⇒ The advantage of buying Iphone, Oneplus, Nokia or AndroidOne series of phones is they provide (free) operating system updates/security patches for 2-3 years. I believe coaching industry too needs to adopt similar business practice.

⇒ So, this 'Win20CSP update patch/handout' is for my old batch students who had joined my economy classes anywhere between Jan-2019 to Jan 2020. It contains updates since the end of last year's UPSC Prelim-2019, including Full Budget 2019 (that came in July after election), (SkyBlue cover) Economic Survey 2018-19, (Purple cover) Economic Survey 2019-20, Budget-2020 and other Current Affairs Updates from newspapers

⇒ I've deliberately omitted ball by ball commentary surrounding GDP/inflation/unemployment data during Corona because Economic Survey 2021 will provide a very clear picture and analysis of it. And UPSC examiners are smart to avoid 'dynamically changing' information.

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50 PILLAR#5A: INFRASTRUCTURE

50.1 MINISTRIES AND DEPARTMENTS RELATED TO MINING, HEAVY INDUSTRIES

50.1.1 🕵️ 🏦 [Yearbook] Ministry of Heavy Industries & Public Enterprises

भारी उद्योग एवं सार्वजनिक-क्षेत्र के उपक्रमो का मंत्रालय

Dept	⇒ Department of Heavy Industry
	⇒ Department of Public Enterprises: is responsible for i) Allotting Ratna Status (Ref: Pillar2) and ii) conduct Public Enterprises Survey

Attached, Subordinate, Statutory	⇒ N/A or not MCQ worthy
Autonomous	⇒ National Automotive Testing and Research and Development Infrastructure Project (NATRiP) → implements FAME-India project for faster adoption of electric vehicles.
PSU	⇒ List not exhaustive: ⇒ Bharat Heavy Electricals Ltd. (BHEL) etc. ⇒ (*) Cement Corporation of India Ltd. ⇒ (*) Hindustan Newsprint Ltd ⇒ (*) Scooters India Ltd. ⇒ (*) Bridge & Roof Co, Engineering Projects (India), Bharat Pumps and Compressors Ltd.

(*) means approved for strategic disinvestment (=privatization) in 2019

50.1.2 🕵️ 🏢 [Yearbook] Ministry of Steel (इस्पात मंत्रालय)

Dept	N/A
Attached, Subordinate, Statutory	N/A or not MCQ worthy
PSU	List not exhaustive but notable are: ⇒ Steel Authority of India Ltd (SAIL) ⇒ Rashtriya Ispat Nigam Ltd (RINL) ⇒ National Mineral Development Corporation (NMDC) iron ore. ⇒ (*) Salem Steel Plant (Tamilnadu), Bhadrwati Steel Plant (Karnataka), Ferro Scrap Nigam Ltd, & a few misc.

(*) means approved for strategic disinvestment (=privatization) in 2019

Largest Steel	1	2	3
Producer	China (54%)	India (6%)	Japan
Consumer	China (49%)	USA	India (6%)

50.1.3 🏢 Steel → Purvodaya Initiative (2020)

⇒ The eastern states of India (Odisha, Jharkhand, West Bengal, Chhattisgarh, and Northern Andhra Pradesh) are home to 80% of Indian iron reserves.

⇒ Purvodaya Initiative: Setup new steel plants, transport infrastructure → to create an integrated steel hub in the Eastern India.

⇒ **Boss? Steel Ministry** will coordinate with other Central Ministries, State Governments and Private Players.

50.1.4 🕵️ 🧪 [Yearbook] Ministry of Chemicals & Fertilizers

Dept	⇒ Department of Chemicals and Petrochemicals ⇒ Department of Fertilizers ⇒ Department of Pharmaceuticals

Attached,	⇒ Fertilizers Industry Coordination Committee (FICC).
	⇒ National Pharmaceutical Pricing Authority (NPPA) More in Pillar#6: Healthcare
Subordinate, Statutory	⇒ Either non-existent or not MCQ worthy
Autonomous	These bodies are set up under either Societies Registration Act or Multistate Cooperative Societies Act= Different?NOTIMP.
	⇒ Multi State Cooperative Societies: IFFCO, KRIBHCO
	⇒ Bureau of Pharma PSUs of India(BPPI) for supplying medicines to PM Jan Aushadhi Kendras (More in Pillar6)
	⇒ National Institute of Pharmaceutical Education Research (NIPER)
	⇒ Central Institute of Plastics Engineering & Technology (CIPET), Ranchi
PSU	*List not exhaustive but notable are:*
	⇒ Hindustan Insecticide Limited (HIL) → responsible for mfg of Di-chloro-di-phenyl-tri-chloro-ethane (DDT) for mosquito control in Nation vector borne disease control program
	⇒ (*) Hindustan Antibiotics
	⇒ (*) Karnataka Antibiotics & Pharmaceuticals Limited (KAPL)
	⇒ (*) Bengal Chemicals and Pharmaceuticals Ltd. (BCPL)
	⇒ (*) Hindustan Fluorocarbon Ltd

(*) means approved for strategic disinvestment (=privatization) in 2019

50.1.5 🕵 [Yearbook] Yearbook: Ministry of Petroleum & Natural Gas
पेट्रोलियम एवं प्राकृतिक गैस मंत्रालय

Dept	⇒ N/A
Attached / Subordinate offices:	⇒ Directorate General of Hydrocarbons: regulator for the upstream activities i.e. oil and gas exploration and production activities. 2018: proposal to give it statutory status was REJECTED.
Statutory	⇒ 2006's Act: Petroleum and Natural Gas Regulatory Board: regulator for the downstream activities i.e. laying of pipelines and fuel marketing
PSU	⇒ (*) Bharat Petroleum Corporation Limited
	⇒ (*) Hindustan Petroleum Corporation Limited
	⇒ Engineers India Limited → consultancy services for petroleum refineries and other industrial projects
	⇒ Gas Authority of India, Indian Oil Corporation, Oil India,
	⇒ Oil & Natural Gas Corporation (ONGC),
	⇒ ONGC-Videsh Ltd (OVL)- associated with foreign exploration projects like Sakhalin (Russia), Al-Furat (Syria), Greater Nile (Sudan), San Cristobal (Venezuela).

(*) means approved for strategic disinvestment (=privatization) in 2019

50.1.6 🕵️ [Yearbook] Ministry of Mines (खान मंत्रालय) <list not exhaustive>

Dept / Statutory	N/A
Attached / Subordinate offices	- National Mineral Exploration Trust राष्ट्रीय खनिज अन्वेषण न्यास - Geological Survey of India भारतीय भूवैज्ञानिक सर्वेक्षण - Indian Bureau of Mines भारतीय खान ब्यूरो
PSU	- National Aluminum Company Limited (NALCO), Bhubaneswar; - Hindustan Copper Limited (HCL), Kolkata; - Mineral Exploration Corporation Limited (MECL), Nagpur.
Autonomous bodies / Trusts	- National Institute of Rock Mechanics - Kolar Gold Fields (**KGF**, Karnataka), - Districts Mineral Foundations (DMF) in mining districts. - National Institute of Miners' Health (NIMH in Karnataka). Although in 2020, Government announced to merge it with Health Ministry's ICMR-National Institute of Occupational Health (NIOH, Ahmedabad, Guj)

50.1.7 💧⚖️ Mineral Laws (Amendment) Ordinance 2020

खनिज कानून (संशोधन) अध्यादेश amends the

⟹ Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act) AND

⟹ Coal Mines (Special Provisions) Act, 2015 (CMSP Act).

	Before ordinance	**After**
Who can do bidding in the coal mining auction?	Only companies related to iron and steel, power and coal sectors.	Any India-registered company. So it'll also encourage competition and attract FDI in such Indian companies
Prior experience required before bidding	Yes	Nope.
What type of license is /are given?	Separate licenses for i. prospecting (survey) ii. actual mining	Single/Composite license called 'prospecting license-cum-mining lease' (पूर्वेक्षण-सह-खनन का अधिकारपत्र')

50.1.8 🏭🍥💠 Mining → Atma-Nirbhar (खनन)

⟹ 🏭ATMANI→ PM GaribKalyan → 🏛️ District Mineral Foundation Fund (DMF) ₹₹ → can be used for COVID-19 testing & related infra (जिला खनिज प्रतिष्ठान निधि)

⟹ Mineral Index (खनन सूचकांक) for different minerals will be prepared. But, details yet to be worked out.

⟹ **Satyabhama Portal** was launched. Boss? Mining Ministry's portal for mining related research, science & technology. Satyabhama = wife of Lord Krishna.

⟹ **Joint Auction of Bauxite and Coal** mineral blocks so that: Coal → electricity → use it for smelting Bauxite into Aluminium = ⬇️ electricity costs for mining company. (साझा नीलामी ताकि बोक्साइट पिघलाने के लिए बिजली लागत/खर्च कम हो)

⟹ We'll encourage Coal Gasification / Coal Liquefaction, coal bed methane extraction → creation of a gas based Indian economy.

⇒ **Commercial Mining** allowed in the Coal Sector, through revenue sharing model. (वाणिज्यिक खनन: आय में से हिस्सेदारी का मोडेल).

  o Although, this reform was being done via Mineral Laws (Amendment) Ordinance 2020 before Atmani.

  o But in Atmani-tamasha, even previous reforms are counted.

51 ✏️ INFRA → ENERGY → ELECTRICITY (ऊर्जा → विद्युत)

(DATA as of 2020-Aug) In India's present electricity mix consists of:

Thermal Electricity (ऊष्मीय विद्युत: Coal > Gas > Diesel Oil)	~62%
Renewable: Hydroelectricity (जल-विद्युत)	~12%
Renewable Energy (नवीकरणीय ऊर्जा) (Solar, Wind, Biomass etc. except hydro)	~24%
Nuclear (नाभिकीय / परमाणुवीय)	~2%
Total	100%

Source: https://powermin.nic.in/en/content/power-sector-glance-all-india

51.1.1 ✏️ IEX = Current-PDF-walla gone crazier than usual

~~A company: Indian Energy Exchange Limited (IEX)~~ →

⇒ IEX launched a green term-ahead market (G-TAM). basically future/forward contracts for renewable energy. (Ref 1C)

⇒ IEX's subsidiary company → Indian Gas Exchange (IGX) → online trading of natural gas.

⇒ IEX + Power Exchange India Limited (PXIL) → It allows players (thermal powerplants, DISCOMS etc) to buy/sell electricity from anywhere across the country with just one hour's prior notice. = "REAL TIME MARKET" (RTM)

✋Even this much GK not very imp for scope of exam, although current-affairs-PDF walla gone crazy about it.

51.1.2 🤚⚡Energy → DISCOMs Liquidity injection (पैसा की तरलता देके जान फूंकना)

⇒ Corona lockdown → Industry and railways shutdown → ⬇️ demand for electricity → losses for Electricity/Power Distribution Company (DISCOM).

⇒ **Atma-Nirbhar:** Government will give ₹₹ to (i) Power Finance Corporation (ii) Rural Electrification Corporation (PFC-REC) → they'll invest ₹₹ in DISCOMS.

51.1.3 🤚⚡Energy infra→ Electricity reforms (बिजली क्षेत्र में सुधार)

⇒ **Atma-Nirbhar:** We'll reform the electricity tariff policy (शुल्क नीति),

⇒ encourage DBT for electricity subsidy to farmers (सबसिडी का प्रत्यक्ष हस्तांतरण);

⇒ install smart prepaid meters

⇒ Will privatise the Union Territories' DISCOM/Power departments → More efficient operations in UT (केंद्र शासित प्रदेशों में बिजली की सरकारी कंपनियों का निजीकरण करेंगे)

51.1.4 ✏️DRAFT Electricity Bill 2020 (बिजली कानून में सुधार विधेयक का प्रारूप/मसौदा)

BEFORE	AFTER (बिजली सब्सिडी का प्रत्यक्ष लाभ हस्तांतरण)

✓ Farmer / poor people paid bills at low/subsidized rates to DISCOM. ✓ State govt will pay subsidy to DISCOM	All consumers may have to pay the regular / normal / market-based electricity rates to DISCOM State Government will pay a subsidy to FARMER as "Direct benefit transfer (DBT)" to his bank account. <u>Controversy?</u> 100% financial inclusion yet to be achieved in reality. So farmer may not get the subsidy on time. State governments financial health/ tax collection ⬇ so, They may not release the subsidy on time.

++ many other issues but It is still in the draft stage, NOT even tabled in the parliament. Many state governments are opposed to it. So we need not spend too much energy on it.

51.2 ✎ 💡 ⬂ 📊 ELECTRICITY → INDICES

51.2.1 ✎ 💡 ⬂ 📊 Electricity → Index → Energy Transition Index
- World Economic Forum's index to measure countries on how much CO_2 / pollution is generated while producing energy, And whether the country is serious abt reducing it.
- **Ranking 2020-May:** Top3- Sweden, Switzerland, Finland. Then India: 74 (previous years 76 so improved.) Haiti #115 (bottomest).

51.2.2 ✎ 💡 ⬂ 📊 Electricity → Index → State Energy Efficiency Index 2019
Developed by Power Ministry's Bureau of Energy Efficiency (BEE) in association with a non-profit body called Alliance for an Energy Efficient Economy (AEEE).

Category	2019's ranking? (Announced in 2020-Jan)
Achiever	Nobody yet
Front Runner	Haryana, Kerala and Karnataka
Contender	Long list
Aspirant (=Most Pathetic)	Manipur, Jammu & Kashmir, Jharkhand and Rajasthan

51.2.3 ✎ ⚙ 😀 🏭 Renewable → Ranking → SARAL INDEX for Solar rooftop
Jointly developed by Ministry of New and Renewable Energy (MNRE), Shakti Sustainable Energy Foundation (SSEF), Associated Chambers of Commerce and Industry of India (ASSOCHAM) and Ernst & Young (EY).
- ⟹ State Rooftop Solar Attractiveness Index (SARAL) ranks the States for their attractiveness for rooftop development.
- ⟹ **2019 Ranking?** Karnataka > Telangana > Gujarat > Andhra Pradesh

51.3 😀 🏭 🏢 🍳 COOKING → PRADHAN MANTRI UJJWALA YOJANA (PMUY)
Ordinarily, a customer has to pay ~₹ 1000+ as refundable security deposit to get the LPG connection from Oil Marketing Company (OMC: Bharat Gas HP Gas etc.).
- ✓ Scheme gives Deposit-free LPG connections + rubber tube + pressure regulator to the women of Below Poverty Line (BPL: गरीबी रेखा के नीचे) families. (Although they have to pay money for the stove and cylinders to actually start cooking.)

- ✓ The BPL families are identified using SECC-2011 data. Later, the beneficiary list was expanded to cover the forest dwellers, people residing in Islands etc. whose name may not be in SECC-2011 data.
- ✓ **Boss? Petroleum** Ministry pays ₹ ₹ OMC. Central Sector scheme = 100% funded by Union.
- ✓ **Benefit?** firewood/kerosene consumption ↓= indoor pollution ↓= health + environment :-)
- ✓ **2019: Himachal Pradesh** had become the first state in the country to have "100% LPG gas coverage".
- ✓ **2020: Corona Lockdown** = poor families' income ⬇, so can't afford to pay for cylinders so, PMUY beneficiaries eligible for 3 FREE LPG cylinders upto 30/June/2020.

51.4 ⚛ ⚡☢ENERGY INFRA→ ATOMIC ENERGY → ATMA-NIRBHAR (परमाणु ऊर्जा)

⇒ 🩺 PPP mode: **Research** reactor → produces **medical isotopes** → use in **cancer** treatment. (अनुसंधान रिएक्टर से केन्सर चिकित्सा के लिए समस्थानिक तत्व/आइसोटोप का निर्माण)

⇒ 🧅 PPP mode: **Irradiation** facilities for **Food preservation**. (खाद्य संरक्षण के लिए विकिरण)

52 ☁ INFRA → WATER & SANITATION (जल व् स्वच्छता)

Ref: pillar4A: Agri for irrigation and drinking water related ministries and schemes

52.1 🚽 SWACHH BHARAT MISSION (GRAMIN) PHASE 2

⇒ It'll be implemented from 2020-2021 to 2024-2025

⇒ To ensure villagers continue to use toilets

⇒ + focus on plastic waste management, Animal waste and other bio-degradable solid waste management (जैव अपघटित ठोस अपशिष्ट प्रबंधन,)

⇒ Greywater management (It is the used water from domestic sources excluding toilet wastewater) Fecal-sludge management (मल-कीच प्रबंधन।)

52.1.1 🚽SBM Protocols (कार्यपद्धति)

ODF+ protocol	⇒ Open Defection Free status (+) [खुले में शौच मुक्त स्थिति **तथा**]
	⇒ Operations and maintenance of community toilets and public toilets। (सार्वजनिक शौचालयों का योग्य तरीके से संचालन और रखरखाव)
ODF++ protocol	⇒ Above things from ODF+ and additionally, focuses on safe management of faecal sludge from toilets
	⇒ Untreated sludge should NOT be discharged into water bodies etc (अनुपचारित कुडा-कीचड़ को पानी मे नही छोड़ना)
Water + protocol	untreated wastewater should NOT be discharged in water bodies etc.

52.1.2 📖📖 Swatchh Bharat: What more can we do?

In ES19, CEA Subramanian K. suggested that:

1) Goa, Odisha, Telangana, Bihar, W.Bengal, Sikkim have not yet achieved 100% Open Defection Free (खुले में शौच से मुक्त) status as of 2019-June.

2) Some rural males still don't use toilets. Even in urban areas, people keep their homes clean but litter in public places. So, we have to inculcate a **behavioral change** for maintaining cleanliness at public places as well.

3) water crisis so we've to adopt eco-friendly water conservation in toilets. e.g. **Bio toilets, dual flush toilets**. जैव शौचालय, दोहरी फ्लश शौचालय

4) Clean India should also be **pollution free India**, so we should focus

   a. industrial effluent, plastic menace, controlling air pollution etc. (औद्योगिक अपशिष्ट, प्लास्टिक की चुनौती, वायु प्रदूषण)

   b. bioremediation, river surface cleaning, river front development. (जैव-उपचार, नदियों के तल की सफाई, रिवर फ्रंट का विकास)

   c. afforestation and biodiversity conservation. (वृक्षारोपण तथा जैव विविधता का संरक्षण)

5) To do the above things, we have to mobilise **more funds** through: Micro-financing (सूक्ष्म वित्तपोषण), Concessional Loans (रियायती दरों पर लोन/ ऋण), Corporate Social Responsibility (कॉर्पोरेट का सामाजिक उत्तरदायित्व), Crowdfunding (जनसमूह के द्वारा वित्तपोषण), Public Private Partnership (सार्वजनिक-निजी भागीदारी)

52.1.3 SBM: Budget observations / announcements

⇒ 💼 (Full) Budget-2019:

   o We'll open Rashtriya Swachhta Kendra at Gandhi Darshan, Rajghat (New Delhi) on 2nd October, 2019.

   o Culture Ministry's autonomous body 'National Council for Science Museums' is preparing a **Gandhipedia** to sensitize people about Gandhian values.

   o 150th birth anniversary of Mahatma Gandhi is being celebrated for a period of 2 years from 02.10.2018 to 02.10.2020. National Committee (NC) under the Chairmanship of **President** of India and Executive Committee (EC) under the Chairmanship of the **Prime Minister** have been constituted.

⇒ 💼 Budget-2020: All 5.99 lakh villages, 699 districts and 36 States/UTs have declared themselves Open Defecation Free (ODF). Further, ₹12000 Cr allotted.

53 🪓 INFRA → TRANSPORT → H₂0 → SHIPPING

53.1.1 ⚓🚚🛳️📱📱ES20 Vol1ch6: logistics Challenge in India (मालसामान परिवहन)

CEA Subramanian K. provided a case study:

If an apparel factory in Delhi has to export clothes to USA through India's largest port @Maharashtra i.e. Jawaharlal Nehru Port Trust (JNPT) also known as 'Nhava Sheva Port'

Days taken for cargo to reach Delhi to Maharashtra	5 days
Customs clearance and loading cargo in the ship	14 days, because port infrastructure is poor. narrow roads, very little use of automatic cranes etc.
Shipping from Mumbai to USA	19 days
Unloading cargo in USA dock including customs clearance	1 day
Transporting to customer	2 days
Total	41 days

Similarly, 📖📖ES20vol1ch6 gave case studies of Electronics export, carpet import etc. and found

⇒ Loading/unloading/customs inspection processes at Indian airports is vastly superior to its seaports.

⇒ Ironically, customs clearance processes for imports are better/faster than those for exports. (whereas the Government should focus on making it 'easier' to export for improving our CAD & BoP!)

53.1.2 ⚓🚚🚢 Logistics Ranking

LPI Index	⇒ World Bank's Logistics Performance Index, released **every 2Years**
	⇒ **2018's Ranking:** #1: Germany > Sweden > Belgium > Austria > #5: Japan >......>#44: India
LEADS Index	⇒ Commerce Ministry's Logistics Ease Across Different States (LEADS) index
	⇒ 2019 Ranking: Gujarat> Punjab > Andhra > ….. > Bottom=Himachal

54 🚗 INFRA → TRANSPORT → ROAD (सड़क)

54.1 🚗🛰 TRANSPORT→ NOUSE FOSSIL FUEL → ELECTRIC VEHICLE

Figure 1: Elon Musk is renowned for his Tesla brand of Electric cars

- **(Definition)** Electric vehicle (इलेक्ट्रिक वाहन) is an automobile that is propelled by the energy stored in rechargeable batteries. Such vehicles are further classified into
    ○ 1) Battery Electric Vehicles (BEVs) and

- ○ 2) Hybrid Electric Vehicles (HEVs) which can run on both battery (using electric motor) and petrol/diesel (using internal combustion engine).
- **(Origin of the problem)** In India, transport sector is the second largest contributor to CO_2 emissions after the industrial sector. Electric vehicle can help reducing it.
- **(Data)** Currently, the market share of electric cars is less than 1% in India, compared to compared to 2% in China and nearly 40% in Norway.
- **Why encourage?** 1) less import of crude oil import = less CAD 2) India can emerge as a hub for manufacturing for EVs. This can provide employment opportunities and earning of foreign exchange through exports. रोजगार व विदेशी मुद्रा कमाने का साधन बन सकता है

54.1.1 🚗 🏷️ 😶 🎰 EVs in India: steps taken to promote them

- 100 % FDI through automatic route is permitted in the automobile sector.
- 2013: **National Electric Mobility Mission Plan 2020** (NEMMP) for promoting electric and hybrid vehicles.
- 2015: Ministry of Heavy Industries & Public Enterprises launched **Faster Adoption and Manufacturing of Electric vehicles** (FAME) scheme to fast-track the goals of NEMMP.
- 2019: **FAME India Phase II** has been launched from 1/4/2019 for a period of three years with funding of ₹ 10,000 crores.
  - ○ It'll setup 2700 charging stations in major cities in such manner that
    - ▪ at least one **charging station** is available in a grid of 3 km x 3 km in cities,
    - ▪ At least one charging station is available every **25km on highways**.
  - ○ It'll also focus on electrification of public transportation. (सार्वजनिक परिवहन का विद्युतीकरण)
- GST on EVs is reduced to 5% from the current rate of 12%.
- Budget-2019: Additional income tax deduction on loans taken to buy EV.
- Ministry of Road Transport Highways (MoRTH) notified Green Number plate for the use of Electric Vehicles.

54.1.2 🚗 🏷️ 💯 100% EV Adoption? NITI vs Highway Ministry differ
- 2017: NITI proposes at least 40% private transportation should be electric by 2030.
- 2019-Jun: NITI proposed only electric vehicles should be sold after 2030. However, automobile makers have heavily criticized this move. So, ultimately
- 2019-Aug: Union Minister of Road Transport and Highway, Nitin Gadkari cleared the air that 1) There will be no ban on petrol and diesel vehicles in the country. 2) Government has not set any deadline for automakers to switch to electric vehicles. 3) I am the minister, NITI Aayog does not have the authority to set Electric Vehicle deadline.

54.1.3 🚗 🏷️ 🔋 🔋 ES19: EVs in India: Charging is the biggest challenge
Norway has the highest share of electric cars in its private transport. Because they provide tax incentives to EV buyers, waiver of toll fees, free parking, etc. However, the Latest Economic Survey observed that more than such tax incentives, need of the hour is to develop charging station infrastructure in India because:

- ✓ EV batteries' primary components is **Lithium**. China has secured a supply of this metals from Congo, Bolivia, Chile and Australia. China controls half the cobalt mines in Congo. India also has to expand to such upstream areas to secure Lithium supply.
- ✓ EV batteries have limited driving range. So, **charging stations** must be available throughout the road networks. Else, people will prefer Internal Combustion Engines (ICE) vehicles like petrol-diesel cars.
- ✓ Depending on the technology of charging stations, it can take from 30 minutes to 8 hours to recharge the battery. Therefore, universal charging standards (सार्वत्रिक चार्जिंग मानक) are required in India.
- ✓ Government should also inform users about the availability of charging stations in their vicinity with the help of physical science, GPS maps / Apps.
- ✓ India's climate is much hotter than Norway. High temperature degrades battery life cycle. We've to encourage R&D accordingly. Otherwise, frequent battery replacement costs will discourage potential buyers. बार-बार बैटरी बदलवाने का खर्चा ग्राहक को हतोत्साहित कर सकता है.

🚗 ✎ ✍ **EV-Conclusion:** Electric vehicles represent the next generation in sustainable mobility. India must emphasize on them to reduce its GHG emissions, and to provide new avenues for employment and export earnings. Aforementioned initiatives / reforms are important in this regard/need to be addressed on priority basis.

54.1.4 🚗🚈 TRANSPORT→ 🚗💨 ⬇ Fossil Fuel Emission → Bharat Stage Norms

⇒ Environment Ministry → Statutory Body: Central Pollution Control Board (CPCB) has instituted Bharat Stage emission norms (BS) norms . जीवाश्म ईंधन उत्सर्जन मानक

⇒ Higher the standard number = stricter the norms = more expensive for automakers to design such types of engines.

BS-IV(4)	- **1/4/2017:** BS-IV compliant vehicles made compulsory. - **1/4/2020:** SC banned their sale from this date
BS-V(5)	Modi decided we'll directly jump to Stage 6.
BS-VI(6)	Only this type of vehicles can be sold from 1/4/2020 onwards Stage-VI vehicles will emit less Sulphur and Nitrogen Oxides than their predecessors.

⇒ 1) Many buyers awaiting new BS6 cars' prices to fall instead of buying BS4 models.

⇒ 2) Even though the BS4 car may be cheaper, it'll not have good re-sale value in the 2nd-hand used market after 5-6 years. So buyers are hesitant.

⇒ 1+2 = among reasons for ⬇ in automobile sales in 2019

⇒ Separately, Department of Heavy Industry **notified Corporate Average Fuel Efficiency (CAFE)** norms for passenger cars, requiring them to cut down CO2 emission from 2017 onwards.

54.1.5 🚗💨 ⬇ Decarbonizing Transport in India (2020-June)

⇒ 5 year Project by NITI + OECD's International Transport Forum (ITF)

⇒ 13% of India's Co2 emissions come from the transport sector. This project aims to reduce it. परिवहन में कार्बन की उत्सर्जन को कम करना

⇒ More details prepare from Environment lecture/Current PDFs.

54.2 🛻🏍️🚗⚖️ MOTOR VEHICLE AMENDMENT ACT 2019

- Road accidents claim ~1.5 lakh lives every year. So, Union's Motor Vehicles Act, 1988 was amended in 2019 with steep penalties (बड़ा जुर्माना)- such as Drunk-driving fine increased from ₹ 2,000 to ₹ 10,000 etc. Even road contractors and officials can be punished with fine if faulty infrastructure results in accidents.
- **Concurrent List Entry 35:** Mechanically propelled vehicles. So, both union and states can enact laws but Union's law will prevail.
- But, some State Governments have notified reduced penalties. Union Highway Minister said, "*States can revise fines if they want. However, peoples' lives should be saved.*"

Further, this Motor Vehicle (Amendment) Act 2019 mandates:

1. **Aadhar card compulsory** for getting a driving licence and vehicle registration.
2. **Good Samaritan** (नेक आदमी: who helps the injured victim in good faith) will not be harassed in civil /criminal cases. It'll not be mandatory for them to disclose identity to police / doctors.
3. Road builder can be penalized if poor quality of road leads to accident.
4. Vehicle company can be penalized for **sub-standard components.** Government can order recall of such faulty vehicles.
5. Easier registration process of vehicles modified for Divyang(**PH**)
6. **A Motor Vehicle Accident Fund (मोटर वाहन दुर्घटना निधि)** will provide compulsory insurance cover to all road users in India for certain types of accidents.
7. Technical reforms in third party motor-vehicle insurance & claims.

54.3 🚗🌐 TRANSPORT → TRANSBORDER CONNECTIVITY (सीमापार सम्बद्धन)

Kartarpur Sahib Corridor (2019)	- Kartarpur Sahib is located on the Ravi river bank, Pakistan, about 4.5 km from the international border. - Here Guru Nanak Sahib spent his 18 years until his death in 1539. - 2019: 550th birth anniversary of Guru Nanak Sahib. - Govt launched Visa-free corridor - Indian citizens and OCI (Overseas Citizens of India) can travel from India to Pak.
Sonamura-Daudkandi (2020-Sept)	- Sonamura (Tripura) to Daudkandi (Bangladesh) - This is a riverine route connecting Tripura's Gomati river with India's national waterways through Bangladesh's Meghna river.
Blue Dot Network (2019)	⇒ Proposed by the USA, Japan and Australia. India is yet to join. ⇒ If an infrastructure project gets 'Blue Dot' Certification = Project has high standards of quality, transparency, sustainability, and developmental impact. ⇒ This will encourage private investors from 1st world nations to invest in such projects.
Gwadar	- Gwadar Port@Pakistan. So obviously China helped building it.

Chabahar &	- Chabahar Port@Iran. India helped building it.
	- 2016: PM Modi signed agreement with Iran to construct a railway line from Chabahar port to Zahedan (a region bordering Afghanistan)
	- 2020-Jul: Iran dropped India from project citing India's funding delays. Separately, Iran is also seeking a 25 years economic and security partnership pact with China to get billions of funding. So, critics term it as failure of Indian diplomacy.

55 🚆 Transport → Railway

55.1 🚆👮 Railways → Modernization → Personnel & Organizational Reforms (कार्मिक और संगठनात्मक सुधार)

⇒ Earlier, Sam Pitroda Committee (2012) and Bibek Debroy Committee (2015) and many others had suggested various organizational reforms for the Railways.

⇒ Modi Cabinet had constituted Alternate Mechanism (AM / वैकल्पिक क्रियाविधि: a group of cabinet ministers to decide on a particular subject).

⇒ 2019-Dec: following was approved (1) Unification of Services (2) Restructuring of Railway Board

55.1.1 🚆👮 Railways Personnel Reforms → Unification of Services (सेवाओं का एकीकरण)

BEFORE	AFTER
Technical services recruited through Indian Engineering Service (IES) exam of UPSC viz. ⇒ 1) Indian Railway Service of Engineers 2) Signal Engineers 3) Mechanical Engineers 4) Electrical Engineers 5) Stores Services **Non-Technical services** recruited through Civil Services Exam (CSE) of UPSC viz. 6. Indian Railway Traffic Service (IRTS) 7. Indian Railway Accounts Service (IRAS) 8. Indian Railway Personnel Service (IRPS) This resulted in fragmented manpower planning, lack of coordination with each other, departmental rivalries	⇒ These eight services will be merged into Indian Railways Management Service (IRMS): भारतीय रेलवे प्रबंधन सेवा). ⇒ **Benefit?** Improved coordination and efficiency. (बेहतर समन्वय और दक्षता)
Indian Railway Medical Service (IRMS), recruited through Combined Medical Services Examination of UPSC	It'll be renamed as Indian **Railway Health Service** (IRHS: भारतीय रेलवे स्वास्थ्य सेवा).

😿🤚 Unification of Services → Controversy?

⇒ Officers fear their seniority / promotion may be affected with merger.

⇒ Electrical / mechanical engineering works can't be manned by non-Engineers because they don't have subject knowledge.

⇒ Therefore merger into a single service is irrational (तर्कहीन).

⇒ Bibek Debroy Committee (2015) suggested merger of these services into two services 1) technical and 2) non-technical. That'd have been more rational decision.

55.1.2 🚆👮 **Railways Organizational Reforms → Restructuring of Railway Board**

BEFORE	AFTER (रेलवे बोर्ड का पुनर्गठन)
Railway Board, the apex decision making body of Railways had ⇒ One Chairman ⇒ Members selected from various Railway departments.	Similar to a Company board. ⇒ Chairman of the Railway board will be the Chief Executive Officer (CEO: मुख्य कार्यकारी अधिकारी) ⇒ 4 functional Members (कार्यपरक सदस्य) i.e. officers from Railways selected on merit cum seniority basis. ⇒ Some independent members with knowledge & experience in industry, finance, economics and management fields

Railway board members were allocated subjects on **departmental lines** such as
   1. Traffic
   2. Rolling Stock
   3. Traction
   4. Engineering
	Railway board members were allocated subjects on **functional lines**, similar to a company board
	   1. Operation (ऑपरेशन)
	   2. Business Development (व्यापार विकास)
	   3. Human Resources (मानव संसाधन)
	   4. Infrastructure (बुनियादी अवसंरचना)
	   5. Finance (वित्त)

55.2 🚆👮:🌐 RAILWAYS MODERNIZATION → PRIVATE TRAIN OPERATORS

Table 1: benefits of allowing private trains in India?

🚆👮 BEFORE	🌐 AFTER: allowing private train operators
⇒ Indian Railways itself responsible for running the trains, collecting ticket-fees, delivering passengers and goods. ⇒ Affluent passengers (धनी / पैसो से संपन्न यात्री) prefer Airlines over Railways because they're faster, cleaner & safer.	On selected routes (NOT all routes): ⇒ Private train operators (निजी ट्रेन संचालक) will buy their design/buy their own private trains from anywhere in the world. They'll run it on Indian tracks with their own driver, staff, & charge market-linked fares. (बाजार आधारित किराए.) ⇒ Government (Indian Railways) provide timetable, track and signaling infrastructure to them. ⇒ Private train operator will share % of its revenue with Government.
⇒ Lately, Government itself started 'premium trains' such as Duronto, Tejas, Vande Bharat, Uday, Hum-Safar etc.	⇒ Passengers will benefit from world-class train services e.g.

🚃😔 BEFORE	😊 AFTER: allowing private train operators
⇒ But there is a long waitlist for tickets. Which proves people are willing to pay for good service, but Govt alone doesn't have enough funds to launch many such 'premium trains'.	⇒ No nuisance of hawkers, beggars, unhygienic toilets. ⇒ Lady train hostesses to deliver food & amenities. ⇒ Such trains will stop at very few stations, will have minimum 160 kmph speed → faster and more pleasant journey. (तेज व् सुखद यात्रा का अनुभव)

⇒ 2006: Ministry of Railways allowed private operators to run container trains on the Indian Railways (IR) network.

⇒ Railways constituted **Amitabh Kant Panel** for entry of private operators in passenger trains.

⇒ 2019-Oct: FIRST 'Private' train: Lucknow-Delhi Tejas Express launched. It's operated by IRCTC. Although, IRCTC is a subsidiary company of the Ministry of Railways. So, technically, it's not 'fully private train' but if this experiment is successful, then actual private operators may be allowed.

⇒ 2020-Jan: Indian Railways has invited private companies to apply for running 150 passenger trains on 100 routes. Draft proposal is as following:

Table 2: Draft Public Private Partnership (PPP) model for private railways

Model	Private player will Design, Build, Finance and Operate (DBFO: डिजाइन, निर्माण, वित्त और संचालन) his private trains on the routes given to him. Train must have minimum 16 coaches.
Concession Period (रियायत की अवधि):	35 Years. After that, the government may renew/ Government itself may start operating it / select another party...depending on the mutually agreed conditions in the contract.
Fees	private train operator will share a % of his revenue with the Government. (निजी संचालक ने अपनी आमद में से कुछ प्रतिशत सरकार को देना होगा)

55.2.1 (🚃😔:😊) 😿🖐 Challenges in allowing private trains (चुनौतियां)

1. Apprehension among railway employees about **job-loss,** if Government reduces number of Government trains.

2. **Coordination / ego-tussle (समन्वय / अहं-तुष्टि)** between private crew running the train and railways Government officials operating the track & signal system.

3. Fixing responsibility / insurance claims during **train accidents.**

4. To keep their operational costs low, Private airlines not doing regular service-maintenance of aircrafts-which endangers **passenger security** (यात्री सुरक्षा). Similar danger in private railways.

5. In the aviation sector, Jet Airways et al engaged in **Predatory Pricing** (= selling tickets at deep discount) to kill rival companies. Eventually **all suffering from losses.** Similar crisis in mobile service providers **(Jio vs others).** So, fair competition & price regulatory mechanism required. (सरकार ने स्वच्छ प्रतियोगिता एवं कीमत नियंत्रण सुनिश्चित करना होगा)

6. If private player imports railway from foreign country, its repair parts / mechanic may not be easily available in India…. <We can find 500 such faults but UPSC doesn't conduct recruitment of theHindu columnists.>

55.2.2 (🚃 ⊙:⊙) ✍ Private Trains → Conclusion- welcome this reform

⇒ Entry of private train operators will bring greater investment, innovation, employment and pleasant travelling experience for the passengers.

So, the Government has taken an appreciative step, provided the aforementioned challenges are kept in check (ये एक सराहनीय कदम है यदि, उपरोक्त चुनौतियों को काबू/नियंत्रण में रखा जाए).

55.2.3 🚈 Transport → Hyperloop

⇒ Space-X & Tesla founder Elon Musk proposed this fifth mode of transport after boat, rail, plane and automobile.

⇒ Basically a vacuum / pneumatic tube system to transport passengers using aluminium pod cars.

⇒ Maharashtra Govt was talking with international developers to build a Hyperloop between Mumbai and Pune to cover 150 kms in 25 minutes.

⇒ Avishkar Hyperloop = IIT-Madras research team on Hyperloop

55.3 🛫 TRANSPORT → AVIATION (उड्डयन / हवाई यात्रा)

55.3.1 Airfare price ceiling (हवाई यात्रा दरों में नियंत्रण)

⇒ 2020-May: Civil Aviation ministry announced technical reforms e.g. The minimum airfare for Delhi to Mumbai is ₹3,500 and the maximum is ₹10,000. etc.

⇒ But poor cost benefit for the exam.

⇒ This may help in

  o Consumer protection during Corona travel. ग्राहक सुरक्षा.

  o solving the 'predatory pricing' problem among aviation companies. "जानबूझकर स्वयं की नुकसानी में सस्ते टिकट बेचना ताकि दुश्मन कंपनी का धंधा बंद हो जाए".- उस पर रोक.

55.3.2 🛫 Transport → Drone Regulation (ड्रोन विनियमन) & GARUD Portal

- **Boss?** Civil Aviation ministry designed the rules effective from 31/12/2018.

- India's airspace classified into

  - Red Zone (flying not permitted),

  - Yellow Zone (controlled airspace),

  - Green Zone (automatic permission).

- Drone-User will have to do one-time-registration with Digital Sky Platform app

- Then for every flight, Drone user must ask permission from mobile app. Based on the zone & GPS location its system will automatically permit / deny.

- Any drone without a digital permit will not be able to takeoff. Thus, it has "no permission, no takeoff" (NPNT) mechanism.

- 2019-Sept: Iran-backed **Yemenis Houthi** rebels used drone to destroy oil refineries in **Abqaiq, Saudi Arabia.**
- 2019-Dec: USA used drone to kill Iran's military commander Gen. Qassem Soleimani. So, now Government of India planning to tighten the drone regulations further.
- 🧙 😄 2020: **Garud Portal**: DGCA to give fastrack permission to government agencies for COVID-19 related drone operations.

Figure 2: Akshay may need 'Airlift', but 'Bhai' doesn't need Vande Bharat Mission. Capable of 1) becoming Captain of a ship 2) Rescuing kidnapped nurses 3) surviving oil-mine blast- all in Middle East

55.4 🧙 🚢 ✈ VANDE BHARAT MISSION 2020- INDIANS KI *WATAN-WAAPSI*

⇒ **Boss?** Ministry of Civil Aviation is coordinating with Ministry of External Affairs and state Govts (नागरिक उड्डयन विदेश मंत्रालय)

⇒ for bringing Indians back Indians who're stuck overseas during Corona.

⇒ It's considered to be India's largest repatriation (प्रत्यावर्तन/ वतन वापसी) operation since the 1990's Gulf/Kuwait war. [But UPSC doesn't usually engage in superlatives-KBC-GK: biggest/largest/longest...so not really important whether it was bigger than Gulf rescue.#थोड़ा-पढ़ो-आगे-बढ़ो]

⇒ Separately, to provide skill/employment for these returned-Indians, Government also launched SWADES (Skilled Workers Arrival Database for Employment Support) but all skill schemes under Pillar6: HRD.

55.5 🏛 TOURISM & MUSEUM INFRASTRUCTURE (प्रवासन व संग्रहालय)

- World Economic Forum's Travel & Tourism Competitive Index: india's rank improved from #64(2014) → #34(2019)
- Tourism contributes to over 1.60 lakh crore₹ in Foreign exchange earnings & provides employments to thousands of people.

55.5.1 🧙 🏛 [Yearbook] Ministry of Tourism

Dept	⇒ N/A
Attached, Subordinate, Statutory	⇒ N/A or not MCQ worthy
Autonomous	⇒ Indian Institute of Tourism and Travel Management ⇒ National Institute of Watersports ⇒ National Council for Hotel Management & Catering Technology ⇒ Institutes of Hotel Management
PSU	⇒ (*) India Tourism Development Corporation

(*) means approved for strategic disinvestment (=privatization) in 2019.

55.5.2 🏢 Tourism→ PRASAD & HRIDAY Mission

Both are Central Sector Schemes: 100% funded by Union. Both aim to improve the city infrastructure & amenities with special focus on improving the tourism.

PRASAD (2014-15)	HRIDAY (2014-15)
Pilgrimage Rejuvenation & Spiritual Augmentation Drive.	National Heritage City Development and Augmentation Yojana
Ministry of Tourism, initially 12 cities but then list keeps getting expanded to 20+.	Ministry of Urban Development, 12 cities: Ajmer (Rajasthan), Amaravati (Andhra Pradesh), Amritsar (Punjab), Badami (Karnataka), Dwaraka (Gujarat), Gaya (Bihar), Kanchipuram (Tamil Nadu), Mathura (UP), Puri (Odisha), Varanasi (Uttar Pradesh), Velankanni (Tamil Nadu), Warangal (Telangana),

⇒ 2015: Ministry of Tourism launched the **Swadesh Darshan Scheme** to develop circuits having tourism potential e.g. Tourist reception Centers, Solid Waste Management, Streetlight, Landscaping, parking etc. where the Private Sector is not willing to invest.

⇒ 😃**"Stranded in India"**- Tourism ministry portal for the foreigners who are stuck in India during Corona

⇒ 😃**"Dekho Apna Desh"**- Tourism ministry virtual campaign / webinar to promote tourism

55.5.3 🗿 ♂ 😵 [Yearbook] Ministry of Culture (संस्कृति मंत्रालय)

Dept	⇒ N/A
Attached	⇒ Archaeological Survey of India, New Delhi ⇒ National Archives of India, New Delhi
Subordinate	⇒ Kolkata: Anthropological Survey of India, Central Reference Library, National Library ⇒ National Museum, New Delhi
Autonomous	⇒ Lalit Kala Akademi, New Delhi ⇒ National School of Drama, New Delhi ⇒ Sahitya Akademi, New Delhi ⇒ Sangeet Natak Akademi, New Delhi ⇒ Central Institute of Buddhist Studies, Leh ⇒ Central Universities of Tibetan Studies, Sarnath, Varanasi ⇒ The Asiatic Society , Kolkata ⇒ Jallianwala Bagh National Memorial Trust ⇒ Zonal Cultural centers

💼Budget-2020: an **Indian Institute of Heritage and Conservation** under Ministry of Culture with the status of a deemed University. (Although location / whether autonomous/ statutory = yet to be announced)

55.5.4 🧳 💼Tourism → Museum Infra in 💼Budget-2020 (संग्रहालय)

5 onsite archaeological museums at	Rakhigarhi (Haryana), Hastinapur (Uttar Pradesh) Shivsagar (Assam), Dholavira (Gujarat) and Adichanallur (Tamil Nadu).
maritime museum	Lothal - the Harrapan age maritime site near Ahmedabad, by Shipping Ministry

Oldest Museum	Indian Museum in Kolkata is the oldest. We'll renovate it.
Museum on Numismatics and Trade	To be setup at Old Mint building Kolkata (Ref: Pillar#1A)
Tribal Museum	Ranchi (Jharkhand)

56 INFRASTRUCTURE → 🏢 URBAN (शहरी बुनियादी अवसंरचना)
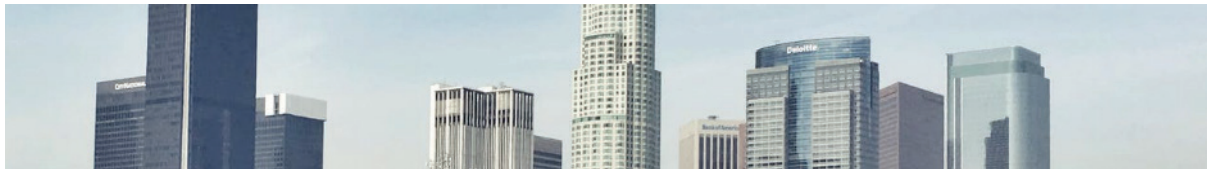
56.1.1 2020 marks 5th Anniversary of Urban Mission

Schemes	Collectively called
1) 500 AMRUT cities 2) 100 Smart cities → 💼Budget-2020: we'll develop five new smart cities. But, names yet to be announced.	Urban Rejuvenation Mission (शहरी कायाकल्प मिशन)
Above two + PM Awas Yojana (Urban) →	Urban missions

56.1.2 🏢 👤 Cities → TULIP Internship (2020-June)

⇒ TULIP (The Urban Learning Internship Programme.)

⇒ **Boss?** Joint initiative by Minister for Housing and Urban Development (MoHUA) and the All India Council for Technical Education (AICTE, Statutory body under the HRD/Edu Ministry) for giving 1 crore internships by 2025.

⇒ Urban local bodies (ULB) can announce Internship opportunities on TULIP website.

⇒ **Internship subjects?** Urban Planning, Water Supply, Waste Management, Slum rehabilitation, Digital Governance, Transport Engineering, Municipal Finance. (शहरी नियोजन, जल आपूर्ति, अपशिष्ट प्रबंधन, झुग्गी-पुनर्वास, डिजिटल प्रशासन, परिवहन इंजीनियरिंग, नगर निगम वित्त प्रबंधन)

⇒ **Eligibility?** Indian citizen who finished the final year of college within the last 18 months. (योग्यता)

⇒ **Duration of Internship?** eight weeks to one year. (इंटर्नशिप की अवधि)

⇒ **Budget allocation?** No separate budget provided but stipend may be given from the funds available under may be used from smart cities, AMRUT etc schemes, if ULBs wish

⇒ ✋Further administrative procedures / Salient features of the scheme = poor cost benefit.

56.1.3 🏢 🌲🌳🌴 URBAN → Misc → Nagar VAN (2020-Jun)

⇒ Boss? Ministry of Environment, Forest and Climate Change (पर्यावरण, वन और जलवायु परिवर्तन)

⇒ To develop 200 Urban Forests across the cities of India in the next five years

56.1.4 🏢 URBAN → Misc → Parliament area, Central Vista

⇒ Boss? Ministry of Housing & Urban Affairs → CPWD

⇒ New Delhi's Central Vista region has Rashtrapati Bhawan, Parliament House, North and South Block, India Gate, National Archives etc. All these iconic buildings were constructed before 1931. So these old buildings pose structural dangers. (जर्जर इमारत गिरने का डर)

⇒ Central Government ministries/dept/offices are scattered over different locations → → unnecessary travel & pollution.

⇒ Central Vista project aims to redevelop these buildings @₹20,000 crores.(पुनर्निर्माण)

⇒ 😎 2022= India's 75th Independence Day. So, govt hoped to finish building parliament by 2022. Other buildings to be finished in 2021-24.

⇒ 😫😄 Then Corona: funding issues, SC petitions → ball by ball commentary, not important.

56.1.5 🏢 📊 Cities → Misc → TWO Indices for Quality of Life

2020: Urban ministry launched two indexes/indices to assess quality of life of citizens in 100 Smart Cities and 14 other Million Plus Cities viz.

i. Ease of Living Index (EoLI)
ii. Municipal Performance Index (MPI)

✋But chasing their methodology and ranking = poor cost:benefit

56.1.6 🏢 📊 Cities → Misc →IUDX (संशोधन कर्ताओं को डाटा प्रदान करने के लिए)

India Urban Data Exchange (IUDX) by MoHUA + Indian Institute of Science (IISc), Bangalore. This portal provides open source data for researchers / app developers / startups.

56.1.7 🏘(🏠) → Affordable rental housing Complexes (AHRC)

किराए के मकान किफायती दरों पर गरीबों और प्रवासी श्रमिकों के लिए. → बिल्डर सरकारी जमीन पर / जर्जर सरकारी मकानों तो तोड़कर नए मकान बनाएगा- गरीब किरायेदारों के लिए. इस योजना में बिल्डर को रियायती दरों पर कर्जा और टैक्स में लाभ दिया जाएगा

⇒ **Boss?** Ministry of Housing & Urban Affairs (MoHUA)

⇒ Pradhan Mantri Awas Yojana – Urban (PMAY–U) → new subcomponent AHRC launched in 2020-May (under Atma-Nirbhar initiative).

⇒ Government will sign an agreement with builders (technically called as "Concessionaire"). Basically..

⇒ Builders will be given vacant govt land & dilapidated govt buildings, concessional loans, and tax relief. (How exactly? NOT IMP)

⇒ Builders will construct housing complexes → rent it for 25 years at affordable prices to urban migrants / poor.

⇒ **Benefit?** Migrants live in slums, illegal colonies or peri-urban areas to save rent. They spend lot of time travelling to workplaces. AHRC will ⬇ unnecessary travel from peripheral areas, congestion and pollution.

56.1.8 (🏠) Sustainable Housing → Global Housing Technology Challenge (GHTC) 2019

- Boss? Ministry of Housing and Urban Affairs
- asked experts / private sector companies to propose disaster-resilient, environment friendly, cost-effective and speedy construction technologies.

- They'll be implemented on a pilot basis in some cities to see the results.

56.1.9 (🏠) Sustainable Housing → World Habitat Award 2019 to Odisha's JAGA Mission

⇒ By a UK-based organization in partnership with United Nation (UN)-Habitat

⇒ 2019-Bronze award given Odisha government's Odisha Liveable Habitat Mission also known as 'Jaga Mission' in partnership with Tata Trust.

⇒ In this scheme, urban slum dwellers are given land ownership titles, create road, streetlight, water-sanitation infrastructure → Then Govt will not evict them / not destroy their slums. Permanent home address proof also helps poor families to enroll children in school, open bank accounts etc.

⇒ Beneficiaries are given 30 square metre of land free of cost and for the remaining land they have to pay as per the benchmark price.

56.1.10 (🏠) → Model Tenancy Act, 2019 (आदर्श किरायेदारी अधिनियम)

2019-Jul: RBI's quarterly residential asset price monitoring survey (RAPMS) found that housing affordability has worsened over the past four years. People's income failed to keep pace with rising property prices. In Mumbai, difficult to find home even with a budget of ₹ 45 lakhs!

Since it is not possible to construct houses for each and everyone, we also need to promote rental housing especially for migrant workers. But, current Rental Laws are archaic. So, **2019-July Ministry of Housing** & Urban Affairs drafted a **Model Tenancy Law** with following features, and asked States to adopt it:

✓ It covers properties rented for residential, commercial, educational use.

✓ Specific provisions about security deposit, mechanism to increase rental amount- in a way that it protects both the tenant and landlord. (किरायेदार और मकान मालिक)

✓ If tenant doesn't vacate the premises after rent-period is over or damages the property, then heavy penalties on him.

✓ Dy.Collector rank officials will be designated as 'Rent Authority (किराया प्राधिकरण)'. Higher appeal to Rent Court → Rent Tribunal. Disputes will be settled within 60 days deadline.

56.1.11 (🏠) → Corona: Landlords, tenants, rent & eviction

🎴 😄 Corona lockdown → Jobs lost → tenant families unable to pay rent → eviction. (मकान मालिक द्वारा किरायेदारों को घर से निकाल देना)

⇒ Some landlord windows / elderly solely relying on rent income for their survival. They also need protection. (कुछ मकान मालिक विधवा बुजुर्गों के लिए किराया ही उनकी आमदनी का सहारा था)

⇒ Some state governments announced relief/rules to address this. But, if all States adopt Central government's Model Tenancy Act, 2019- It will be useful. (आदर्श किराएदार अधिनियम)

⇒ Thehindu columnists write dozens of columns. But this is a very microscopic topic in the grander picture of " economic revival after corona." = Poor cost-benefit for exam

🏠 ✍ **Conclusion Housing?** A homeless family is more vulnerable to crime, disease & disasters. SDG Goal #11 requires India to provide safe and affordable housing to all by 2030. Aforementioned scheme / policy /

challenges….. अपराध, बीमारी और आपदाओं में एक बेघर परिवार की भेद्यता अन्यो से अधिक होती है. सतत विकास लक्ष्य : सभी को सुरक्षित और किफायती आवास उपलब्ध कराना जरूरी

57 Infra → Rural (🏠)

57.1.1 🏠 🏢 Panchayati Raj Day & Portals

- 73rd Constitutional Amendment Act,1992 came into force from 24 April 1993. (संवैधानिक संशोधन अधिनियम)
- So, from 2010 Government started commemorating 24th April as National Panchayati Raj Day.
- Panchayati Raj Ministry runs following Portals:
- **e-GramSwaraj:** Gram Panchayat Development Plans:- to prepare and monitor them.
- **PRIASoft**: monitor Receipts Expenditure of the Panchayati Raj bodies viz. Zilla, Block and Village Panchayat.

57.1.2 🏠 📐 Swamitva scheme for land survey & title disputes

⇒ 2020-Apr: Ministry of Panchayati Raj → Scheme launched on pilot basis in 6 states. (प्रायोगिक तौर पर चुनिंदा राज्यों में ही)

⇒ Rural inhabited lands will be survey with drones and technology. (जमीन का सर्वेक्षण)

⇒ It will help getting clarity over property rights → Land revenue collection, Bank loans application approval, Settlement of Title Disputes (जमीन मालिक की के कोर्ट विवादों का निपटान)

57.2 🏠 🚐 ❖ RURAL → MPLADS (1993)

Members of Parliament Local Area Development Scheme (सांसद स्थानीय क्षेत्र विकास योजना). **Central Sector Scheme** =100% funded by Union.

- **Boss**? Ministry of Statistics and Programme Implementation (MoSPI).
- Each MP can suggest development works worth ₹ 5 crore per year in his constituency. Rajya Sabha MP: any district in his State. Nominated MP can select any district in anywhere in India.
- Role of the Members of Parliament is limited to recommend works. Thereafter, it is the responsibility of the district authority (DM/Collector,IAS) to sanction, execute and complete the works recommended within the stipulated time period.

🏭 😷 **Corona**-2020-April: Govt suspend this scheme for 2 years = savings of about ₹8000 crores. total amount will be transferred into the Consolidated Fund. Govt justified it, "every rupee was needed to bolster the resources available to our nation as we address the impact of Covid-19"

57.2.1 🏛️ 🎡 MPLADS Suspended (योजना को स्थगित करना)

2020-April: To save the money for fighting Corona, Government announced two measure

⇒ MP salaries will be cut by 30% वेतन में कटौती

⇒ MPLADS scheme will suspended for two financial years i.e. 2020-21 and 2021-22

✅ Arguments favouring suspension योजना स्थगित करना= सही कदम	✋ Opposing scheme suspension योजना स्थगित नहीं करनी चाहिए थी
⇒ Nepotism: Politicians' relatives will be given the contracts. ⇒ Corruption: District administration will get the bribes, Substandard quality of assets developed- as per CAG reports. ⇒ Appeasement: Assets generally be developed in area with high concentration of a particular caste/religion who gave large number of votes to the said MP. ⇒ 16th Lok Sabha: 55% of the members have not even used the funds allotted from their quota. Usually MP spend ₹₹ only in the last year Before election for media-limelight. But such "election rush"= Work done in a haphazard manner. ⇒ भाई भतीजावाद, भ्रष्टाचार, तुष्टीकरण, चुनाव से पहले जल्दबाजी में ढेर सारी रकम और प्रोजेक्ट जारी करना- लेकिन गुणवत्ता पूर्ण संपत्तियों का निर्माण नहीं	⇒ 2010 Court judgement has held that the MPLADS scheme is not unconstitutional. कोर्ट ने भी इसे असंवैधानिक नहीं माना है ⇒ All members of parliament cannot become ministers. But if they have some funds at their disposal they can do some important work for their constituency and voters, depending on local needs. सांसद को अपने इलाके में अच्छे काम करने के लिए अवसर मिलता है. ⇒ Every government scheme has instances of corruption, nepotism and sub standard quality work. It doesn't justify that we should stop the scheme, rather we should fix those loopholes. धांधली तो हर योजना में होती है किंतु इसका उपाय यह नहीं योजना बंद कर दी जाए बल्कि योजना की खामियों को दूर करना चाहिए

🔢❓ **Which of the following statements is not correct regarding the Members of Parliament Local Area Development Scheme (MPLADS)?** *(UPSC-CDS-i-2020)*

(a) Members of the Parliament (MPs) sanction, execute and complete works under the scheme.

(b) Nominated Parliament can recommend works for implementation anywhere in the country.

(c) The scheme is fully funded by the Government of India.

(d) The annual entitlement per MP is Rs.5 crore.

57.3 🏛️ BORDER INFRA AND SHEKATKAR COMMITTEE (सीमा क्षेत्रों में बुनियादी अवसंरचना)

⇒ 2015: Defense ministry setup Lt General D B Shekatkar Committee to enhance combat capability and rebalance defence expenditure of the armed forces.

⇒ 2020-May: Defence ministry announced we'll implement it suggestions related to border infrastructure namely,

⇒ Border Roads Organisation (BRO)'s road construction work → Outsource to private players via Engineering Procurement Contract (EPC), if costing more than ₹100 cr= faster and more professional building of roads.

⇒ BRO to be given high-tech machines for snow clearance on Himalayan roads. Use Geo-Textiles for soil stabilisation, to prevent landslide damage to roads. सड़क से बर्फ हटाने और भूस्खलन से नुकसान रोकने के लिए अद्यतन मशीन और तकनीकी

⇒ Field officers to be given more financial and administrative powers. स्थानीय अधिकारियों को ज्यादा वित्तीय और प्रशासनिक सत्ताई दी जाएंगी ताकि जल्दी कम हो सके

⇒ Reforms for land acquisition and environmental clearance. भूमि अधिग्रहण और पर्यावरणीय मंजूरी।

⇒ **result**? Socio economic development & enhanced security in border areas. सामाजिक आर्थिक विकास और सुरक्षा

57.4 📖⚔ INFRASTRUCTURE: DISASTER, SECURITY & STRATEGIC AFFAIRS

57.4.1 👮👥 [Yearbook] Ministry of Home (गृह मंत्रालय)

Dept	⇒ Department of Border Management (सीमा प्रबंधन)
	⇒ Department of Internal Security (आंतरिक सुरक्षा)
	⇒ Department of Jammu, Kashmir & Ladakh Affairs
	⇒ Department of Home: Notifies the appointment of the Prime Minister and other Ministers etc.
	⇒ Department of Official Language
	⇒ Department of States
Attached / Subordinate Offices	⇒ Registrar General & Census Commissioner: National Register of Indian Citizens, Census; helps rural and urban ministries for conducting Socio- Economic and Caste Census (SECC) in respective areas.
	⇒ Assam Rifles, Border Security Force (BSF), Central Reserve Police Force (CRPF), Sashastra Seema Bal (SSB)
	⇒ Central Industrial Security Force (CISF)
	⇒ Indo Tibetan Border Police (ITBP)
	⇒ National Security Guard (NSG)
Statutory	⇒ National Investigation Agency (NIA)
	⇒ National Disaster Management Authority (NDMA) →Subhash Chandra Bose Aapda Prabandhan Puraskar (Awards for disaster management)
	⇒ National Human Rights Commission (NHRC)
PSU	⇒ Repatriates Co-op. Finance & Development Bank
Autonomous	⇒ Sardar Vallabhbhai Patel National Police Academy, SVNPA, Hyderabad for **training of IPS officers**
	⇒ National Crime Records Bureau (NCRB)

	⇒ National Foundation for Communal Harmony (NFCH)
	⇒ International Coalition for Disaster Resilient Infrastructure (CDRI)

⚖️ Home ministry also looks after the administrative matters related to **Padma** Awards, and legislative matters related to **Passport Act & Citizenship.**

57.4.2 🕵️ 🗺️ Disaster Infrastructure → Home Ministry → CDRI 2019

⇒ International Coalition for Disaster Resilient Infrastructure (CDRI)

⇒ Announced in 2019's UN Climate Action Summit in New York, USA

⇒ HQ: Delhi. Registered under Societies Registration Act,1860

⇒ Function: international knowledge exchange for disaster and climate resilience of infrastructure → help achieving the Sendai Framework targets for disaster risk reduction

57.4.3 🕵️ 🛡️ Ministry of Defence (रक्षा मंत्रालय)

Dept	⇒ Department of Defence → Armed Forces, Coast Guard, Border Road Organisation, National Cadet Corps (NCC-1948, Motto: एकता और अनुशासन, Unity and discipline)
	⇒ Department of Defence Production
	⇒ Department of Defence Research and Development
	⇒ Department of Ex-Servicemen Welfare
	⇒ **Department of Military Affairs** → Chief of Defence Staff (Bipin Rawat has rank of four star general and also 'Secretary' to Govt)
Attached	⇒ DG Defence Estate, DG Defence Accounts and others
Subordinate	⇒ Indian Ordnance Factories
Autonomous	⇒ Indian Military Academy (IMA), Dehradun; Sainik School Ghorakhal, Nainital, Uttarakhand and other similar organizations.
	⇒ Institute for Defence Studies and Analyses (IDSA)
Committee	⇒ 2001: Defence Acquisition Council (DAC) was set up under Defence Minister to fasttrack the procurement of armaments for army, navy, airforce, coastguards. (रक्षा साधनों की खरीद के लिए परिषद)
Portal	**Srijan** portal (2020-Aug)
	⇒ displays defence items that are being imported currently. So that the Indian industry can design, develop and manufacture them domestically.
	⇒ Help interaction between defence public sector undertakings (DPSUs), Ordnance Factory to interact with the Indian industry.
	⇒ Benefit: Promotes indigenization of defence production.
PSU	⇒ Hindustan Aeronautics Limited, HAL.
	⇒ Bharat Electronics, Bharat Dynamics

	⇒ Garden Reach Shipbuilders, Goa Shipyard, Hindustan Shipyard, Mazagon Dock Shipbuilders
	⇒ Mishra Dhatu Nigam Limited, MIDHANI.
	⇒ (*) Bharat Earth Movers

(*) means approved for strategic disinvestment (=privatization) in 2019

57.4.4 🕵 Ministry of External Affairs (विदेश मामलों का मंत्रालय)

Responsible for organizing the **Pravasi Bharatiya Diwas**: (More in 📄 Pillar#3A).

Dept	⇒ N/A
Attached	⇒ Foreign Service Institute, Delhi
Autonomous	⇒ India Centre for Migration (ICM)
	⇒ India Development Foundation of Overseas Indians
	⇒ Indian Council for Cultural Relations
Portals	⇒ Madad Portal for consular grievances.
	⇒ Passport India Portal
	⇒ Kailash Mansarovar Yatra Portal
	⇒ **e-Sanad** for online verification and attestation of documents of Indian citizens abroad.

58 📡 INFRASTRUCTURE → COMMUNICATION (संचार)

58.1 📞 COMMUNICATION → TELECOM → CONTROVERSIES / NEGATIVE NEWS

58.1.1.1 ☎ ⚔ 😲 *Controversy: Adjusted Gross Revenue (AGR)*

⇒ Early 90s: Under the LPG reforms, private sector telecom companies were allowed to begin operate in India.

⇒ They had to obtain telecom licenses & pay certain fees to the Government every year.

⇒ This fees is calculated as a % of their Adjusted Gross Revenue (AGR: समायोजित सकल राजस्व / आमद).

⇒ Later, Department of Telecommunications (DoT) and Private Telecom Companies differed over the definition / formula of AGR. → Matter went to Supreme Court.

⇒ SC ordered companies to pay ₹₹ but they're making excuses ke "we'll pay it in instalments in the next 20 years", SC says "no, you must pay it by next 10 years"…=ballbyballNOTIMP

58.1.1.2 ☎ 🗡 😫 *Controversy: Interconnect Usage Charges (IUC)*

⇒ IUC is a fee that one telecom company (e.g. Jio) pays to another company (e.g. Airtel) when its (Jio customers') makes a call to a user of that other company (to airtel)

⇒ The charge is decided by TRAI on a per minute basis.

⇒ 2019: Jio started levying IUC from its Jio-customers when they make calls to non-jio customers.

⇒ 2020: TRAI is likely to reduce IUC to ZERO paise.

58.2 💻 📱 🛰 😎 COMMUNICATION → IT → 5G REVOLUTION IN INDIA

Fifth generation (5G) of wireless technology = 2 to 20 Gbps speed, which is much higher than present 4G which gives 6-7 Mbps speed. (एक अद्यतन बे-तार तकनीक जो 4g के मुकाबले बहुत ही ज्यादा तेजी से डाटा पहुंचा सकती है)

✓ **Latency** is the amount of time taken by data to travel between its source and destination. 5G has very low latency. (स्रोत और लक्ष्य के बीच डाटा पहुंचाने में बहुत ही कम विलंब होता है)

✓ **Network slicing (नेटवर्क के टुकड़े करना):** mobile operators to create multiple virtual networks within a single physical 5G network. Provide faster data to tele-surgery in rural areas, driverless car, etc.

✓ Thus, 5g is useful in **Internet of Things (IoT) and machine to machine (M2M)** communications, CCTV surveillance, drones, real time data analytics, **industrial revolution 4.0.**

58.2.1 💻 📱 🛰 😕 Challenges and Opportunities in of 5g (इसे अपनाने में चुनौतियां+अवसर)

✓ 5g signals tend to deteriorate faster over long distances than lower-frequency signals. So, more number of towers may be required than 4g, to cover same geographical area

✓ People will have to upgrade their devices to use 5g → **Make in India**, employment opportunities.

✓ Considering these benefits, USA, China, S. Korea are working on war-footing to implement 5g. Our Department of Telecom too had setup **A.J.Paul Raj Committee**, it prepared a roadmap for rollout of 5G telephony in India by 2020.

✓ 5g technology can work in the **millimetre bands** of 24.75 to 27.25 GHz spectrum. So, Government planning to auction these "millimetre bands spectrum auction" in 2020.

58.2.2 🏚 5G Hackathon by DoT (2020)

⇒ 2020: Department of Telecommunications (DoT) has launched '5G Hackathon' in association with Niti Aayog, MEITY, MSME Ministry, IITS & other academic and industry stakeholders.

⇒ Individuals and teams to give innovative ideas/solutions related to 5G → win prizes worth total ₹2.5 crores !

58.2.3 🕵 NEST Division in MEA

- New, Emerging and Strategic Technologies (NEST) division created by the Ministry of external affairs (MEA) for collaboration with foreign nations for 5g, artificial intelligence etc.

- **Sidenote: D10 group?** (More in 📄 Pillar#3B)

58.3 🖳 🖳 💾 ES19: Public Data: For the people, by the people
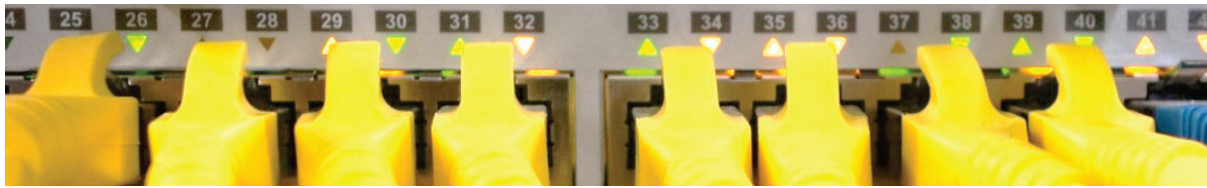
- (Define) Data is a set of factual information stored in digital form. (डिजिटल रूप में संग्रहीत तथ्यात्मक जानकारी)
- (Origin) When people conduct their day-to-day activities online, they leave digital footprints- in chatting, searching google, buying on amazon, file taxes, posting on social media etc. While doing these activities online, people produce data about themselves which is stored on public and private servers.

58.3.1 💾 Types of Government Data

1) **Administrative data (प्रशासनिक डाटा):** Birth-death records, pensions, tax records, marriage records, crime reports, land-property registrations, vehicle registrations etc.
2) **Survey data (सर्वेक्षण):** Census data, National Sample Survey data about employment, education, nutrition, literacy etc.
3) **Transactions data (लेनदेन संबंधी):** e-National Agri Market data, Taxes, User-fees such as railways etc.
4) **Institutional data (संस्थागत):** Public school data on pupils, public hospital data on patients, etc. Most such data are held locally, predominantly in paper based form.

58.3.2 💾 😀 Public Data: Opportunities through Data integration

Since the Administrative, Survey, Transaction and Institutional datasets are unconnected, each ministry only has a partial picture. If all these public datasets are integrated then (सार्वजनिक डेटासेट एकीकृत किए जाए तो):

- While filling every new form, Person will not have to provide same details e.g. his education, address proof, farm-land ownership proof etc.
- **Weeding out bogus beneficiaries (फर्जी लाभार्थीओ को रद करना):** If vehicle ownership records are compared with BPL beneficiaries list → remove car owners claiming to be BPL for Government schemes.
- **National health register (राष्ट्रीय स्वास्थ्य रजिस्टर):** Similar to Digilocker it'll contain medical records of patient tied with his Aadhar. Benefits? 1) During emergency doctor can access the medical history, even if patient is unconscious 2) surveillance of syndromes 3) immunization information.
- Digital Dashboard for Transparency & Accountability(पारदर्शिता और जवाबदेही)
    - A district education officer can make better decisions if he knows, for each school in his district, attendance rates of students and teachers, average test scores and status of school toilets.
    - Parents can make better decisions about which school to send their children to if they know the average absenteeism rate of teachers in their village and can compare the rate to that in the neighboring village.
    - Researchers can use such data to validate the efficacy of Govt schemes and suggest remedies for future. (Union government's already launched **Open Government Data platform** for this.)
- **Private sector** should be given selected databases for commercial use, after paying fees to Govt. for example,

- If school test scores' data of a given district / city is sold to a coaching company, it can use it for more targeted advertising / setting new classrooms in the areas accordingly. So, the company will benefit, parents will benefit.
- Similarly, Uber can use public bus transport / passengers data to identify congested areas, deploy more taxis / rickshaws in the peak hours accordingly.
- Since govt is selling data-> it'll earn a new stream of revenue to control fiscal deficit.
- 2019-Sept: Considering these benefits, MEITY setup **Kris Gopal Krishnan** committee for the regulation of non-personal data such as community data, anonymous data. (गैर-निजी डेटा)

58.3.3 💾 Telangana Government's Samagra Vedika initiative:

Using the name and address of an individual as common identifier, Telangana Government linked 25 Government datasets such as

- crimes, assets, electricity connection, subsidies, education, taxes etc
- Each individual was then further linked to relatives such as spouse, siblings, parents and other known associates.
- This helps in detection of crime. Identifying ineligible/fictitious beneficiaries.

Union Government is also "linking" of Bank account datasets – primarily through Aadhaar number, PAN database, mobile numbers. It helps combing through transaction records, find out tax evaders and Benaami accounts.

58.3.4 💾 Govt efforts to release statistical data

Following initiatives to help the policymakers, researchers, innovators, data scientists, journalists and citizens to find statistical information related to governance:

⇒ National Informatics Centre (NIC) → Open Government Data (https:// data.gov.in)
⇒ NITI announced to launch National Data and Analytics Platform (NDAP) in 2021

58.3.5 💾😨 Challenges in public data

- **If Data Privacy** (डेटा की निजता / गुप्तता) is breached or data is leaked accidentally, it may bring forth legal consequences, financial implications and disruption in family / social life. E.g. if death certificate leaked online that Mr."X" died of HIV/AIDS. His entire family may be ostracized by the neighbors.
- **If data is hacked:** financial loss, national security. (आर्थिक नुकसान राष्ट्रीय सुरक्षा खतरे में)
- A majority of the poor still have no digital footprint. Existing **paper-based data need to be converted** into digital form. Govt can ask citizens to become volunteers, even launch App.
- District government **official should be trained** in "How to use data for analytical decision making?" Otherwise mere collection of data will be of limited use. (डाटा की मदद से निर्णय क्षमता को कैसे बढ़ाएं? इसकी अफसरों को तालीम देनी होगी)
- Many State govt create 'online dashboards' for monitoring schemes BUT These dashboards are not easily accessible to citizens, require password; sometimes portals are not functional or contain outdated data.

58.3.6 💾 ✍️ Conclusion: Public Data (सार्वजनिक डेटा)

✓ If scattered public data is integrated, it'll bring greater transparency, accountability in public services and improve targeting in welfare schemes. (बिखरे हुए सार्वजनिक डेटा को एकीकृत किया जाए- पारदर्शिता जवाबदेही योजनाओं की असरकारकता बढ़ेगी)

✓ Therefore, just like highways, government needs to view data as a public good and important infrastructure. Govt should make necessary investments & regulations for it, while protecting data privacy. (सरकार ने निवेश करना जरूरी नियंत्रण करना जरूरी किंतु नागरिक की निजता का सम्मान करना चाहिए)

✓ In the spirit of the Constitution of India, data "of the people, by the people, for the people" must therefore become the mantra for the government.

58.4 📡 📡 SPACE TECH INFRASTRUCTURE (अवकाश क्षेत्र)

⇒ Prime Minister → Department of Space (DOS: HQ Bengaluru) → Indian Space Research Organisation: (ISRO: HQ Bengaluru)

⇒ DOS/ISRO has two Government companies
  - **Antrix**: It helps foreign nations/ companies to launch satellites with ISRO's help.
  - **NewSpace** India Limited (NSIL, 2019) for production of launch vehicles & collaboration with private sector players.

58.4.1 🐣 📡 📡 Space Tech: Atma-Nirbhar

⇒ 2020-Jun: Govt setup Indian National Space Promotion and Authorization Centre (IN-SPACe), an independent agency under ISRO.

⇒ IN-SPACe will help private companies to use Indian space infrastructure for developing / launching satellites / space tourism etc. (निजी क्षेत्र की कंपनियों को अवकाश क्षेत्र की सरकारी बुनियादी सुविधा उपयोग के लिए अवसर)

59 📦 💰 Infra → GSM3: Investment Models (निवेश के तरीके)

59.1 💀👉🧑🛡 Infra.Dev. → Non-PPP → GOCO for Indian Army

Army's Central Ordnance Depot (COD) and Army Base Workshops (ABWs) are responsible for manufacturing & warehousing, maintenance, repair and overhaul (MRO: विनिर्माण और भंडारण, रखरखाव, मरम्मत) of

⇒ Weapons, Ammunition, Tanks, Trucks, Radars, Air defense system etc.

⇒ Clothing, footwear, headgear, tent & camping gears, kitchen equipment etc.

But,

⇒ 2015: CAG audit found them to be overstaffed, inefficient and slow.

⇒ 2016: Defence Ministry's Lt. Gen. DB Shekatkar (Retd.) committee to "enhance combat capability and re-balancing defence expenditure." → recommended GOCO Model.

59.1.1 🛡 GoCo Mechanism?

⇒ Government-Owned Contractor-Operated (GOCO) model: private contractors operate the army's base workshops that repair equipment from guns and vehicles to tanks and helicopters.

⇒ Government remains the owner of the ABW workshop / COD depot

⇒ But a private player is given a contract to take over the operation / running of such a workshop / depot. He'll be responsible for warehousing operations, transportation of material, repair, maintenance etc.

⇒ He will have to absorb the existing civilian employees working there.

⇒ Private player must be an Indian registered company with at least 10 years of working experience & "y" crore of turnover

59.1.2 🛡 GoCo: Pros and Cons

😎 Benefits? फायदे	🙁 Challenges? चुनौतियां
⇒ ⬇ salary bill for Govt वेतन खर्च कम होगा	⇒ Private operators may not have the expertise to deal with military equipment;
⇒ Private operators can easily go into partnership with Original Equipment Manufacturer (OEM) for service, repair and spare parts. आसानी से पुर्जों का इंतजाम कर सकता है	⇒ Private companies interested in bidding mostly for workshops/Depots that handle Combat Tanks because they can easily charge Rs 8-9 crore for tanks' repair/services/spareparts every time. Whereas not much profit in clothing/kitchen utensils/cooking stove related
⇒ Private firms will not have to invest in land, infrastructure, machinery. Because Government already built that. निजी क्षेत्र के	

😎 Benefits? फायदे	😟 Challenges? चुनौतियां
खिलाड़ी का जमीन मशीनरी इत्यादि में निवेश का पैसा बच जाएगा	work. निजी खिलाड़िओ को सिर्फ टैंक की फैक्ट्री में दिलचस्पी है क्योंकि वहां पर मुनाफे के अवसर ज्यादा है
	⇒ **Strategic / Security challenges:** what if private player sells the tank/radar blueprints to Pakistan/China? सामरिक चुनोतिया: दुश्मन देश को सेना की गुप्त जानकारी बेच दी तो ?

59.2 💰🏗️ Infra Finance → National infrastructure pipeline (NIP)

⇒ **15th Aug, 2019:** PM Modi announced Rs.100 lakh crore would be invested on infrastructure over the next five years.

⇒ **2019-Sept:** Finance Ministry set up a task force under the Secretary of Dept of Economic Affairs (DEA). Based on its report,

⇒ **2019-Dec:** FM Nirmala S. announced NIP (राष्ट्रीय अवसंरचना पाइपलाइन). It aims to mobilize 102 lakh crore worth infrastructure investment in the next five year (2019-20 to 2024-25).

⇒ This funding will be spread across Energy (24%), Roads (19%), Urban (16%), Railways (13%), Irrigation (7%) etc.

⇒ **2020-Apr:** Investment target has been ⬆ from ₹ 102 lakh cr to 111 lakh cr

Further, the Government will also initiate following reforms:

59.2.1 💰🏗️ NIP → Infra Finance Reforms → Financial Market Reforms

1) Government and SEBI will undertake technical reforms to **strengthen municipal bond** market, and NBFCs such as
   a) infrastructure investment trusts (InvITs),
   b) Infrastructure Development Funds (IDFs),
2) Stringent monitoring to prevent **ILFS-NBFC type crisis** in future.
3) **FDI, FPI** investment norms will be relaxed.

59.2.2 💰🏗️ NIP → Infra Finance Reforms → Credit Enhancement Fund (CEF)

⇒ Pension and insurance companies usually avoid investing in bonds lower than 'AA' rating, due to strict regulatory norms by PFRDA and IRDAI respectively.

⇒ So Government will ask them to relax the investment norms for infrastructure projects.

⇒ Many of indian infrastructure companies / projects have poor bond-rating. So, Government will setup a Credit Enhancement Fund (CEF: ऋण संवर्धन निधि), which will basically provide guarantee to such projects' lenders → bond rating upgraded → more investors attracted.

59.2.3 💰🏷 NIP → Others reforms

1. Monetization of land assets owned by Govt. (सरकारी भूमि को बेचना/किराये पर देना)

2. Market based pricing mechanisms (बाजार आधारित मूल्य निर्धारण तंत्र) to increase user fees on infrastructure. (e.g. if electricity price increased by x% then raise metro-train-fares by y%)

3. Technical guidelines for uniform quality, disaster resilient roads, buildings, etc. (e.g. x% cement with y% sand etc.)

4. Training and capacity building for legal and financial experts so they can frame better type of PPP contracts → less chances of project delays or disputes or NPA.

5. Legal reforms so PPP contract disputes can be settled through arbitration outside courts. (कोर्ट के बाहर ही मध्यस्थता से समाधान/सुलह)

59.3 ✍ MOCK QUESTIONS FOR MAINS

1) " India stands to gain a lot from the global 5G revolution." Elaborate ("भारत, वैश्विक 5 जी क्रांति से बहुत कुछ हासिल करने के लिए परिपक्व है।" विस्तृत व्याख्या करें |)

2) "Construction of toilets is only "one part" of the solution for a clean India." Elaborate. ("शौचालय निर्माण, स्वच्छ भारत के लिए समाधान का केवल एक ही हिस्सा है।" विस्तृत व्याख्या करें |)

3) "Aggregation of public data holds a variety of applications for good governance." Substantiate with examples.("सार्वजनिक डाटा का समन्वयन- सुशासन के लिए कई प्रकार की उपयोगिता रखता है।" सउदाहरण अपने कथन की पुष्टि करें |)

4) "Public data is as important for good governance as national highways are for economic growth." Discuss. ("सार्वजनिक डाटा सुशासन के लिए उतना ही महत्वपूर्ण है जितना कि राष्ट्रीय राजमार्ग आर्थिक विकास के लिए है ।" चर्चा करें।)

5) Identify the prospects and constraints in adoption of electric vehicles in India and provide suggestions in this regard. भारत में बिजली द्वारा चलने वाले वाहनों को अपनाने में आकर्षण और चुनौतियां. तथा इस अनुसंधान में सुझाव दीजिए

6) What are the challenges in infrastructure projects' finance and execution in India? How will National Infrastructure Pipeline help in this regard? भारत में बुनियादी ढांचा परियोजनाओं के वित्त और निष्पादन में क्या चुनौतियाँ हैं? इस संबंध में नेशनल इन्फ्रास्ट्रक्चर पाइपलाइन कैसे मदद करेगी?

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