online Gateway of Post Graduate Courses.
- **Unnat Bharat Abhiyan** has been launched to cater the rural local needs by leveraging higher education.

SKILL DEVELOPMENT

- Periodic Labour Force Survey (PLFS) 2019-20 shows that formal vocational / technical training among youth (age 15-29 years) and working population (age 15-59 years) have improved in 2019-20 over 2018-19.
- The improvement in skills has also been for males and females, both in rural and urban sectors. However, formal training for males and females is lower in rural than in urban areas.
- As per the report of first quarter (April-June, 2021) of Quarterly Employment Survey (QES) in respect of establishments employing at least 10 workers in major nine sectors, 17.9 percent of estimated establishments were imparting formal skill training.
- Sectors such as IT/BPO imparted skill training in 29.8 percent of estimated establishments, followed by 22.6 percent financial services and 21.1 percent education sector's establishments.

National Education Policy 2020: Initiatives/Targets

- At least 50 percent of school learners to get exposure to vocational education by 2025.
- Considering students in vocational education while arriving at the Gross Enrolment Ratio (GER) targets.
- Secondary schools to collaborate with ITIs, polytechnics, local industry.
- Making vocational knowledge developed - 'Lok Vidya' to students through integration into vocational education courses.
- Ministry of Education to constitute a National Committee for the Integration of Vocational Education (NCIVE).

Initiatives Under Skill India Mission

- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** has two training components, viz., Short Term Training (STT) and Recognition of Prior Learning (RPL). PMKVY also provided training to Shramiks (migrant labourers) affected by COVID-19.
- **Recognition of Prior Learning (RPL):** RPL's objectives are:
  - **to align the competencies of the unorganized workforce of the country with the standardized National Skill Qualification Framework**
  - **to enhance the opportunities for employment & provide alternative means for higher education**
  - **to provide opportunities for reducing inequalities**
- **Jan Shikshan Sansthan (JSS) Scheme** aims to provide vocational skills to non-literate, neo-literates, persons with rudimentary level of education up to 8th and school dropouts up to 12th standard in the age group of 15-45 years.
- **National Apprenticeship Promotion Scheme (NAPS)** promotes apprenticeship training and the engagement of apprentices by providing financial support to industrial establishments undertaking apprenticeship program under The Apprentices Act, 1961.
- **Craftsmen Training Scheme (CTS)** is for providing long-term training in 137 trades through 14,604 Industrial Training Institutes (ITIs) across the country.

Aatmanirbhar Skilled Employees Employer Mapping (ASEEM) Portal

- ASEEM, a digital platform, created to match supply of skilled workforce with the market demand, acts as a directory of skilled workforce.
- The Portal consists of three IT based AI (artificial intelligence) driven interfaces for stakeholder interactions:
  - A job application for individuals with access to hyper local jobs using machine learning and automated match based on persona.
  - A demand and campaign management system for employers to forecast the current and future demand.
  - A management dashboard for analytics and insights. This could also be used for future decision making.

India International Skill Centre (IISC) Network

- IISC Network is catering to the needs of foreign countries where Indian workforce is in demand.
- The IISC Network is a fee-based market driven model; providing incremental skill training on international standards and assessment of skills for overseas employment.

Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi Yojana (PM-DAKSH)

- PM-DAKSH Yojana is a national action plan for skilling of marginalized persons including scheduled castes, backward classes and safai karamcharis.
- The eligible target group are being provided skill development training programmes on (i) up-skilling/re-skilling (ii) short term training programme (iii) long term training programme and (iv) entrepreneurship development program.

TRENDS OF EMPLOYMENT

Trends in Urban Employment Using Quarterly PLFS Data

- Periodic Labour Force Survey (PLFS) is the comprehensive Government dataset used to analyse the trends in labour market.

- In the first quarter of 2020-21, the unemployment rate for urban sector rose to 20.8 percent. The LFPR and WPR in urban sector also declined significantly during this quarter.
- With the revival of economy in the subsequent quarters of 2020-21, all three labour market indicators – LFPR, WPR and UR – showed a swift recovery.

Terminologies

- **Labour force participation rate (LFPR)** is defined as the percentage of population in the labour force. Labour force comprises of persons who were either working (employed) or seeking work (unemployed).
- **Worker population ratio (WPR)** is defined as the percentage of employed persons in the total population.
- **Unemployment rates (UR)** is defined as the percentage of unemployed persons in the labour force.

Trends In Urban Employment Using EPFO Payroll Data

- Broadly, the Employees' Provident Fund Organisation (EPFO) data covers the low paid workers in medium and large establishments of formal sector19.
- The net addition in EPFO subscriptions is an indicator of the extent of formalisation of the job market, and the coverage of social security benefits to the organized/ semi-organized sector workforce.
- An analysis of the latest EPFO data suggests significant acceleration in formalisation of the job market, driven by both new formal jobs and formalisation of existing jobs, during 2021, with 13.95 lakh net addition to EPF subscribers in November 2021.

Trends In Data On Demand For Work Under MGNREGS

- The demand for work under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is an indicator of rural labour markets.
- An analysis of the latest data on demand for work under MGNREGS suggests the following trends in the rural labour market:
  - MGNREGS employment peaked during the nation-wide lockdown in 2020;
  - the demand for MGNREGS work has stabilized after the second COVID wave;
  - aggregate MGNREGS employment is still higher than pre-pandemic level.

Long-Term Trends In Employment Using Annual PLFS Data

- During Periodic Labour Force Survey (PLFS) 2019-20 (survey period from July 2019 to June 2020), employment at usual status continued to expand.
- Between 2018-19 and 2019-20, about 4.75 crore additional persons joined the workforce. This is about three times more than the employment created between 2017-18 and 2018-19.
- The rural sector contributed much more to this expansion relative to the urban sector (3.45 crore in rural sector and 1.30 crore in urban sector).
- Further, amongst the additional workers, 2.99 crore were females (63 percent). About 65 percent of the additional workers joined in 2019-20 were self-employed.
- About 75 percent of the female workers who joined as self-employed were 'unpaid family labour.' About 18 percent of the additional workers were Casual labourer and 17 percent were 'Regular Wage/Salaried Employee'.
- Further, the number of unemployed persons in 2019-20 has also decreased by 23 lakhs, constituted largely by males from the rural sector.
- Of workers added in 2019-20 shows that more than 71 percent were in the agriculture sector. Among the new workers in the agriculture sector, females account for about 65 percent.

Policy Responses To Boost Rural Livelihood

Aatmanirbhar Bharat Rojgar Yojana (ABRY)	• Aatmanirbhar Bharat Rojgar Yojana (ABRY) was announced as a part of Aatmanirbhar Bharat 3.0 package to increase the employment generation in post COVID recovery phase. • Under ABRY, the Government of India is crediting for a period of two years both the employees' share (12 percent of wages) and employers' share (12 percent of wages) of contribution payable or only the employees' share, depending on employment strength of the EPFO registered establishments.
Garib Kalyan Rojgar Abhiyaan	• To boost employment and livelihood opportunities for returnee migrant workers, Garib Kalyan Rojgar Abhiyaan was launched in June 2020. • It focused on 25 target-driven works to provide employment and create infrastructure in the rural areas of 116 districts of 6 States with a resource envelope of Rs 50,000 crore.
DAY-NRLM	• The Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM), launched in 2011, seeks to alleviate rural poverty through building sustainable community institutions for the poor. • The programme targets to mobilise about 9-10 crore households into Self Help Groups (SHGs).
Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM) Yojana	• Launched on 05.03.2019, it is a voluntary and contributory pension scheme for providing monthly minimum assured pension of Rs. 3,000 on attaining the age of 60 years. • The workers in the age group of 18-40 years having monthly income of Rs. 15000 or less and not a member of EPFO/Employees' State Insurance Corporation (ESIC)/National Pension Scheme (NPS) (Govt. funded) can join the scheme.
National Pension Scheme for Traders, Shopkeepers and Self-Employed Persons	• Launched on 12.09.2019, it is a voluntary and contributory pension scheme for providing monthly minimum assured pension of Rs. 3000 after attaining the age of 60 years. • The traders, shopkeepers and self-employed persons in the age group of 18-40 years with an annual turnover not exceeding Rs. 1.5 crore and are not members of EPFO/ESIC/NPS (Govt. funded)/PM-SYM or not an income tax payer, can join the scheme.

e-SHRAM Portal

- e-SHRAM portal has been launched to create a National Database of Unorganized Workers (UWs). One of the main objectives of this portal is to facilitate delivery of Social Security Schemes to the workers.
- This database is seeded with Aadhaar and for age group between 16-59 years.
- As on 18 January 2022, over 22.85 crore workers have been registered on the e-SHRAM portal. Uttar Pradesh (34.9 percent) is the leading state in the share in number of registrations.

Status of Labour Reforms

- In 2019 and 2020, 29 Central Labour laws were amalgamated, rationalized and simplified into four labour codes, *viz.,* the Code on Wages, 2019, the Industrial Relations Code, 2020, the Code on Social Security, 2020, and the Occupational Safety, Health & Working Conditions Code, 2020.
- As on 11.01.2022, 26 States/UTs have pre-published the draft rules under the Code on Wages, 22 States/UTs under Industrial Relations Code, 20 States/UTs under Code on Social Security, and 17 States/UTs under OSH & WC Code.

HEALTH

Programmes and Schemes for Health Sector

- **Ayushman Bharat Health and Wellness Centres (AB-HWCs):** The first component of Ayushman Bharat is creation of 1,50,000 Health and Wellness Centres (HWCs) which cover both, maternal and child health services and non-communicable diseases, including free essential drugs and diagnostic services.
- **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY):** The second component of Ayushman Bharat is PM-JAY. The scheme provides a health cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization to over 10.74 crores poor and vulnerable families in the bottom 40 percent of the Indian population.
- **PM-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM)** is a mission to develop the capacities of primary, secondary, and tertiary care health systems and create new institutions, to detect and cure new diseases.
- **Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)** is being implemented to correct regional imbalances in the availability of affordable reliable tertiary healthcare services. Under PMSSY, construction of 22 new All India Institutes for Medical Science (AIIMS) and 75 Government Medical College up-gradation Projects has been approved.
- **Ayushman Bharat Digital Mission (ABDM)**, erstwhile National Digital Health Mission (NDHM), was announced on 27th September, 2021 with the aim to develop the backbone necessary to support the integrated digital health infrastructure of the country.
- **e-Sanjeevani:** In wake of COVID-19 pandemic, Ministry of Health and Family Welfare upgraded eSanjeevani application to enable patient-to-doctor tele-consultation to facilitate health services to all citizens in the confine of their homes free of cost.

Progress on Social and Health Indicators

	NFHS-4 (2015-16)	**NFHS-5 (2019-21)**
Total Fertility Rate (Children per women)	2.2	2
Sex ratio at birth for children born in the last five years (females per 1,000 males)	919	929
Infant Mortality Rate (per 1000 livebirths)	40.7	35.2
Under-five Mortality Rate (per 1000 livebirths)	49.7	41.9
Institutional Birth (%)	78.9	88.6
Pregnant women age 15-49 who are anaemic (%)	50.4	52.2
Population living in households that use an improved sanitation facility (%)	48.5	70.2
Households using clean fuel for cooking (%)	43.8	58.6

DRINKING WATER AND SANITATION

Jal Jeevan Mission (JJM)

- Rolled out in August 2019, JJM envisioned to provide adequate safe drinking water through individual household tap connections to all households in rural India by 2024.
- Six states/ UTs have achieved the coveted status of 100 percent households with tap water supply, namely Goa, Telangana, A & N Islands, Puducherry, Dadra and Nagar Haveli and Daman and Diu and Haryana.

Features Of Jal Jeevan Mission Are:

- Shift of focus for water supply from 'habitations (hand pumps, public standposts, etc. at a reasonable distance) to households' (functional tap in house).
- Not limited only to creation of water supply infrastructure, focus is on assured supply of potable water – 'service delivery' & 'functionality' –to every home.
- Central role of women: minimum 50 percent members of Village Water & Sanitation Committee (VWSC)/ Pani Samitis are to be women and proportionate representation of weaker sections of society.
- Priority is for quality affected areas, villages in drought prone and desert areas, Sansad Adarsh Gram Yojana (SAGY) villages, to provide functional tap connection to Schools, Anganwadi centres, GP buildings, Health centres, wellness centres and community buildings.

Swachh Bharat Mission (Grameen) [SBM-G]

- Open Defecation Free (ODF) Plus under Phase II of SBM(G) is being implemented from 2020-21 to 2024-25 with a goal of making all the villages Open Defecation Free (ODF) through convergence between different verticals of financing and various schemes of Central and State Governments.
- Focus of phase II with a total outlay of Rs 1,40,881 crores is ODF sustainability and Solid & Liquid Waste Management.
- As per the recently released findings of the fifth round of the National Family Health Survey, 2019-21 (NFHS-5), population living in households that use an improved sanitation facility has increased from 48.5 percent in 2015-16 to 70.2 percent in 2019-21.

ELECTRICITY AND CLEAN COOKING FUEL

- Government has made efforts to increase access to clean fuel for cooking through the Pradhan Mantri Ujjwala Yojana (PMUY).
- As per NFHS-5, 58.6 percent of households were using clean fuel for cooking in 2019-21, a significant increase from 43.8 percent in 2015-16.
- Government has made efforts through schemes such as SAUBHAGYA Yojana to ensure 'Power for all.' As per latest NFHS, households with electricity have increased from 88 percent in 2015-16 to 96.8 percent in 2019-21.

RURAL DEVELOPMENT

Pradhan Mantri Awaas Yojana-Gramin (PMAY-G)

- PMAY-G, launched on 20th November 2016, envisages 'Housing for All by 2022' through a robust monitoring mechanism and improved scheme architecture.
- It aims to provide assistance for construction of 2.95 crore houses. In first phase from 2016-17 to 2018-19, one crore houses were taken up.
- Under phase II, assistance is being provided for construction of remaining 1.95 crore houses in 2019-20 to

2021-22.

- As on 18th January 2022, 2.17 crore houses have been sanctioned and 1.69 crore houses completed against a target of 2.63 crore houses till 2021-22.
- Under PMAY-G, landless beneficiaries are accorded highest priority in allotment of houses.

Pradhan Mantri Gram Sadak Yojana (PMGSY)

SCHEME	LAUNCHED (EXTENDED)	OBJECTIVES
PMGSY-I	2000 (up to Sept, 2022)	To provide connectivity to eligible unconnected habitations with a population of 500+ in plain areas and 250+ in North- Eastern and Himalayan states, , Desert areas, Tribal (Schedule V) areas and selected tribal and backward districts as identified by the Ministry of Home Affairs/ Planning Commission as per Census, 2001.
PMGSY-II	2013 (up to Sept, 2022)	Envisaged consolidation of 50,000 Km of existing rural road network.
RCPLWEA	2016 (up to March, 2023)	To improve the road connectivity in 44 worst affected LWE districts and some adjoining districts in 9 States, viz. Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Telangana and Uttar Pradesh.
PMGSY-III	2019 (up to March, 2025)	Consolidation of 1,25,000 Km existing through routes and Major rural links connecting habitations, inter-alia, to Gramin Agricultural Markets, Higher Secondary Schools and Hospitals.

Impact of PMGSY

- World Bank (2019) in an evaluation of the scheme found that PMGSY roads had a positive impact on human capital formation in rural India.
- Children in middle or high school had 0.7 more years of schooling in 2017; share of babies delivered at home decreased by 30 percent in connected habitations; vaccination among children under the age of four increased by 15 percentage points, with boys and girls benefiting equally.

Multidimensional Poverty

- Using NFHS-4 (2015-16) report, in line with global Multidimensional Poverty Index (MPI), NITI Aayog prepared Multidimensional Poverty Index at the national, for all states and districts of India.
- In 2015-16, 25 percent households were found to be multidimensional poor in India.
- Among states, Bihar had largest (51.91%) multidimensional poor households, followed by Jharkhand (42.16%), Uttar Pradesh (37.79%), Madhya Pradesh (36.65%), Assam (32.67%) and Rajasthan (39.46%).

12. TRACKING DEVELOPMENT THROUGH SATELLITE IMAGES & CARTOGRAPHY

Background

- An important theme of this year's Economic Survey is the use of new forms of data and information for tracking economic activity and development.
- This chapter looks at the use of another kind of data – geo-spatial data and cartographic techniques – to track, compare and represent longer term developments.
- Geospatial maps not only lets users visualize data but also helps users to better understand trends, relationships and patterns.
- The use of maps is not entirely new and previous Economic Surveys have used them for years, but there is now a plethora of information from satellites, drones, mobile phones and other sources.
- Moreover, there has also been a dramatic improvement in cartographic technology that allows for better representation of the information.

Features

- This chapter illustrates some of the interesting ways of depicting geospatial data.
- The maps have been created by combining satellite data over the course of a 12 month period in each year.
- While this chapter has restricted itself to static two-dimensional images due to practical considerations of publication, readers will be aware that dynamic and multi-dimensional cartography is now commonplace for every-day activities like ordering a taxi or looking for an address.

Environment

- Satellite imagery is used to show annual water storage cycle at Stanley Reservoir, Tamil Nadu.
- Using satellite imagery, Maps illustrate wasteland redeployment in Andhra Pradesh and Gujarat.

Maps on Agriculture

- The maps also depict change in net sown area of India over the last 15 years.
- The images compare the Kharif crop cycle in Moga district, Punjab during 2005 and 2021. The images show that Kharif sowing cycle has shifted ahead by around two-to-three weeks causing the Kharif harvest to almost coincide with Rabi sowing in November.
- The closing of the gap is a likely factor that encourages farmers to burn stubble and may be related to restrictions on early transplanting of Kharif paddy.
- These restrictions were introduced in 2009 in order to reduce pumping of ground-water but may have had the unintended consequence of damaging air quality.

Maps on Infrastructure

- Using geospatial and cartographic techniques, the subsequent maps show the extent of physical as well as financial infrastructure development in India.
- This includes expansion of national highways, airports, commercial bank branches, metros, etc.

Maps on Urbanization

- Using new geo-spatial methods, population density of select Indian cities is compared over time, showing the extent of urban expansion in Delhi-NCR and Bangalore between 2001 and 2021.
- Using satellite images, India's night-time luminosity is compared between 2012 and 2021. Night-time luminosity provides an interesting representation of the expansion of electricity supply, the geographical

distribution of population and economic activity, urban expansion as well as growth of ribbon developments between urban hubs.