



QUICK REVISION MODULE (QRM) 2021

**'ECONOMICS: IMPORTANT
DATA/ FACTS / FIGURES FOR
MAINS 2021'**

PURPOSE OF THE ECONOMICS DATA DOCUMENT

The given document pertains solely to important data, which can be used by the student for content enrichment in answers related to Paper-III in UPSC Mains Examination, 2021.

The data contained in the document is a collection and amalgamation of all the important facts and figures.

Further, each point must be treated as independent of the other.

The data for all the topics of economics have been covered therein.

HOW TO MAKE USE OF THE DATA

The data is divided topic-wise and can be used in any question relating to the mentioned topic/ sub-topic. It can be used in the following ways-

- The data can be used in introductions.
- It can be used to support arguments in the body part of the answer.
- Further, recommendations and committee names could be utilized to formulate and/ or enrich conclusions.

For maximum benefit, this material should be used as a source, in addition to the Economic Survey.

Much data has been represented and provided in the form of attractive tables and charts, which will aid the memorization of essential facts and facets and make the same easier. Further, these tables can be emulated as it is in answers in order to increase the visual appeal of the latter.

The student may keep this document as a ready-reference material for quick revisions before the exam.



Economics Data, Paper III- Important Facts and Figures for UPSC Mains 2021

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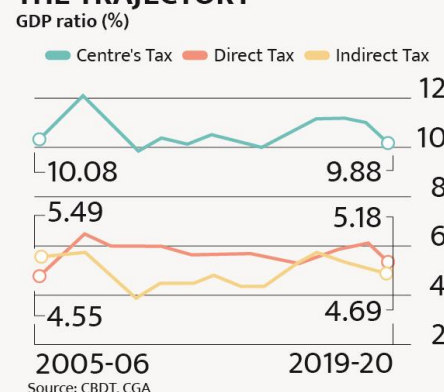
1. Fiscal Policy

1.1. Status of Government Finances

- **Fiscal Deficit: 9.3% of the GDP** is the fiscal deficit for the year 2020-21.
- **Expected Debt to GDP ratio: 61.7%** is the expected debt-to-GDP ratio for India for the year 2021-22.
- **Recommended fiscal deficit: 2.5% of GDP** as fiscal deficit is recommended by the NK Singh committee, to be achieved by 2022-23.
- **Recommended Tax-to-GDP ratio: Less than 60%** as tax-to-GDP ratio is recommended by the NK Singh committee, to be achieved by 2022-23.
- **Higher Revenue expenditure: More than 80%** of the total expenditure is expended as revenue expenditure.
- **Increased reliance on borrowing:** During the 2015-21 period, **20% of the total expenditure** of states has been met through **borrowings**.

SOME IMPORTANT TARGETS OF THE GoI			
S.NO	SECTOR	GOAL	TARGET
1.	Overall economy	\$ 5 trillion	2024
2.	Manufacturing industry	\$ 1 trillion	2025
3.	Disinvestment	₹ 1.75 lakh crore	2021-22
4.	Infrastructure investment	\$ 4.5 billion	2040

THE TRAJECTORY



1.2. Indirect Taxation

- **GST Growth: 12% increase** in indirect tax collection was witnessed to Rs 10.71 trillion in FY21, even as **goods and services tax (GST) mop-up** declined by 8%.
- **Custom duty growth: 21% increase** was witnessed in **Customs duty** collection because of import of CCTV cameras, optical fibres and automobiles and their parts.
- **Excise duty on petroleum and diesel increased** to 65% and 79% respectively.

Tax : GDP → A COMPARISON

INDIA	EMERGING ECONOMIES	OECD ECONOMIES
~17%	~21%	~34.1% (average)

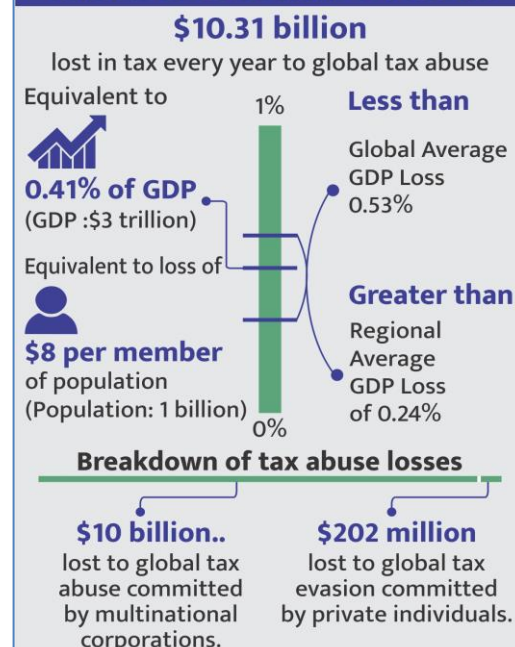
1.3. Direct Taxation

- **Share of direct tax: 55%** of Gross Tax Revenue comes from direct taxes, comprising mainly of corporate and personal income tax (FY21).
- **Value of direct tax collection: Rs 9.45 lakh crore** was India's direct tax collections for FY21 which was 10% lower than the previous year.
- **Moderation in growth and Corporate Tax rate cut** could be the reason for lower tax collections.
- **Tax-filers: About 5.8 crore** individuals filed an income-tax return.
- **Taxpayers: Only 1%** of the India's population paid taxes.
- **Vivad se vishwas: Over 1 lakh taxpayers** opted to settle tax disputes of over Rs. 85,000 crores through Vivad Se Vishwas Scheme until 30th January 2021.

1.4. Financial Mobilization from non-tax sources

- **Disinvestment target:** For 2021-22, the government has set a **disinvestment target of ₹1.75 lakh crore**, over five times what it raised in the FY21.
- **Disinvestment realization: ₹32,835 crore** of disinvestment receipts were generated against expected ₹2 lakh crore.

TAX LOSS INCURRED BY INDIA



- **Non-tax revenue growth: 36% drop** to 2.08 lakh crore was seen in non-tax revenue (collected from interest receipts on loans to States and UTs, dividends and profits from PSEs, RBI surplus, and external grants).
- **Net revenue growth: Decline of 3%** was witnessed in net revenue (tax+non-tax) collection to Rs 16.32 lakh crore.
- **National Monetization Pipeline (NMP):** The total indicative value of NMP for Core Assets of Central Government has been estimated at **Rs 6.0 lakh crore over the 4 year period, FY 2022-2025.**

1.5. State Finance

- **Raised Borrowing Limits:** The Centre has raised borrowing limits for states for the current fiscal to **5% of gross state domestic product (GSDP) from 3% at present.**
- **Expected fiscal deficit:** States expected to reach a fiscal deficit of 3% of by 2023-24, as recommended by the 15th FC.
- **Share of states:** The 15th Finance Commission retains vertical shares of states at 41%.
- **Grants: Rs. 1,18,452 crores** have been provided as Revenue Deficit Grant to 17 states in 2021-22, as against Rs. 74,340 crores to 14 states in 2020-21.
- **Total transfers to states:** Including total grants and tax devolution, **aggregate transfers to States is estimated to remain at around 50.9 per cent of the divisible pool during 2021-26 period.**

Investments → Private Investment

Time period	Investment Level	Remark
2003-08	~36%	India grew fastest
Now	~29%	Needs to be increased

2. Economic Growth and Development

2.1. Macroeconomic Indicators

- **Size of the economy:** It has grown from about 6 lakh crore in 1991 to **140 lakh crore in 2021.**
- **Forex reserves:** Forex reserves in India in 2021 has reached a record mark **\$ 642 billion.**
- **Inflation: 6.6%** was the averaged headline CPI inflation in 2020-21 (Apr-Dec).
- **Remittances:** Indian diaspora contributed over **\$83 billion (growth of 5.5%) in 2019** in terms of remittances.
- **Effect of COVID-19:** India's GDP is estimated to contract by 7.7 % in FY2020-21, composed of a sharp 15.7 % decline in first half and a modest 0.1 per cent fall in the second half.
- **Investment level:** India Investment accounts for about **29% of the Nominal GDP.**
- **Stagnation of investment:** Private corporate investment at approximately 11.5% of GDP between 2011-12 and 2017-18 has stagnated at this level.

GOVERNMENT INTERVENTION IN THE MARKET

INDEX	INDIA'S RANK AMONG COUNTRIES
Index of Economic Freedom (by Heritage Foundation)	121/178 (most unfree)

2.2. Human Development

- **Human Development Report (HDR) 2020-** India ranked 131 among 189 countries.
- **Expenditure on health:** Increase in public healthcare spending from **1% to 2.5-3% of GDP.**
- **Expenditure on social services** (education, health and other social sectors) by Centre and States combined as a proportion of GDP **increased from 6.2 to 8.8 per cent** during the period 2014-15 to 2020-21 (BE).
- **Strengthening of Schools:** 15,000 schools will be qualitatively strengthened to include all components of the National Education Policy, 2020.
- **Poverty levels:** Human Development Report (HDR) 2020 estimates that Covid-19 pandemic may have pushed some **100 million people into extreme poverty**, the worst setback in a generation.
- **Gender Budget:** Gender budget outlay in the Union Budget 2021-22 accounts for merely **4.4 percent of the total budgetary expenditure and 0.7 percent of GDP.**



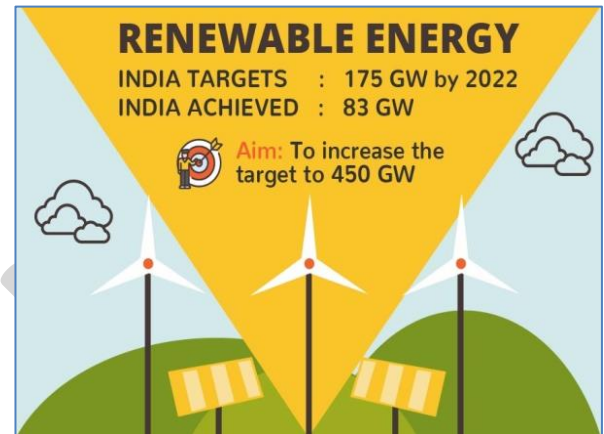
2.3. Urban Planning and Transformation

- **Urban population estimation:** By 2030, it is estimated that around 42% of India's population would be urbanised from the current 31%.
- **Pradhan Mantri Awas Yojana- Urban (PMAY-U):** 1.12 crore houses sanctioned, and more than 50 lakh houses completed.
- **AMRUT:**
 - **Water:** 105 lakh household water tap and 78 lakh sewer connections have been provided.
 - **Street lighting:** 88 lakh streetlights have been replaced with energy efficient LED lights.
- **Smart City Mission:** 70 Smart cities have developed and operationalized their Integrated Command and Control Centres (ICCCs).

3. Sustainable Development

3.1. Renewable Energy

- **Overall capacity:** 4th largest renewable energy generation capacity in the world.
- **Renewable Energy Potential:** 1,000+ GW Renewable energy potential in India.
- **Installed capacity:** 100 GW Installed renewable energy capacity (as of August 2021)
- **Share of renewable energy:** 22 % of India's total installed power capacity is renewable in nature.
- **Investment:** More than US\$ 42 billion has been invested in India's renewable energy sector since 2014.
- **Growth:** 17.33% was the CAGR of the renewable energy sector in the period 2016-20.



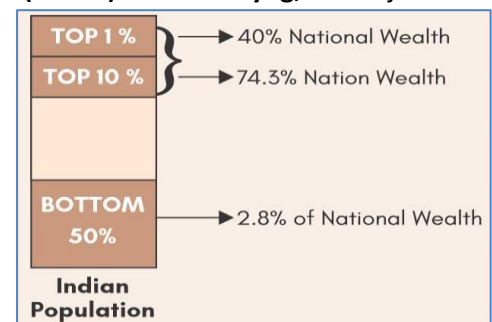
3.2. Environment and Climate Change

- **Climate change and agriculture:** Agriculture production is estimated to decrease by 10-20% by 2050 because of climate change.
- **Desertification:** Nearly 30% of India's land area has been degraded through deforestation, over-cultivation, soil erosion and depletion of wetlands.
- **Forest Cover:** The forest and tree cover have reached 80.73 million hectare which is 24.56% of the geographical area of the country.
- **Water consumption:** India has only about 4% of the world's renewable water resources but is home to nearly 18% of the world's population. The per capita annual water availability has reduced from 1816 cubic metre in 2001 to 1544 cubic metre in 2011.
- **Water scarcity:** According to the Composite Water Management Index (CWMI) of NITI Aayog, 21 major cities will reach zero groundwater levels by 2020, affecting access for 100 million people.

4. Inclusive Growth

4.1. Poverty Alleviation

- **Poverty level:** 364 million people are below poverty line in India.
- **Improvement:** 271 million people came out of poverty between 2005-15.
- **Poverty estimation line:** \$ 1.90 is defined as the global line for extreme poverty.
- **Multi-dimensional poverty (MPI):** India was ranked at 62 out of 109 nations with 27.9% population as multidimensionally poor.
- **Locating the poor:** 40% of the World's poor live in conflict-affected countries.
- **MGNREGA:** It has provided nearly 235 crore person days employment annually on an average in the last three years.



PARADOX OF PLENTY (India) (FOOD SITUATION)

Food per year required	Current food production (2019-2020)	People going hungry per day
230 MT	>290 MT	194 million

4.2. Food Security

- **India's position:** India ranked 101 among 116 countries in **Global Hunger Index (GHI) 2021**.
- **Wastage:** Almost **62,000 tonnes of foodgrains were damaged** in the FCI godowns between 2011-12 and 2016-17.
- **CAPS Storage:** About 30% of the grains are stored in open space covered with tarpaulins under covered and plinth storage (CAPS) system which is exposed to rain, floods etc. deteriorating the grain quality.
- **Cold storage capacity:** India's cold storage capacity is approx. 30 million tonnes while 66 million tonnes is required.
- **Procurement level:** Government procures around 40-50% of the total market surplus of rice and wheat.

4.3. Financial Inclusion

- **Financial access:** According to World Bank data, in 2017, 80% of adults had a bank account.
- **Savings profile:** More than 50% of the household savings still comprise of physical assets.
- **Bank credit to GDP ratio:** Bank credit to GDP ratio in India was 51%; 98% in China in 2016.
- **Pradhan Mantri Jan Dhan Yojana (PMJDY) Accounts:** **42.2 Crore PMJDY** accounts (till March 2021).
- **Deposits in PMJDY:** **1.45 Lakh Crore Rs** deposit under PMJDY accounts (till March 2021).
- **Enrolment in PMJJBY:** **10.65 crore** enrolment under PM Jeevan Jyoti Bima Yojana (till July 2021).
- **Enrolment in PMSBY:** **24.03 crore** enrolment under PM Suraksha Bima Yojana (till July 2021).

4.4. Housing

- **Housing capacity needed:** **3 crore and 1.2 crore** houses are needed in rural and urban areas respectively
- **Number of houses completed:** **52 lakh houses** completed under PMAY (U).
- **Investment in the sector:** **7.5 lakh crore investment** has already been done in the sector.

4.5. Land reforms

- **Farm size:** **1.15 ha** was the average farm size in 2010-11.
- **Land use pattern:** **Less than 10%** of the land is under non-agricultural uses.
- **Conflict over land:** An estimated **7.7 million people in India** are affected by conflict over **2.5 million hectares** of land threatening **investments worth \$200 billion**.
- **Forest area:** **23.3%** of the total geographical areas are forest.

5. Employment, Skill Development and Labour regulations

5.1. Employment

- **Labour Force Participation Rate (LFPR):** According to the Periodic Labour Force Survey (PLFS), 2019-20, the **LFPR was 40.1%**.
- **Unemployment:** **4.8%** of the workforce was unemployed despite seeking active employment.
- **Workforce:** **52 crore** workers make up India's total workforce.
- **Agricultural workforce:** **45.6%** of the workers are employed in agriculture.
- **Female LFPR:** **5.5%** growth rate was seen in the female LFPR.
- **Extent of Informalization:** **Almost 90%** workforce is engaged in hard hit informal sector with no/little social security.
- **Share of informal sector in rural areas** is significantly large (**~75%**) **mainly in areas like agriculture**.
- **Self-employment:** Only 4% of India's self-employed actually hire workers from outside.
 - **Gender pay gap is highest** in the category of those who are **self-employed**. On an average, **male workers earn about 3 times more than the female workers**.
- **Effect of COVID-19 (Global):** Global working hours declined in the first quarter of 2020 by an estimated 4.5 per cent (approximately 130 million full-time jobs).
 - Also, the **earnings of informal workers are estimated to decline by 60% globally** due to the crisis.

WORKING AGE POPULATION		
Country	Year	Expectation
India	2030	1.03 bn
China	2030	0.97 bn
US	2030	0.22 bn

5.2. Skill Development

- **Target:** Increase the formally skilled labour from the **current 5.4% of India's workforce to at least 15%.**
- **Demographic dividend:** **54%** of India's population is below 25 years of age.
- **Availability of demographic dividend:** The **demographic dividend** is expected to last up till **25 years.**
- **Employability:** Only **47%** of those coming out of **higher educational institutions** are **employable.**
- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** **20 lakh** candidates have been **skilled under PMKVY.**

5.3. Labour Regulation Characteristics

- **The share of contract workers** in factories among total workers increased from 26% in 2004-05 to **36% in 2017-18.**
- **Trade Unions:** As of 2015, there were **12,420 registered trade unions in India** with an average membership of 1,883 persons per union.
- **Coverage:** Labour laws only covered the **organized sector that accounts for just 7%** of the workforce, and the remaining 93% of the total workforce is informal that is left uncovered.
- **Gig Economy:** **India leads the global gig economy with a 24% share of the online labour market,** with demand for software developers, creative and marketing professionals.
- **Contract and benefits:** **Periodic Labour Force Survey Report (2018-19)** indicates that 70% of regular wage/salaried employees in the non-agricultural sector did not have a written contract, and 52% did not have any social security benefit.

6. External Sector

6.1. International Trade

- **India's share in global trade:** is less than 2% (**1.7% in 2018**).
 - **India's toy industry** makes less than 1% of the world market.
 - Trade as a share of GDP has grown from 24% in 1960 to 60% in 2015.
 - **700% growth in defence exports** from 2016-17 to 2018-19.
- **Trade deficit:** continuously since 2014-15 with respect to **other major trading partners** i.e. China PRP, Saudi Arabia, Iraq, Germany, Korea RP, Indonesia and Switzerland.
- **India has improved its ranking** from 143 in 2016 to 68 in 2019 under "Trading across Borders", in **World Bank's Ease of Doing Business Report.**
 - Ranked 19th in the list of defence exporters in 2019.
- **India has signed 14 FTAs** between 1993 and 2018.
- **CAD to GDP ratio:** significantly improved between 2009-14 to 2014-19.
- **CAD/forex ratio:** increased from 10.6% in 2013-14 to 13.9% in 2018-19 and caused the rupee to depreciate.
- **The global value chains** today account for nearly 50% of trade worldwide.
 - A 1% increase in GVC participation is estimated to boost per capita income levels by more than 1% -about twice as much as the conventional trade (World Development Report 2020)

6.2. Services

- **India's net services surplus:** has been **steadily declining in relation to GDP**
 - **Range:** India's service exports have consistently hovered between 7.4 to 7.7% of GDP.
 - **Software services** constitute around 40-45%.
- **Service imports** in relation to GDP has been steadily rising over the years.
- **Travel services:** have been steadily increasing.
 - Reflecting the growing attractiveness of global destinations to the domestic tourists in the country.

6.3. Exports

- **Level of Exports:** India's exports are about 18 per cent of GDP.
- **Overall exports:** Merchandise and services combined, in 2019-20 were US\$ 526.6 billion as against US\$ 538.1 billion in 2018-19.
 - **India ranked 18th** on the list of the top exporting countries worldwide in 2019.



- **India's share in world exports** has increased from 0.6% in 1991 to 1.7% in 2018 but remains paltry compared with China's ~13% and US' ~9%.
- **India's share:** in global merchandise exports was 1.7% in 2017, and the services share 3.4% (**WTO data**).
- **Report of the High-Level Advisory Group-**
 - **India's ranking in global exports is lower:** now (between 2012 and 2017) than before in all the sectors-Agriculture, Manufacturing goods, Goods (Merchandise), Services and All trade.
- **Growth in Non-POL** (petroleum, oil and lubricants) **exports dropped:** significantly from 2009-14 to 2014-19.
- **Imports of Electronics** grew the fastest from a negligible share to 3.6% between 2011-12 and 2019-20,



6.4. External Debt

- **India's external liabilities to GDP ratio: significant decline** during 2014-19 as against 2009-14.
- **External debt remains low at 20% of GDP:** Average external debt to GDP ratio of all developing =25.6%. (World Bank, 2020).
- **The share of short term debt** (with original maturity of up to one year) has been falling in total external debt since 2012-13.
- **ECBs turned negative** during 2014-19, from a healthy positive level in 2009-14.

6.5. International Investment

- **Foreign investment:** has remained at **2% of GDP**.
- **Position:** India jumped from 12th position in 2018 to 9th in 2019 on the list of the World's top FDI recipients (**World Investment Report of UNCTAD**).
- **India: 5th largest recipient of FDI** with US being first and China second (next, Singapore).
- **India is biggest FDI host in the sub-region:** with more than 70% of inward stock.
- **10% growth:** of FDI in 2021 compared to 2020.
- **Computer Software & Hardware** has emerged as the top sector during 2020-21 with around 44% share of the total FDI Equity inflow.
- **FPI:** In relation to net FDI, dependence on net FPI to finance the CAD was less in 2014-19 at 17.1% as compared to 45.6% in 2009-14.
- **2014 marks the entry of the Chinese private sector:** at a large scale in India
 - **Subsequent influx of Chinese capital** and investments in infrastructure, automobiles, energy, real estate and consumer goods sectors.
 - **Chinese investors have invested around \$4 billion** into 90 start-ups in India since then, and 18 of the country's 30 unicorn start-ups are funded by Chinese investors.
- **Chinese investment in India has drastically increased:** in the last five years, from US \$1.6 billion in 2014 to at least US \$26 billion in 2019 (both current and planned), in particular in technology start-up segment.

7. Banking and Payment Systems

7.1. Banking

- **Capital to Risk (Weighted) Assets Ratio (CRAR): 15.8%** was the CRAR of Scheduled Commercial Banks (SCBs) in September 2020.
- **Non-Performing Assets (NPA): 7.5%** was the Gross NPA ratio of the SCBs.
- **Provision Coverage Ratio (PCR): 74.4%** was the PCR of SCBs.
- **Lending patterns:** Most of the lending in India is dominated by banks, leaving **India's corporate bond occupying just 16% of the GDP**, compared with 46% in Malaysia and 73% in South Korea.
- **Expansion in the market borrowing** Programme was undertaken by the government due to revenue shortfalls.
- **Weakening of Public Sector Banks:** In 2019, PSBs reported gross and net NPAs of Rs. 7.4 lakh crore and Rs. 4.4 lakh crore respectively, amounting to about 80% of the NPAs of India's banking system. (The gross NPAs of PSBs amount to 11.59% of their gross advances.)



- **Issues in Urban Cooperative Banks:** As of 2019, as many as 277 Urban cooperative banks were reporting losses; 105 UCBs were unable to meet minimum regulatory capital requirements; 47 were having negative net worth and 328 UCB were having more than 15% Gross NPA ratio.

7.2. Asset Quality and management

- **Reducing the bankruptcy resolution time:** The average time taken for resolution was reduced from **4.3 years in 2017 to 1.6 years in 2020**.
- **Improvement in India's 'ease of doing business':** In dia's rank in ease of doing business improved from 155 in 2017 to 63 in 2020.
- **Resolution of cases:** Out of total 32,547 cases filed under IBC in the NCLT, 19,377 have been disposed of (**Close to 45%**).
- **Low recovery rates:** Companies undergoing CIRP have taken a **cumulative haircut of 61.2 per cent of their admitted claims**.
- **Delays:** Among the 13,170 IBC cases pending with the NCLT, 71% of these cases have been pending for more than 180 days.

ASSET CLASSIFICATION AS PER RBI	
SMA-O	Principal or interest payment showing signs of incipient stress but not overdue for more than 30 days
SMA - 1	Principal or interest payment overdue for 31-60 days
SMA - 2	Principal or interest payment overdue for 61-90 days
NPA	Principal or interest payment overdue > 90 days (or 2 crop seasons for short duration crops; 1 crop season for long duration crops)
Substandard Assets	NPAs for ≤ 12 months
Doubtful Assets	Substandard assets for 12 months
Loss assets	Loss is identified but not written off wholly

7.3. Payment Systems

- **Cash transactions:** 89% of all the transactions in volume are still cash-based.
- **Digital payment profile:** 50% volume of India's digital payments is dominated by Debit Cards, PPIs and IMPS.
- **Digital payment value share:** 53% value of India's digital payments is dominated by RTGS and NEFT.
- **Growth in digital transactions:** 22.4 digital transactions were happening per capital in 2019 (from 2.4 in 2014).
- **Participation in UPI:** 261 banks are currently live on the NPCI-UPI platform.
- **Digital illiteracy:** According to NSSO data, only 4.4% of rural households and 23.4% of urban households own computers.
- **Cryptocurrency growth:** Cryptocurrency transaction volumes have been rising and about 8 million investors now hold 100 billion rupees (\$1.4 billion) in crypto investments.

8. Agriculture

- **Target:** Government has set a target of doubling of farmers' income by the year 2022.
- **Production:** India is the 2nd largest agriculture producer in the world and has the largest arable land of 156 million hectares.
- **Ranking:** India ranks within the world's 5 largest producers of over 80% of agricultural produce items, including many cash crops such as coffee and cotton.
- **Resources:** India accommodates more than 17% of the world population and only 4% of fresh water resources, out of which around 80% is used in agriculture alone.
- **Contribution to national GDP:** Agriculture's contribution to national GDP has declined from 34% in 1983-84 to just 16% in 2018-19. The growth rate of agriculture has always been lower than the India's GVA growth rate.
- **Dependency:** ~70% of India's rural households still depend primarily on agriculture for their livelihood. 60% of India's total workforce employed here.
- **Share of agriculture and allied sectors in GVA:** has declined was 20.2% in 2020-21.
- **Poor agricultural productivity:** China's agriculture sector is characterized by smallholders' economy, where the arable land in terms of hectares per person is 0.086 as against 0.118 in India. Yet their agricultural productivity is very high compared to India's.

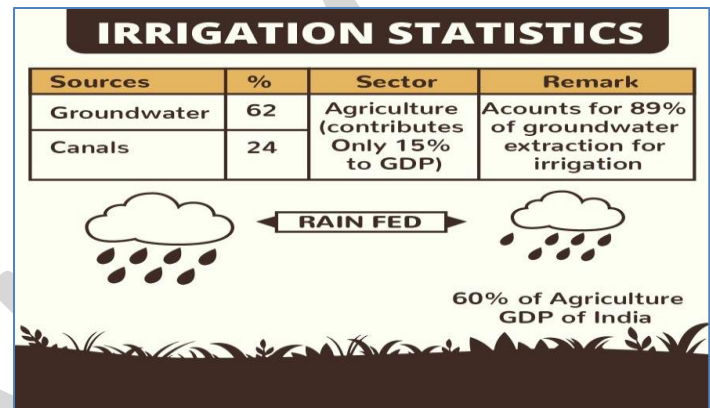
SMALL AND MARGINAL FARMERS	
Individual Land Ownership	< 2 ha
Proportion of farmers	86.2 %
Ownership as a proportion of total cropped area	47.3 %

STATUS OF EDIBLE OIL IN INDIA	
CONSUMPTION	3 RD LARGEST
Production of oilseeds	4 th largest (after USA, China and Brazil)
Current Production (from primary sources)	34 mt
Total Edible oil production	7.31 mt
Estimated Demand	24.5 mt
Oil Import	65-70% of domestic requirements (1990s: < 5%)

- **R&D:** According to Indian Council for Research on International Economic Relations (ICRIER), every rupee spent on agricultural research and development yields better returns (11.2), compared to returns on every rupee spent on fertiliser subsidy (0.88), power subsidy (0.79).
- **Capital investment vs subsidies:** As against subsidies, public money spent on capital investment is expected to be almost 5 to 10 times more successful in terms of the number of people brought out of income poverty.
- **Marginal farmers:** According to **Economic Survey 2019-20**, the share of **marginal farmers increased** from 62.9% in 2000-01 to 68.5% in 2015-16, while **decline in share of small and large farmers**.
- **As per Economic Survey-2016-17**, there is an **inverse relationship** between indebtedness and the size of land holding.
- **Lack of farmer awareness:** According to the CAG, out of 5,993 farmers surveyed, only 37% were aware of the schemes.
 - A survey highlighted that, **81% of the cultivators were aware of MSP** fixed by the government for different crops and out of them only **10% knew about MSP before the sowing season**.

8.1. Agricultural Inputs

- **Mechanization level:** 40%-45% farming in India can be currently called mechanized.
- **Public investments in agriculture** as a percentage of agricultural GDP has declined from 3.9% in 1980-81 to 2.2 % in 2014-15, while **input subsidies** as a percentage of agricultural GDP have increased from 2.8% to around 8% over the same period.
- **Irrigation** consumes ~ 84% of total available water in India. India has already realized over 80% of its irrigation potential.
- **Economic Survey 2018-19** suggests a transition from land productivity to irrigation water productivity.



8.1.1. Fertilizer Industry in India

- India is **second largest consumer** of urea fertilizers after China.
- India also ranks **second in the production** of nitrogenous fertilizers and third in phosphatic fertilizers whereas the requirement of **potash is met through imports** since there are limited reserves of potash in the country.
- **Government spending on fertilizer:** India spent nearly Rs 80,000 crore on fertilizer subsidy in 2018. The government budgeted almost Rs. 730 billion for fertilizer subsidies in 2015, making it the **largest subsidy in absolute terms after food**.
- **N:P:K:** In India, the current consumption of Nitrogen, Phosphorus, and Potassium (NPK) ratio is 6.7:2.4:1, which is **highly skewed towards nitrogen (urea)** as against ideal ratio of 4:2:1
- **Leakages:** ~36% of the fertiliser subsidy is lost through leakage to industry or smuggled across borders. Black market prices are, on average, ~ 61% higher than stipulated prices.

8.1.2. Pesticides

- **Pollution:** According to a recent study, **64% of global agricultural land (~24.5 million km²) is at risk of pesticide pollution** by more than one active ingredient.
- **Pesticide consumption:** Amongst the crops, **paddy** accounts for the maximum share of consumption (26-28%), followed by **cotton** (18-20%).
- **Pesticide poisoning:** In 2019, 6,962 deaths were reported from 7,007 pesticide poisoning cases (NCRB).

8.1.3. Seed Industry in India

- **Soil health cards:** ~20 lakh soil health cards have been issued till date.
- **Seed villages:** 4.29 lakh Seed villages have been created under Seed Village Programme.
- **Market:** India is the **fifth largest** seed market across the globe.
 - **Non-vegetable seeds:** The seed market is majorly contributed by corn, cotton, paddy, wheat, sorghum, sunflower and millets.



- **Direct contribution of quality seed** to the total production can be raised up to 45% by **efficient management of other inputs**.
- **Research investment by private companies** remained at a **meagre 3-4%** of revenue; international norm is of 10-12%
- **Low seed replacement rate**: Continues to remain below the **desired level of 20%** for most crops.
- **Zero Budget Natural Farming**- requires only 10% water and 10% electricity than what is required under chemical and organic farming. **The Economic Survey 2018-19** reported that about **1.6 lakh Indian farmers follow ZBNF**.

8.2. Agricultural Marketing

- **Agriculture infrastructure**- India has limited infrastructure **connecting farmers to markets** and hence, **15-20% of yield is wasted**
 - It is higher than **other countries**, where it ranges between **5-15%**.
- **Around 40% of all fruits and vegetables are wasted in India annually**.
- **Traditional Marketing Methods**: generally start with sale by farmer and involve a **number of intermediaries**. ~ **50% of the agricultural produce** in India is sold via these channels.
- **e-NAM**: Till date, more than 1 lakh traders and over 66,000 commission agents have been registered on the portal.
 - **Trade recorded on the e-NAM portal**: As of 2018, it stood at ~ Rs 50,000 crore, and in terms of volume it was more than two crore tonnes.
- **FPOs**: Currently, there are over 5,000 Farmer Produce Organizations (FPOs) in the country.
 - **Struggling**: 20% of these are struggling to be viable and 50% are in mobilization stage only.

8.3. Agricultural Exports

- **Current status**:
 - India occupies a **leading position in global trade** of agricultural products. **Agri-exports** touched \$41.8 billion in FY 2020-21, registering a **growth of 18%** over the previous year.
 - In 2019, India exported USD 38.7 billion of agricultural goods, which is **only 7%** of Indian agriculture production.
 - **Major export destinations**: USA, Saudi Arabia, Iran, Nepal and Bangladesh.
 - **Major Products**: Rice (both Basmati and non-basmati), spices and cotton.
 - **Other key agriculture commodities exported** from India: marine products, basmati rice, buffalo meat, spices, non-basmati rice, cotton raw, oil meals, sugar, castor oil and tea
 - India's **total agricultural export basket accounts for a little over 2.15%** of the world agricultural trade.
 - **India ranks 13th** in the world in agriculture exports **despite being leading producer** of milk, bananas, mangoes etc. **One key cause of the discrepancy** between rank in production and exports is the large domestic demand of a population of 1.34 bn people.
- **Target**: The Agriculture Export Policy 2018 sets out a target of **US\$ 60+ Billion by 2022**, for agricultural exports, and **US\$ 100 Billion in the next few years**.
- **Declining exports**
 - **Dropped by 10% CAGR** due to a drop in global process and back to back drought in 2014, 2015 and 2016.
 - **From 2013 to 2018, growth has slowed** down relative to the impressive growth of 2009 to 2011.
- **Potential**: India's agricultural export has the potential to grow from USD 40 billion to **USD 70 billion** in a few years.
 - **Employment**: Additional exports are likely to create an estimated **7-10 million jobs**.

INVESTMENT IN AGRICULTURE

INVESTMENT	2012-13	2017-18	REMARK
GCF as a % age of GVA	16.5%	15.2%	Fluctuating trend
Agriculture Credit	Highest	Low	————
	Southern states	North Eastern, Hilly & Eastern states	————

8.4. Agricultural Finance

- **Share of non-institutional credit** still persists at around 28% (National All India Rural Financial Inclusion Survey, 2015).
- **Dependency on scheduled commercial banks** in agricultural & allied credit is still large (~78-80% of the credit).



- ~60% of Small & Marginal Farmers (SMFs) have not been covered by SCBs.
- **The share of co-operative institutions (~15%) and Regional Rural Banks (~5%),** though significant, is **highly skewed geographically.**
- **Overall PSL target of 40%:** So far they have failed to achieve the agriculture target of 18% at system-wide level.
- **KCC penetration:** As per Agricultural Census 2015-16, **only 45% of the farmers possess operative KCCs.**
 - **Existing 10% limit** in KCC scheme for consumption requirements **is inadequate.**
- **Schemes coverage:** Currently, only about 35% of farmers are covered under crop insurance schemes.

8.5. Allied Sectors

- **Ranking:** India is one of the **world's five largest producers** of livestock and poultry meat.
- **Exports:** 37% of India's total exports are contributed by the Horticultural Sector.
- **The Livestock Sector in India**
 - Livestock sector contributes to 34% of total Agriculture GDP (2019-20). It contributed 31.25% of total Agriculture GDP during 2016-17.
 - **Growth:** Compound Annual Growth Rate (CAGR) of 8.15% from 2014-15 to 2019-20/ 7.9 per cent during last five years.
 - **Provides employment** to about 8.8 % of the population in India. About 20.5 million people depend upon livestock for their livelihood.
 - **Provides livelihood** to two-third of rural community.
 - **Contributed 16% to the income of small farm households** as against an average of 14% for all rural households.
- **Second largest poultry market** in the world.
- **Shortage of nutritional fodder:** Hardly 5% of the cropped area in India is utilized to grow fodder.
 - India is a deficit in dry fodder by 11 per cent, green fodder by 35 per cent and concentrates feed by 28 per cent.
- **Animal Husbandry Sector-** received only ~ 12% of the total public expenditure on agriculture and allied sectors, which is disproportionately lesser than its contribution to agricultural GDP.

8.5.1. Dairy Sector

- **Target:** Budget 2020 aimed to double the country's milk processing capacity by 2025. (From 53.5 million tonne to 108 million tonne).
- **Lower productivity:** But the average annual milk yield of Indian cattle is only about 50% of the global average.
- **Importance of dairy sector:** ~50-60% of final value of dairy output in India flows back to farmers. Thus, growth in this sector would directly impact farmer's income.
 - **22% of the global milk production** happens in India.

8.5.2. Minor Forest Produce (MFP) in India

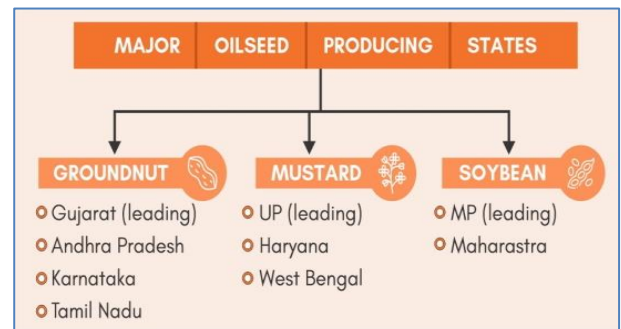
- **Around 100 million forest dwellers depend** on MFP for food, shelter, medicines and cash income. (National Committee on Forest Rights Act, 2011)
- **Tribals derive 20-40% of their annual income** from MFP, on which they spend a major portion of their time.

8.5.3. Fisheries Sector

- **Contribution:** The sector accounts for 6.58% of GDP from agriculture, forestry and fishing.
- **Ranking:** India is **2nd largest producer** in fishery sector.
- **Growth:** In the recent years, the fish production in India has registered an average annual growth rate of more than 7%.
- **Employment:** The sector provides livelihood to ~ 16 million fishers and fish farmers at the primary level and almost twice the number along the value chain.
- **Trade:** Also, the sector is one of the major contributors of foreign exchange earnings with India being one of the **leading seafood exporting** nations in the world.

8.5.4. Oilseeds

- Majority of oilseed growers (more than 85%) are **small and marginal farmers** having poor resource base coupled with non-availability of quality seeds of varieties and hybrids.
- Ministry of Agriculture has set the following targets to be achieved by 2022-23-
 - To take **annual production of edible oils** from current 7.31 mt to **13.69 mt**.
 - Increasing **oilseed production from primary sources** from the current 34 mt to **45.64 mt**.



8.6. The Food Processing Industry

- Growth:** 10% has been the growth rate of the sector in the past 5 years.
- Food Parks:** 22 Mega Food Parks are operational out of 37 approved across the country as on Feb 2021.
- Contribution:** Accounts for around 32% of the country's total food market
 - Contributes ~14% to the manufacturing GDP.
 - 9% of the total Gross Value Added (GVA) in the manufacturing sector.
 - It contributes 10.7% of India's exports and 13% of India's total food exports.
- Growth:** A sunrise industry with more than 10% growth rate in India.
- Employment:** It employs around 25% of the workforce.

9. Mines and Minerals Sector

- The production of major minerals** recorded a growth of 25% in 2018-19 compared to last year in terms of value.
- India produces 95 minerals** which include 4 hydrocarbon energy minerals, 5 atomic minerals (ilmenite, rutile, zircon, uranium, and monazite).
- Criticality:** The mining industry serves as the **base for the power sector**, with around 72% of India's current power being generated through **coal**.
- Development of aspirational districts:** Most of the mines auctioned under new norms are in aspirational districts. These mines would create **more than 69,000 jobs** once they are operationalised.
- Total cumulative accrual** in DMFs across the country was ~ Rs 36,000 crore (January 2020).

10. Industry

- Aim-** Indian manufacturing sector to become a \$1 trillion industry by 2025.
- Current Situation**
 - 16% of GDP** has been the stagnant contribution of manufacturing sector to GDP **since 1991**.
 - Improvement on several internationally reputed indices** such as the Global Competitiveness Index, Logistic Performance Index and the Global Innovation Index has been seen recently.
 - 63rd position in the Ease of Doing Business Index** (from 142nd in 2014).
- Key Targets**
 - Double the current growth rate** of the manufacturing sector **by 2022**.
 - Attract \$100 bn inward FDI** annually and support outward FDI to assert Indian presence in world markets.
- Employment:** In India, at present, there are about 55.8 million enterprises in various industries, employing close to 124 million people. Of these, nearly 14% are women-led enterprises, and close to 59.5% are based in rural areas.
- Construction Sector:** The construction sector accounts for **8.2% of GDP** which includes housing and employs about 12% of the workforce.
- Index of industrial production (IIP) growth moderated:** Overall, IIP growth moved to 3.8% in 2018-19 compared to 4.4% in 2017-18.

10.1. Textiles Sector

- Rank:** Indian textile industry is the **2nd largest manufacturer and exporter** in the world.
- Contributed:** 18.0% of manufacturing and 2.0% of GDP in 2017-18.



- **The sector is the biggest employer after agriculture** and it employs 4.5 crore people directly and 6 crore people in allied sectors.
- **Technical Textiles-** Indian technical textiles segment constitutes around **6% of the \$250 billion global technical textiles market**.
 - TT constitute **12-15% of the total textile value chain** in India (in **European countries, it is 50%**).
 - **The annual average growth** of the segment in India is 12% as compared with world average growth of 4%.

10.2. SEZs

- **Share in exports:** The share of SEZ exports in India's total exports value has grown to around 30% in 2018-19.
- **Sectoral growth:** In SEZs, growth in manufacturing segment was around 4%, while in services segment (constituting majorly of IT & ITes) export growth was 23.69%.
- **Employment:** Since the SEZ Act came into force in 2005, over 2 million jobs have been created, with an incremental annual growth rate of 25.2%.
- **Vacant land:** About half of the land notified for SEZs was unutilized (as of August 2017). Notified SEZs have about 52% of vacant land.
- Recommendations were given by the **Baba Kalyani Committee**

10.3. Network Products

- **Exports:** They accounted for nearly 30% of world exports in 2018.
- **Employment:** Total trade in NPs can be classified into its two main sub-categories - parts & components (P&C) and assembled end products (AEP).
 - AEP is highly labour intensive, which can provide jobs for the masses
 - Domestic production of parts & components (P&C) can create high skill jobs.
- **The survey highlighted** that in 2018, NP exports accounts for 10% in India's export basket, while these products account for about 50% of the total national exports of China, Japan and Korea.
 - Also, among the major Asian countries, India is the only one with trade deficit in NP.
- **Road vehicles:** The main category of NP exported by India is Road vehicles with a share of 4.9% in its total exports in 2018.

10.4. MSME Sector

- **Key Targets**
 - **India's vision** of becoming a \$5 trillion economy is possible when the MSME sector contributes to 50% of GDP.
 - The government is planning to increase the contribution of MSMEs to 50% of GDP by 2024 and create around 15 crore employment by then.
- **Current status:** 6.3 crore MSMEs are currently operational in India.
 - 30% of the country's GDP is contributed by MSMEs.
 - 45% of manufacturing output is contributed by MSMEs.
 - 40% of overall exports are generated by MSMEs.
- **Enterprises:** With about 63.38 million enterprises.
- **Employment:** MSMEs create employment for about **111 million people**.
- **Credit:** Only about 8% of MSMEs are served by formal credit channels.
- **Public procurement** from MSE has been growing 3-4% year-on-year
- **NPAs:** Between December 2017 and December 2019, the non-performing asset (NPA) rate on MSME loans of public sector banks varied between 16.6% and 18.7%

10.5. Electronics Manufacturing

- The sector accounts for about **2.3% of India's GDP**
- **India's share in global electronics manufacturing** grew from 1.3% (2012) to 3.0% (2018).
- **Electronics manufacturing:** India is the **second-largest smartphone manufacturer** in the world after China, and chips are at the center of these devices.
- **The domestic value addition for mobile phones** is expected to witness 35- 40% jump by 2025 from 20-25% now.
 - **CAGR** is of about 25%.



- **Reducing import bill:** India is dependent on imports to meet the demand for chips.
 - India consumed around \$21 billion worth of semiconductors in 2019 (India Electronics and Semiconductor Association (IESA)).

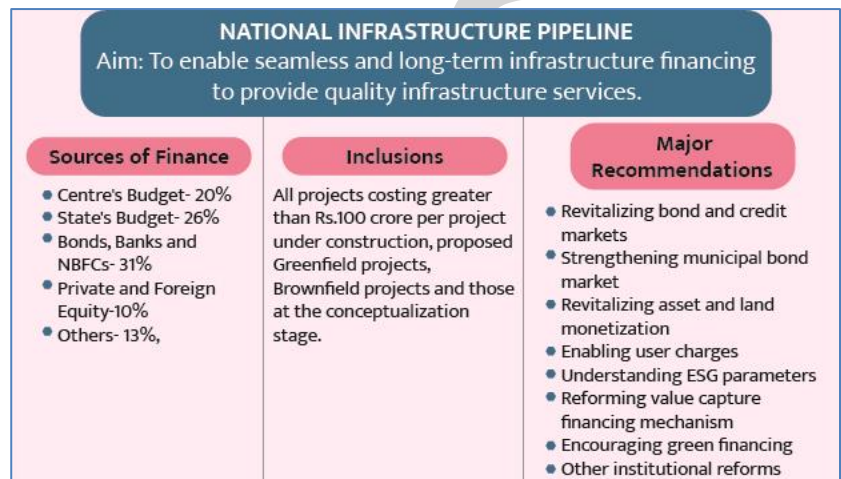
10.6. Steel Sector

- **Ranking:** India stood at **2nd position** in the production of crude steel. (with 6% share in global production)
 - It is also the **third largest consumer** of finished steel after China and USA.
- **The National Steel Policy 2017** projects crude steel capacity of 300 million tonnes (MT), production of 255 MT and a robust finished steel per capita consumption of 158 Kgs by 2030-31
- **Crude steel production-** growth of 1.5%
- **The current supply of scrap** is 25 MT from the domestic unorganized scrap industry and 7 MT from import of scrap.

11. Infrastructure

11.1. General Data

- **Investment needed:** India requires around \$4.5 trillion worth of investments till 2040 to develop infrastructure.
- **Infrastructure Quality:** In World Economic Forum's **Global Competitiveness Index**- India is currently ranked 70 out of 140 countries for its infrastructure quality.
- **Logistics ranking:** According to World Bank's **Logistics Performance Index**, India ranks 44th in 2018 globally, up from 54th rank in 2014. According to the NITI Aayog, a 10% decrease in indirect logistics cost has the potential to increase exports by 5-8%.



11.2. National Infrastructure Pipeline

- **Overall ambition:** The **National Infrastructure Pipeline (NIP)**, worth Rs 102 lakh crores will be implemented by 2025.
- **Projects:** NIP has now been expanded to about 7,400 projects.

12. Services Sector

- **Contribution to the economy:** Accounts for **around 55%** of total size of the economy and GVA growth, two-thirds of total FDI inflows into India and about 38% of total exports.
- **Employment:** It is estimated that the share of services in **total employment** in India will grow to **48% in 2030**.
- **Gross FDI equity inflows** jumped by 33 per cent Year on Year during April- September 2019 to reach US\$ 17.58 billion, accounting for about two-thirds of the total gross FDI equity inflows into India during this period.
- **India now ranks 8th** among the world's largest **commercial services exporters**
- India persistently runs a **trade deficit in education services** with education imports, reaching about US\$ 3 billion in 2018-19.

12.1. E-commerce Sector

- **India has ranked 73rd out of 152** countries in UNCTAD's business-to-consumer E-commerce index 2019.
- **Current Situation**
 - 8th largest e-commerce market globally.
 - Only 5% of India's retail market comprises of E-commerce.
- **Fastest growing market in the world:** Revenue from the India's e-commerce sector is expected to increase from USD 39 billion in 2017 to USD 120 billion in 2020, growing at an annual rate of 51%, the highest in the world.
 - 10 million **internet users are added monthly (majorly from tier-II cities)**.
 - **Future consumers** are set to emerge from India's **tier-2 and tier-3 cities**.



- **Online presence:** As per a Working Paper of United Nations Industrial Development Organization (UNIDO), nearly 43% of the MSMEs participate in online sales in India.
- **Challenges faced by the sector**
 - **Low customer base:** e-commerce remains highly underpenetrated with only 50 million online shoppers.
 - **Low share in retail sales:** As per **World Bank report**, online sales as a percentage of total retail sales were only 1.6% in India, versus over 15% for China and around 14% globally.

12.2. Telecom Sector

- **Ranking:** India is the world's **second-largest telecommunications market** and has the **second-highest number of internet subscribers globally**.
- **Telecom penetration:** also known as tele-density (number of telephone connections for every 100 individuals), has increased to 88% in FY21.
- **The overall tele-density in India** stands at **90.45%**, the rural tele-density being 57.35% and urban tele-density being 160.71%.
- **The wireless telephony** now constitutes 98.27% of all subscriptions whereas share of landline telephones now stands at only 1.73%.
- **Subscriber base:** Telecom industry in India has a subscriber base of **1.17 billion**.
 - **The number of internet subscribers** stood at 6,653 lakh as compared to 2,516 lakh in 2014. Among them, the number of mobile internet subscribers was 6,436 lakh.
- **FDI:** The cabinet allowed **100% foreign direct investment** through the automatic route with safeguards.
 - The Telecom sector is **the 3rd largest sector in terms of FDI inflows**, contributing 7.1% of total FDI inflow.
- **Employment:** The sector contributes directly to 2.2 mn employment and indirectly to 1.8 Mn jobs
- **Debt ridden telecom sector:** Analysts estimate industry debt at over ₹3.6 lakh crore. Large debts- telecom sector is under a debt of around Rs. 4 lakh crores because of various investments related and other activities.
- **High Spectrum usage charges (SUC):** In India, the SUC charge continues in the range of **3% to 6% of the revenue (AGR)**
- **Import dependence-** India imports around 40 billion dollars of telecom equipment including infrastructure to setup 5G technology.
- **A committee headed by Rajiv Gauba** has been setup to help the struggling telecom sector.

12.3. Tourism Industry

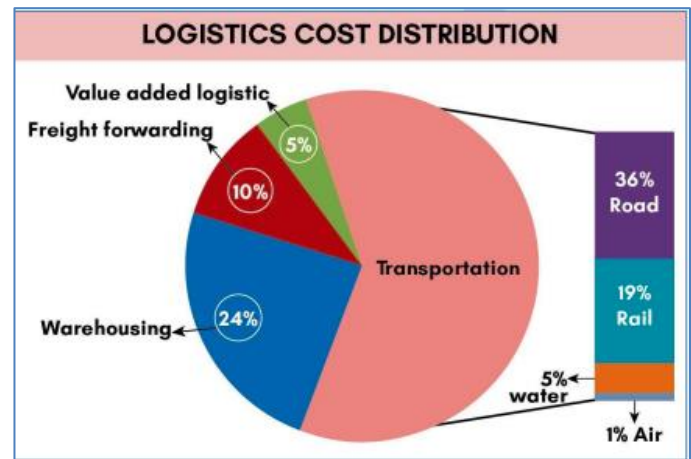
- **Current Situation**
 - 23rd in the world in terms of international tourist arrivals.
 - 12th in terms of foreign exchange earnings.
 - **13% of the total employment** was contributed by the sector.
 - **Contribution:** 5% of country's GDP was contributed by the sector.
 - Expected growth up to Rs 35 trillion by 2029.
- **India ranks 34th out of 140 countries (As per WEF's world travel and tourism competitiveness index 2019).**
- **Strong performance then deceleration:** The sector witnessed a strong performance from **2015 to 2017**, with high growth in foreign tourist arrivals. However, foreign tourist arrivals growth has **decelerated since then**.
- **Leisure, holiday and recreation:** Majority of them (62.4%) visited India for these purposes.
- **Top five states attracting foreign tourists:** **Tamil Nadu, Maharashtra, Uttar Pradesh, Delhi and Rajasthan**; 67% of the total foreign tourist visits.
- **Increase in tourism due to e-visas:** from 4.45 lakh in 2015 to 23.69 lakh in 2018.

12.4. Insurance Sector

- **Average annual growth rate of insurance sector in India:** 12%
- **India's insurance penetration:** 3.7% of GDP, compared to global average of 6.3%.
- **The insurance density** in India has increased from \$11.5 in 2001 to \$78 in 2019.
- **Protection gap** in the insurance industry: 83%, indicating a huge opportunity for the sector.
- **FDI limit** in insurance increased from 49% to 74% in Budget 2021.

13. Transport Sector

- The share of transport sector in the GVA for 2017-18 was 4.77%.
- **Major component of logistics activity:** Transportation accounts for 50- 60% of logistics cost followed by warehousing
 - **The Size of Logistics Industry** in India is \$215 billion.
 - It provides livelihood to more than 22 million people
- **High Logistics Cost:** The Ministry of Commerce & Industry estimates that presently the country spends about 14% of its GDP on logistics which is much higher than Japan (11%) and the USA (9-10%).
- **Mostly unorganized logistics market:** Only 10-15 per cent of the \$215-billion Indian logistics market is owned by organised players.



13.1. Roads

- **Key Targets**
 - Bharatmala Pariyojana: raising freight to 80% on National Highways.
 - Double the length of National Highways (NHs) to 2 lakh km by 2022-23.
 - Widen single/intermediate lane NHs and reduce the length to less than 10% of total length by 2022-23.
 - Improve the regulatory framework for roads.
 - Reduce the number of road accidents and fatalities by 50% by 2020 (Brasilia Declaration).
- **Current Situation**
 - Largest share in both passengers and freight transport.
 - National Highways: 2.2% of the country's total road network are
 - 11% CAGR was seen in registered vehicles in India.
- **Contribution:** The road network transports 64.5% of all goods in the country and 90% of total passenger traffic ambitions.
 - 40% of India's total traffic is carried by the National Highways.
- **Pace of construction:** Grew significantly from 17 kms per day in 2015-16 to 29.7 kms per day in 2018-19.
- **Total investment** in the Roads and Highway sector has gone up more than three times in five year period of 2014-15 to 2018-19.
- **Road safety:** ~ 400 road related deaths being recorded daily.



13.2. Aviation Sector

- **India's ranking improved** in the Travel and Tourism Competitiveness Index from 52nd in 2015 to 34th in 2019.
- **Average domestic fares in India fell** by 70% from their 2005 levels (International Air Transport Association (IATA) Report).
- **Capacity Expansion:** 100 more airports are to be made operational by FY 2023-24.
 - **Aircraft seat capacity:** Airlines in India have scaled up from an estimated 0.07 annual seats per capita in 2013 to 0.12 in 2018.
- **Freight traffic** on airports in India has the potential to reach 17 million tons by FY40.





- **Regional Connectivity Scheme (RCS) airports:** Out of 53, 22 airports have been operationalized in the underserved and unserved areas.
- **A total of 43 airports** have been operationalized **since Udaan scheme** was taken-up.
- **International cargo**, comprising 60% of the total air cargo handled in the country, logged a growth of 15.6%, while domestic cargo grew by only 8%.
- **Indian rupee's depreciation adversely affects** airline carriers. About 25-30% of their costs such as aircraft lease rents, maintenance costs to ground handling, parking charges abroad etc. are dollar denominated.
- **Civil aviation sector-** about **0.25 million persons will have to be skilled** over the next **10 years**.

13.3. Railways

- **Target:** Govt has set a vision of making railways a **100% safe, fast and reliable** mode of transport for passengers and freight.
 - **100% electrification** of broad gauge track by 2022-23 from the 40 per cent level in 2016-17.
 - **Increase the average speed** of freight and mail/ express trains to **50 km/hr and 80 km/hr** respectively.
 - **Zero fatalities** in Railway transport.
 - **Enhance service delivery:** 95% on-time arrivals by 2022-23.
 - **Aims to increase its freight traffic** from 1.1 billion tons in 2017 to 3.3 billion tons in 2030.
- **Current status:** Indian Railways (IR) with over 68,000 route kms is the 4th Largest Railway Network in the world.
 - **World's largest passenger carrier:** 840 crore passengers making it the and.
 - **4th largest freight carrier:** Railways carried 120 crore tonnes of freight
 - **Revenue earned:** USD 25 billion in 2017. Revenue Earning Freight and Passenger Traffic grew at 5.34% and 1.85% respectively.
- **Swachh Rail, Swachh Bharat:** Number of bio-toilets has increased from about 20,000 in 2015 to 2.25 lakh in 2019.
- **Need for finance:** Union Budget 2019-2020 stated that Rs 50-trillion investment is required in the railways by 2030.
- **Over-stretched infrastructure** with 60% plus routes being more than 100% utilized, leading to reduction in average speed of passenger and freight trains.
- **High operating ratio** of 98.4% i.e. railways spends INR 98.4 to earn INR 100 (2017-18).
- **Reserved passenger traffic** on Indian Railways grew at **less than 5%** between **2013 and 2018**, compared to a **13% growth in air traffic** during the same period.
- **Various committees like Bibek Debroy, Anil Kakodkar and Rakesh Mohan**
 - **Bibek Debroy Committee** in 2015 recommended that private entry into running both freight and passenger trains should be allowed to bring in competition with Indian railways via "liberalisation and not privatisation".
- **Dedicated Freight Corridor (DFC):** DFC can allow train speed to a maximum of 100 kmph from the current average speed of around 25 kmph.

13.4. Shipping

- **India is strategically located** on the world's shipping routes
 - **Coastline** of approximately 7,517 km
 - **Potentially navigable waterways:** 14,500 km
- **Trade:** ~ 95 percent of the country's trade by volume (70 percent in terms of value) is moved by sea.
- **Contribution and comparison:** ~ 95% of India's trade by volume and 68% in terms of value is transported by sea, but contributes **around 1% to the share of GDP**, as compared to 9% by the railways and 6 % by the road sector offering huge potential for growth.
- **Inland Water Transport (IWT)** carries less than 2% of India's organized freight traffic and negligible passenger traffic.
- IWT is widely regarded as the most **environmentally friendly and cost effective** mode of freight transport.
 - 1 litre of fuel moves 24 tonne - km on road, 95 tonne-km on rail and 215 tonne-km by IWT (RITES Report of 2014).



- **India imports** around 40 million tonnes of crude and 20 million tonnes of products every year, chiefly from the Gulf, Malaysia, and Nigeria via the Shipping route.
- **India has 204 ports**, out of which 12 are major ones and handle 55% of the cargo traffic.
- **Small Fleet Size:** The size of Indian Shipping Industry and its fleet is comparatively smaller to its counterparts (Ranked at 16 with 1.2% of world)
- **Low capacity:** Despite handling 90% of EXIM Cargo by volume and 70% by value, the traffic handled at ports is far less than capacity.
 - **Expected growth:** Port capacity is expected to grow at a CAGR of 5% to 6% by 2022.
- **FDI:** Despite 100% FDI and 10-year tax holiday to enterprises engaged in maintenance and operation of ports, a cumulative FDI of only US\$ 1.63 billion is received from April 2000 to March 2021.

14. Energy Sector

14.1. Power Generation

- **Country's total generation capacity** was ~388 GW.
- **Addition:** 20,000 MW capacity is added every year.
- **Thermal power** accounts for about 63% (with renewable energy- 23% and Hydro- 12.4%) of total installed capacity and roughly half of the generation capacity is in the private sector.
- **Ranking:** India is the **3rd largest energy consumer** in the world after USA and China.
- **India is at 106th position in terms of per capita consumption** in 2017, according to world energy statistics published by the IEA.
- **India's per capita power consumption** is 1181 kWh as against the world average of 3,260 kWh.
- **Growth:** Power generation recorded a compounded annual growth rate (CAGR) of 8.9%.
- **India has improved its ranking** to 76th position in the **Energy Transition Index** published by the **World Economic Forum (WEF)** suggesting paradigm shift in the sector.
- **India's average aggregate technical and commercial loss is at 21.4%**, leading to overdue bills.
- **Infrastructure:** In India, the installed capacity to produce electricity is not enough to support an annual economic growth of 7 to 8%.
- **Losses by Discoms:** According to the **Ministry of Power**, distribution companies in the country suffered losses worth Rs 27,000 crore in 2018-19.
- **The average tariff increase is 3% per annum** against the target of implementing regular tariff hikes of 5-6% per annum.
- **Transmission has taken rapid strides in India**, with a CAGR of 7.2% between fiscals 2012 and 2018, raising India's transmission line capacity to 3.9 lakh ckm (circuit kilometre).
- **Global energy demand declined** by 3.8% in the 1st quarter of **2020**. India's energy demand reduced by almost 30%.

14.2. Coal, Oil and Gas

- **India has set a policy target** of increasing the share of natural gas in India's energy basket from current 6.5% to **15% by 2030**.
- **Key Targets**
 - Increasing the Geologically explored area from 10% to 20%.
 - Increase the growth of the mining sector from 3% to 14% by 2023.
 - Reduce imports of oil and gas by 10 per cent by 2022-23.
 - Increase the job contribution (direct, associated and indirect) from the current 10 million to 15 million in 2022-23.
- **Current Situation**
 - 50% of India's overall energy mix comes from Coal.
 - Fossil fuels supply around three-quarters of India's primary energy demand and around 80% of it is imported and import dependency is going to increase significantly in the coming decades.
 - 70% of India's Energy needs come from West Asia.
 - 28% of India's overall energy mix comes from Oil.
 - **Overall production** of raw coal in India is growing at 8.1%.



- 729 million tonnes of coal is produced by India every year.
- **Petroleum and Natural Gas:** India is the 3rd largest energy consumer in the world after USA and China. (With a share of 5.8% of the world's primary energy consumption.)
- **India's oil production is one of the lowest** among the major economies of the world and has been declining over a period of time.
- **Domestic production** of natural gas has been increasing since 2017-18 and is estimated to be 31.8 billion cubic metres (BCM) in 2019-20.
- **Large Refining Capacity:** India with a refining capacity of 249.4 MMTPA is the fourth largest in the world after the United States, China and Russia.

15. Business and Innovation

15.1. Entrepreneurship

- India has the **3rd largest entrepreneurship ecosystem** in the world ahead of the countries such as Brazil and South Korea.
- **Impact on GDDP:** With a 10% increase in registration of new firms per district-year, Gross Domestic District Product (GDDP) increases by 1.8%.
- **Low entrepreneurial intensity** (number of new firms registered per year per 1000 workers) in formal economy, as compared to other developed economies as large number of India's enterprises operate in the informal economy.
- **Higher education levels** in a district enable the development of **better human capital** due to increased supply of ideas and the largest increases appear when literacy rises above 72%.

15.2. Start-ups

- **India is home to 38 unicorns** (start-ups with valuation greater than \$1 billion) with a combined valuation of ~ \$130 billion.
 - Between 2016 and August 2020, Startup India programme has recognised over 34,800 startups.
 - More than 8,000 startups have been registered on Government e-Marketplace (GeM portal), with whom government has done business worth 2300 crore.
- **Growth of the Start-up** has increased at an average rate 15% year on year. Also, this growth is not limited to one or two sectors but is spread across sectors.
 - Number of unicorns in India will increase by three times, to 95 in 2025 with a cumulative valuation of approximately \$390 billion.
 - Also, incubators and accelerators have grown by 11% reaching close to a number of 5,000.
- **Raising funds:** The entire start-up ecosystem raised \$50 billion funding between 2014 and 2019.
 - **85% of the new companies are underfunded** in the Indian startup parlance.
 - Primary reason for this can be cited as weak Venture Capitalist and Angel investor framework alongside low risk appetite of the Indian market.
- **Over \$1 Mn worth benefits** were given to 5,500 startups as part of over 150 startup innovation programmes and challenges organised by Startup India.
- **Employment:** The startup ecosystem, tangibly adds to job creation in the nation. On an average 12 jobs created per startup totaling up to more than 3.5 Lakh jobs.
- **Boom in Women Entrepreneurship:** More than 43% of the total start-ups in India have one or more women directors.
- **Regional balance:** 45% startups are in tier 2 and tier 3 cities, working as the brand ambassadors of the local products.

15.3. Innovation

- **Ranking:** Recently, India's rank improved in the **Global Innovation Index (GII)** by four places to 48th place in 2020 from 52nd position last year. 46th rank amongst 131 countries in Global Innovation Index (GII) 2021.
- India is underperforming in innovation with respect to the size of its GDP.

- **Growth status:** Even though India is within touching distance of breaking into the top-50 innovator countries in the world, it is still quite far from a China, which filed, for instance, 53,345 patent applications with the WIPO in 2018 versus India's 2,013.
- **Slower progress-** Even though India is within touching distance of breaking into the top-50 innovator countries in the world, it is still quite far from a China, which filed, for instance, 53,345 patent applications with the WIPO in 2018 versus India's 2,013.
- **Research and Innovation:** Only 0.69% of GDP is invested.
 - 2.8% in the United States of America, 4.3% in Israel and 4.2% in South Korea.
 - 95% of the entrepreneurial establishments in India are small enterprises.
- **The gross enrollment ratio** at the tertiary education level in India is a low 26% meaning, a vast reserve of potential research talent is lost.

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10 IN TOP 10 SELECTIONS IN CSE 2020



1
AIR

SHUBHAM KUMAR
GS FOUNDATION BATCH
CLASSROOM STUDENT



2
AIR

JAGRATI AWASTHI



3
AIR

ANKITA JAIN



4
AIR

YASH JALUKA



5
AIR

MAMTA YADAV



6
AIR

MEERA K



7
AIR

PRAVEEN KUMAR



8
AIR

JIVANI KARTIK NAGJIBHAI
GS FOUNDATION BATCH
CLASSROOM STUDENT



9
AIR

APALA MISHRA



10
AIR

SATYAM GANDHI



DELHI



JAIPUR



HYDERABAD



PUNE



AHMEDABAD



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CHANDIGARH



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