YK GIST

FEBRUARY 2019

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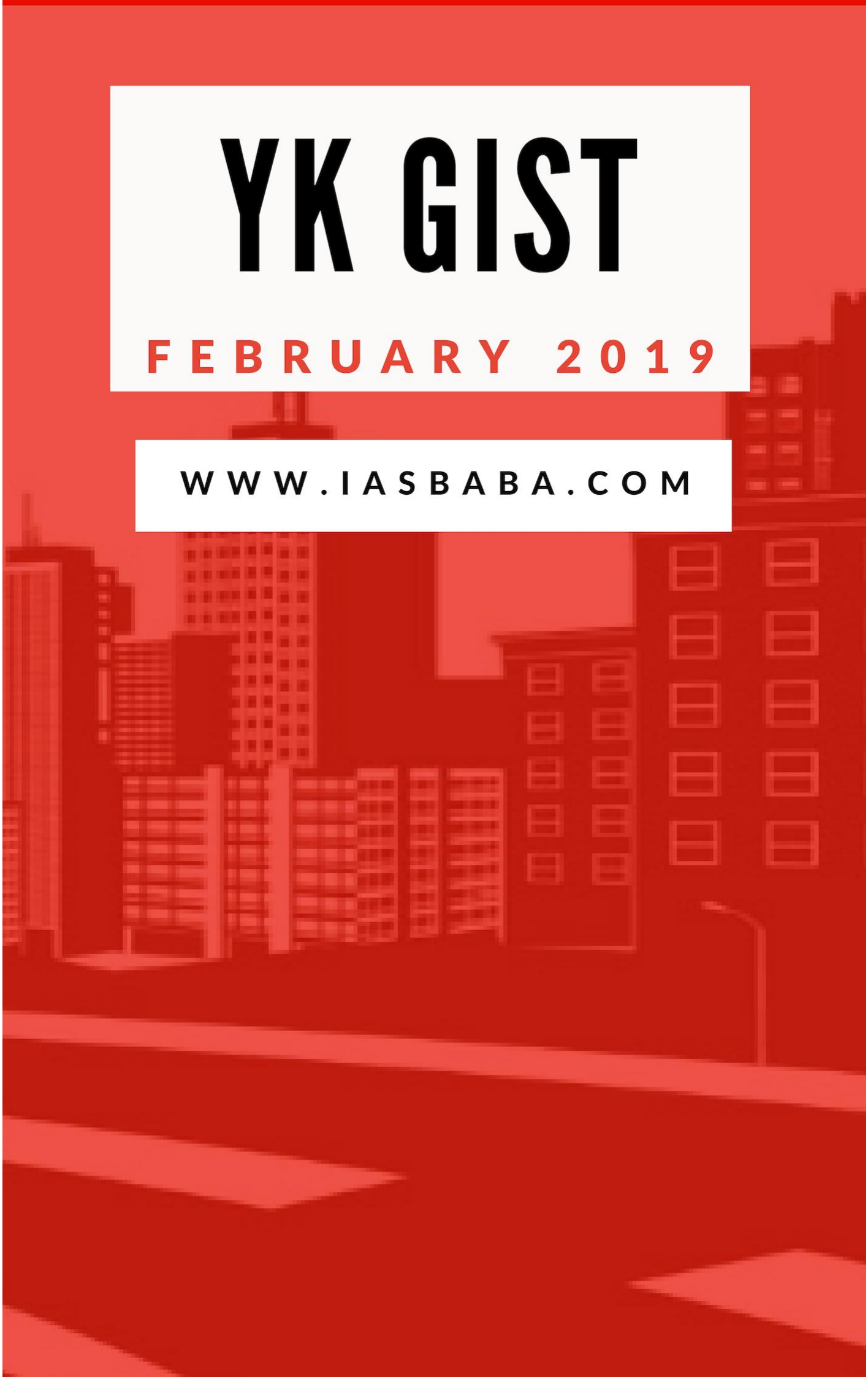

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Preface

This is our 47th edition of Yojana Gist and 38th edition of Kurukshetra Gist, released for the month of February 2019. It is increasingly finding a place in the questions of both UPSC Prelims and Mains and therefore, we've come up with this initiative to equip you with knowledge that'll help you in your preparation for the CSE.

Every issue deals with a single topic comprehensively sharing views from a wide spectrum ranging from academicians to policy makers to scholars. The magazine is essential to build an in-depth understanding of various socio-economic issues.

From the exam point of view, however, not all articles are important. Some go into scholarly depths and others discuss agendas that are not relevant for your preparation. Added to this is the difficulty of going through a large volume of information, facts and analysis to finally extract their essence that may be useful for the exam.

We are not discouraging from reading the magazine itself. So, do not take this as a document which you take read, remember and reproduce in the examination. Its only purpose is to equip you with the right understanding. But, if you do not have enough time to go through the magazines, you can rely on the content provided here for it sums up the most essential points from all the articles.

You need not put hours and hours in reading and making its notes in pages. We believe, a smart study, rather than hard study, can improve your preparation levels.

Think, learn, practice and keep improving! You know that's your success mantra ☺

Infrastructure in India

POWER

India has electrified all its villages twelve days ahead of a deadline set by Prime Minister Narendra Modi. The electrification of Leisang, in the eastern state of Manipur, marked a landmark moment in Prime Minister Narendra Modi's program to bring light to every one of India's villages. Data showed that all of India six lakh census villages have now been electrified.

What does Électrified' mean?

Electrified means the village is connected to power grid. It essentially does not mean that all its habitants have access to electricity. The government deems a village "electrified" if power cables from the grid reach a transformer in each village and 10% of its households, as well as public places such as schools and health centers, are connected.

Issues that have plagued the sector: Present & Future

- Efforts to provide electricity to every Indian have historically been hampered by poorly designed and implemented schemes that encouraged contractors to do the bare minimum to make sure a village qualified as electrified, resulting in inconsistencies in official data, and glaring disparities on the ground.
- The next challenge for the government will be to install electrical connections to about 30 million homes that are still off the grid.
- Electricity supply is controlled and maintained by India's state governments, and, these government-owned distribution companies "remain the weakest link" in the power sector value chain. They are badly run and unable to invest in upkeep of the local distribution infrastructure. Reliability of electricity supply is "likely to remain a dream" for most consumers in India for years to come.
- Grid reliability challenges are more severe in dispersed rural areas than in cities. Though India has put rural electrification in a sharper focus over the last few years, upgrading of local distribution infrastructure, including metering and billing, is crucial. That will determine whether the schemes launched for total village electrification bear the desired results and lead to true 100% household electrification.
- Most power distribution companies (discoms) continue to struggle with their financial turnaround plans despite implementation of the Centre's mega loan recast scheme called UDAY. Unable to charge cost reflective tariffs, discoms have been resorting to widespread load-shedding to check their operational losses.

The Way Ahead:

As electricity comes along it creates a consumption multiplier. It acts as an investment multiplier. It works as an education multiplier. It works as a health multiplier.

- What is required from the federal government is to push the state-run distribution companies to carry out robust ground surveys and organize frequent camps to achieve the target so that not one household is left out from electrification. Unless that is done, the reliability of supply and viability of the distribution business will be difficult to achieve.
- To achieve a consistent round-the-clock power supply, considerable improvement in the operational efficiency of distributors through extensive and intensive change management and capacity-building programmes as well as strengthening of the electricity sub-stations and sub-transmission network are required. “At the same time, electricity must be priced rationally and the tariff structure is simplified.
- Decentralized renewable energy solutions such as mini-grids and rooftop solar, where the grid can’t reach or reliably serve, and operating together is the most sustainable last-mile solution to reach consumers and achieve universal access to energy.

We need innovative solutions to address the electricity access challenges posed by rural India:

- Village-level entrepreneurs could be contracted to operate and maintain the local distribution while generating bills and collecting revenues from the customers.
- Banking on community relationships, these entrepreneurs could improve compliance on payments as well as curb stealing of power.
- Recruiting and training local youth could help address maintenance issues. This will also help in creating more skilled jobs and entrepreneurs in rural areas.
- Pre-paid and smart metering systems are other ways to encourage payments. Such solutions need to be piloted and tested.

Be Prelims-Ready:

Electricity: Concurrent subject

Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya):

- *Target:* To achieve universal household electrification in the country by December 31, 2018.
- Aims to improve environment, public health and education and connectivity with help of last mile power connections across India.
- Aims to build upon Deen Dayal Upadhyaya Gram Jyoti Yojana launched in 2015 and Rajiv Gandhi Grameen Vidyutikaran Yojana launched by the UPA government in 2005, both of which also aimed to provide free electricity connections to the poor.

Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

- Designed to provide continuous power supply to rural India
- Replaced the Rajiv Gandhi Grameen Vidyutikaran Yojana

- Aim: To replace all incandescent bulbs in the country with LED lights in the next 3 years

Plant-Microbial Fuel Cell generates electricity from living plants

Generates electricity while the plants continue to grow; doesn't affect the plant's growth or harm its environment

The Process:

- It works by taking advantage of the up to 70 percent of organic material produced via photosynthesis that can't be used by the plant and is excreted through the roots.
- As naturally occurring bacteria around the roots break down this organic residue, electrons are released as a waste product.
- By placing an electrode close to the bacteria to absorb these electrons, the research team was able to generate electricity.

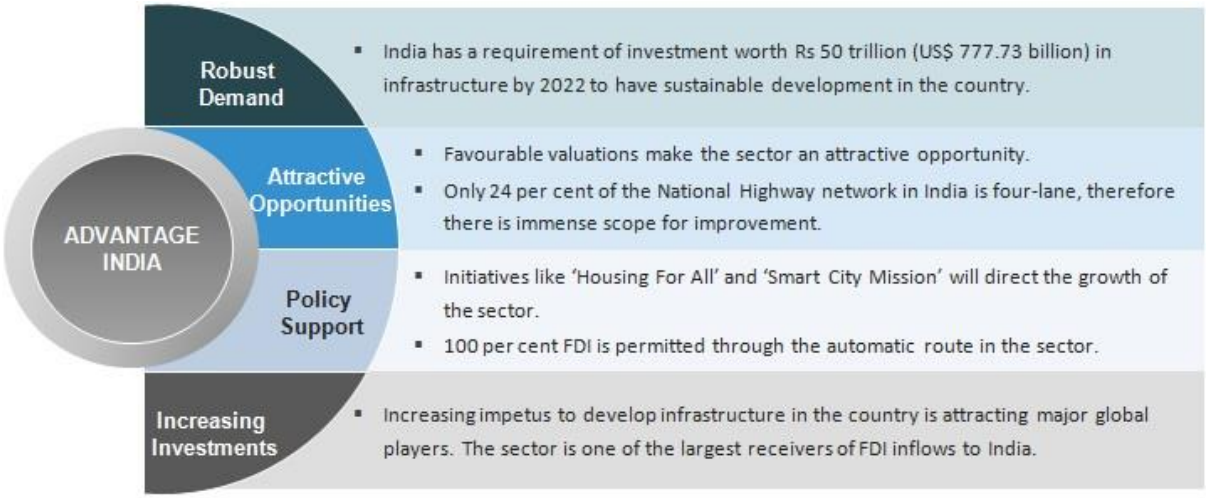
To make plants glow: **Inject Luciferin:** A molecule, which when converted into oxyluciferin, releases the energy in the form of visible light

Connecting the dots:

1. Electricity is the 'guiding light' towards attaining the goal of 'developed India'. Critically analyse with respect to new scheme launched recently.
2. Energy security in India can be achieved by adopting a right mix of coal-based power along with renewable energies. Discuss.
3. The Power for all by 2022 target would require robust and innovative tools to measure and monitor the progress on a multi-dimensional level, rather than just counting the number of connections. Discuss.
4. Saving power is important for the economy. Can you suggest certain policy provisions which can be designed to achieve that end? Discuss.

TRANSPORTATION

Infrastructure sector is a key driver for the Indian economy. The sector is highly responsible for propelling India's overall development and enjoys intense focus from Government for initiating policies that would ensure time-bound creation of world class infrastructure in the country. Infrastructure sector includes power, bridges, dams, roads and urban infrastructure development. In 2018, India ranked 44th out of 167 countries in World Bank's Logistics Performance Index (LPI) 2018.



Land acquisition remains a significant challenge for infrastructure creation. The critical step here is to gradually tie-up land allocation and project allocation through the sector-specific agencies at work. While the issue around land acquisition is complex, land is the most crucial component of infrastructure creation in possibly every segment. Therefore, urgent attention is due.

Co-operation within infrastructure segments, especially through policies that consider sectoral interlinkages is crucial for the infrastructure ecosystem to deliver value. Power generation adds value when transmission and distribution assets can assist in giving the power to end users. Biofuels can add value when the water required to generate the raw material for them does not impede other more critical water needs in an economy.

Policies for the sector: Continually asking questions and ensuring that policy consistency is maintained across interlinked infrastructure sectors is the only way for infrastructure to indeed create value for all. Now is the time to further push forward with policies that can help further facilitate the flow of capital into Indian infrastructure. It is also essential to realise that such changes are gradual, small iterations in the right direction can have significant positive lasting effects.

Regulations in the sector: While infrastructure assets vary significantly on the level of regulatory purview, it is essential that regulations are prudently used and do not stifle risk-taking and value creation. Asset returns need to be adequate to compensate for the risks involved to get both global and local capital to fund Indian infrastructure. Therefore, it is essential that greater focus is paid to tariff pricing, especially to the drivers of tariff rates. One size fits all solutions will lead to inefficient outcomes in the long-run.

Overhaul India's infrastructure sector

The shakeout in the financial markets, the reluctance of banks to lend, and struggling shadow banks have triggered uncertainties, hindered regulators and confused investors. These masks a prosaic but significant anomaly; the absence of a bankable model to finance infrastructure. The situation calls for prompt action or risk extreme hardships for many infrastructure companies and financial institutions in a decade.

An efficient transport infrastructure is the biggest enabler for growth. It should been one of the foremost priorities of our government to build a transport infrastructure that is indigenous and cost-effective, links the remotest corners of the country, is optimally integrated across various modes and is safe and environment friendly. A lack of good transport infrastructure has been a major hindrance for growth in the country in the past and our focus has been on rectifying this.

So, what is happening?

- The road and sea transport networks are being developed for providing better, seamless and more efficient access not just within the country, but also to our neighbouring countries using an optimal mix of roads and waterways—whether it is to Afghanistan and beyond through Chabahar, or Bangladesh, Myanmar and Thailand through upcoming highways and waterways.
- Ring roads, expressways and bypasses are being constructed around many big and small cities and towns to beat traffic congestion and reduce pollution.
- Innovative solutions like seaplanes, ropeways, aeroboats and double-decker buses are being actively explored for adoption. These will bring down the traffic pressure and congestion on roads.
- Seaplanes have already been tested, and trials are soon to be conducted on aeroboats. A memorandum of understanding (MoU) has been signed with Austrian ropeway company Doppelmayr for building ropeways through congested cities and hilly areas, and another MoU has been signed with Transport for London to help us overhaul our urban transport.

To bolster remote north east:

- The Government has launched a new airport at Hollongi in Arunachal Pradesh, the nearly five-kilometer long Bogibeel bridge, a road and rail link over the Brahmaputra, the north east's biggest river at Guwahati (strong enough to withstand the weight of battle tanks and allows fighter aircraft to land and take off in emergencies) and a strategically-sensitive road tunnel at Sela, close to the Chinese frontier in Arunachal Pradesh, a mountainous Indian state, claimed by Beijing.
- Inauguration of India's longest bridge, the 9.15 km Bhupen Hazarika road link over the Lohit river.
- An airport has been commissioned at Pasighat, barely two hours away from Dibrugarh. One of the most pristine parts of Arunachal Pradesh has now become

accessible to the rest of the world. This could give a fillip to tourism, given that the region has abundant wildlife and is ideal for river rafting and angling.

- he doubling of Indian Railways' line from New Bongaigaon-Guwahati via Rangiya in Assam is likely to get approved soon.
- Other infrastructure projects include efforts to turn Guwahati's Pakyong airport into an aviation hub, with foreign carriers offered subsidies to use it.
- Infrastructure construction is a key element in New Delhi's "Act-East Policy," through which India is reaching out to the states of the Association of South East Asian Nations and beyond. India is bolstering its presence in the region and countering China's huge Belt and Road infrastructure initiative with its own more modest but still ambitious plans, that include reaching out to South East Asia overland via Myanmar.

To reduce pollution*:*

- Promotion of alternative fuels like ethanol, methanol, biofuels and electricity
- The concept of 'waste to wealth' is being employed for generating alternative fuels.
- Ministries concerned are working to promote generation of alternative fuels from agricultural and other waste, and also on a road map for the development of electric vehicles.
- Priority is being given to the greening of roads and FASTag-based electronic toll collection, which will prevent congestion at toll plazas and bring down pollution.

To create employment opportunities:

- The youth are being trained to take advantage of the emerging job opportunities. In the roads sector, training is being given in construction-related trades.
- While under Sagarmala, training is being provided in job opportunities that can come up in the maritime sector, in the factories that are slated to be built in port areas, the service industry, fisheries, tourism and many more.
- Already, the total number of seafarers employed in Indian and foreign ships has grown by 35% this year.

To manage water resources & clean Ganga: Implementation of over 260 projects in the area of sewerage infrastructure, industrial pollution control, solid waste management and riverfront management.

Where do India's water policies go wrong?

- In India's electoral democracy, there is **little space for environmental policy**. Pollution has rarely been an electoral issue. Employment, economic growth, and poverty alleviation are more urgent.
- Elected leaders have few incentives to take on either the big polluters (which include the government's own companies and power stations) or the small-scale firms in industrial clusters that serve as vote-banks.

- High levels of regulation have created an elaborate **system of rent-seeking**.
  There are efforts to build sewage treatment plants (STPs), even though vast segments of the population along the Ganga does not yet have access to sanitation.

- The way India's environmental programmes are designed and implemented.
  The system is currently extraordinarily **top-heavy**.
  In 2014 "Ganga Manthan" was held where stakeholders from all levels of society were invited to submit suggestions on how the Ganga could be restored. In the subsequent years, however, there has been little follow-up.
  There is almost no mention of civil society or citizen participation, particularly for monitoring and sustainability of the operations.

Way ahead:

- Real solutions require **shared responsibility between the state and the people**.
  We need to prioritise citizen engagement.

- To encourage above we need more **publicly available data**, and more local analysis of this data.
  There is also a need for more **education and awareness** on the health effects of pollution, as well as the causes of pollution.

- Efforts need to me made catch agricultural and industrial waste before they run into the river.

- The government should take a **comprehensive look** at the interconnection between policies such as subsidies, electricity consumption, power use patterns, industrial development, and urbanisation plans.

Conclusion: A comprehensive policy for cleaning Ganga requires creativity, innovation, discipline, transparency and strong leadership. The cleanup of the Thames in London and the Rhine flowing through Europe suggest this is possible.

To prevent the colossal loss of lives in road accidents: India has one of the worst road safety records in the world, with around 1,37,423 road traffic fatalities in 2013. This makes up about 10 per cent of road crash fatalities worldwide. In absolute numbers, more people die in road crashes in India than anywhere else in the world.

- India needs a two-pronged approach to road safety, with an equal emphasis on reducing the risk of fatality per kilometre travelled and reducing the number of vehicle kilometres travelled.
- Improving the behaviour of all road users: lane driving, keeping to speed limits, using and respecting pedestrian crossings etc. It also means improving road geometry — identifying accident-prone spots and re-engineering them. And finally, it means ensuring that the vehicles manufactured are safer.
- Reducing the number of vehicle kilometres travelled means increasing safe access to presently vulnerable road users — bicyclists and pedestrians. Planners should make access to urban streets safer through better design and adequate space for pedestrians and other non-motorised transport users. It also means encouraging alternate, preferably non-motorised, forms of transport, such as cycle rickshaws, for

shorter or local commutes. The use of mass-transit systems such as buses and trains to assist long-distance commutes is strongly recommended.

- Simple improvements, like bright lights at junctions, speed cameras, a police presence and making helmets compulsory can work wonders. Seat belts worn even at the rear, which is seldom done here, can lower the risk of death to occupants by upto three-quarters.

"*As is often repeated within the transport sector, a rich nation is not one in which the poor have cars but one in which the rich use public transport*."

Bharatmala Pariyojana & Sagarmala

The Bharatmala Pariyojana is unique and unprecedented in terms of its size and design, as is the idea of developing ports as engines of growth under Sagarmala. The development of 111 waterways for transport, with multinational companies already carrying their cargo over the Ganga, is also a first ever.

They will improve both penetration and efficiency of transport movement on land and water, respectively. In the process, they will help connect places of production with markets more efficiently, help reduce logistics costs, create jobs and promote regionally balanced socioeconomic growth in the country.

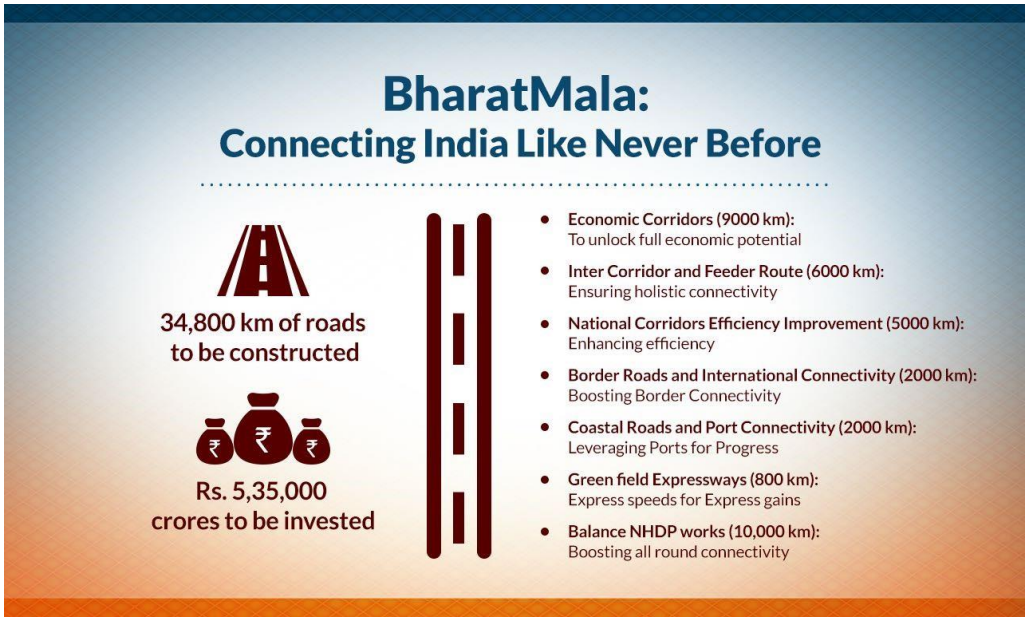
Sagaramala – Towards Blue Revolution

The prime objective of the Sagarmala project is to promote port-led direct and indirect development and to provide infrastructure to transport goods to and from ports quickly, efficiently and cost-effectively.

Therefore, the Sagarmala Project shall, inter alia, aim to develop access to new development regions with intermodal solutions and promotion of the optimum modal split, enhanced connectivity with main economic centres and beyond through expansion of rail, inland water, coastal and road services.

The Sagarmala initiative will address challenges by focusing on three pillars of development, namely

- Supporting and enabling Port-led Development through appropriate policy and institutional interventions and providing for an institutional framework for ensuring inter-agency and ministries/departments/states' collaboration for integrated development
- Port Infrastructure Enhancement, including modernization and setting up of new ports
- Efficient Evacuation to and from hinterland.



Inland Water Transport

India has nearly 14,500 km of navigable waterways, yet inland water transport (IWT) accounts for less than 1 per cent of its freight traffic, compared with ~35 per cent in Bangladesh and ~20 per cent in Germany. This is despite IWT's better cost arithmetic and materially less polluting nature. The cost of transporting one tonne freight over 1 km by waterway is Rs. 1.19 compared with Rs. 2.28 and Rs. 1.41 by road and rail, respectively. And the cost of developing an inland waterway is barely 10 per cent of a four-lane highway of similar capacity.

Recent moves by the government:

- The government has passed an amendment to the Central Road Fund Act, 2000, proposing to allocate 2.5 per cent of the funds collected for development of waterways.
- The budget for next fiscal has allocated Rs. 228 crore to the sector and allowed the Inland Waterways Authority of India (IWAI) to raise Rs. 1,000 crore from the capital market.

The advantages of raising the share of waterways in the transport mix are obvious –

- A World Bank study points out that a litre of fuel can move 105 tonne-km by inland water transport, against 85 tonne-km by rail and 24 tonne-km by road.
- Likewise, the carbon emission per tonne km is 32-36 gms in the case of container vessels, against 51-91 gms in the case of road transport vehicles.
- Reduced congestion on roads and fewer accidents are an added advantage.

Challenge: The sector's investment requirements are ~ Rs. 90,000 crore over the next few years to develop navigable routes, connectivity infrastructure to and from hinterland, terminals, vessels and repairing facilities.

Way ahead: Public private partnership is the need of the hour. Given IWT's nascence, the government and IWAI need to work on two channels to draw private players in-

A. **Development of physical infrastructure** The government should focus on developing navigation, channel operation and maintenance, and external connectivity infrastructure. Private players can undertake terminal development, cargo and passenger handling, and building low-draft vessels and related repair facilities.
B. **Policy level interventions:** Incentivizing cargo transport through inland waterways is required to ensure there is enough freight to make physical infrastructure development viable, the following measures can be taken:
    - Offering incentives, including tax subsidies, for transporting a portion of industry cargo through IWT.
    - The Government can mandate/incentivise industries in the proximity of national waterways to use this mode for a portion of their shipments. Public sector entities such as Food Corporation of India, power plants and refineries can be similarly mandated.
    - Higher road taxes can be levied on transportation of coal and inflammable material over longer distances because they are harmful to environment or pose a danger to those in proximity.
    - Many waterways run parallel to transportation corridors and urban centres. For synergy, the government can promote industrial corridors along riverbanks and foster waterways-based industrialisation.
    - Capital dredging, along with different waterways, will also offer opportunities to reclaim land along riverbanks.
    - In many States, there are ferry services on national waterways, but these are mostly unorganised country boats. Terminal facilities are also woefully inadequate. Along with passenger terminal development, the government needs to offer financial support to ferry operators to improve safety and facilitate insurance coverage.
    - The Centre and States need to join hands to package and market river tourism in a big way to trigger a virtuous cycle.
C. **Resolving the protocol route issue with Bangladesh:** This is critical to the sector's development. Indo-Bangladesh joint dredging projects in on river Yamuna and on river Kushiyara in Bangladesh have been long delayed. Completion of these projects will enable movement of larger vessels from Varanasi in Uttar Pradesh to Sadiya in Assam through Bangladesh and crank up waterways' cargo traffic.

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Inland Waterways Authority of India

The Inland Waterways Authority of India (IWAI) came into existence on 27th October 1986 for development and regulation of inland waterways for shipping and navigation. The Authority primarily undertakes projects for development and maintenance of IWT infrastructure on national waterways through grant received from Ministry of Shipping.

India has about 14,500 km of navigable waterways which comprise of rivers, canals, backwaters, creeks, etc. About 55 million tonnes of cargo is being moved annually by Inland Water Transport (IWT), a fuel – efficient and environment -friendly mode.

Its operations are currently restricted to a few stretches in the Ganga-Bhagirathi-Hooghly rivers, the Brahmaputra, the Barak river, the rivers in Goa, the backwaters in Kerala, inland waters in Mumbai and the deltaic regions of the Godavari – Krishna rivers. Besides these organized operations by mechanized vessels, country boats of various capacities also operate in various rivers and canals and substantial quantum of cargo and passengers are transported in this unorganized sector as well.

How to reinvent public transport?

From a transportation perspective, India has about 18% of the world's population and only 2.5% of its land area, but accommodates a fleet of 210 million motor vehicles as of now. This adds to the stress.

Connected, well-networked public transport is an ideal alternative. However, Indian cities have traditionally viewed it as and designed it for people who cannot afford private vehicles. As a result, the quality of mass transit is often poor and any effort to upgrade is limited by the concerns of affordability. A shift can happen only if public transport offers the conveniences that personal vehicles allow—namely, on-demand availability, door-to-door connectivity, safety and comfort.

- Innovative, multi-modal integration is vital to drive a change. Different modes, when appropriately combined, could offer inclusive, comfortable and frequent door-to-door services to commuters.
- Cities need to increase the number of public transport vehicles significantly to ensure safe, comfortable, frequent and crowd-free commutes to all.
- It is time for the government to widen the definition of public transport to include small buses, vans and pooled vehicles that offer on-demand services.
- Lead transport authorities could be set up to coordinate planning and financing of public transport modes in an integrated manner. They should have legal backing and the financial muscle to ensure that their plans are adhered to.

Must Read: **Facilitating trade in Indian ports**

Connecting the Dots:

1. Public spending must meet the need of all citizens, not a few, while protecting the environment for our future generations. Discuss.
2. Billed as a promise of better things to come in the future, the Bogibeel bridge is as much a painful reminder of the past, and of how long such schemes can take in India, especially in the remote north east. Elaborate the statement in terms of India's infrastructural foray into the north-east region of India.
3. The "Act-East Policy" needs detailed plans, consistent financing and, above all, sustained political commitment. Do you agree? Discuss.
4. Examine the significance of the Sagarmala Programme for India's external and internal trade.
5. Waterways has been the most neglected mode for inland transportation in India. Examine. Discuss the challenges associated with waterways in India. How can their potential be tapped?

URBAN TRANSFORMATION

Indian cities will make up most of the fastest-growing cities in the world between 2019 and 2035, considering the year-on-year Gross Domestic Product growth.

According to a Bloomberg report–

- Over 17 of the 20 top cities on the list will be Indian.
- Indian cities including Bengaluru, Hyderabad, and Chennai will be among the strongest performers across the globe.
- India will dominate the top 10 cities in terms of economic growth over the span of 20 years.
- Surat, a commercial centre for textiles in Gujarat, will witness the fastest GDP growth by an average exceeding 9%.
- While economic output in many of those Indian cities will remain rather small in comparison to the world's biggest metropolises, aggregated gross domestic product of all Asian cities will exceed that of all North American and European urban centres combined in 2027.
- By 2035, it will be 17 percent higher, with the largest contribution coming from Chinese cities. Little will change at the top of the list of the world's biggest cities between now and 2035.

What is Urbanisation?

The Census of India, 2011 defines urban settlement as, all the places which have municipality, corporation and cantonment board or notified town area committee. Additionally, all the other places which satisfy following criteria:

- A minimum population of 5000 persons;
- At least 75 % of male main working population engaged in non-agricultural pursuits; and
- A density of population of at least 400 persons per square kilometre

Urbanisation: A transformative force

By 2030, 600 million Indians, or 40 per cent of the country's population, would be residing in urban areas. If this urbanisation is to happen in a planned manner, we will need to build 700 to 900 million square meters of properly designed residential and commercial space in urban areas every year from now to 2030. It is imperative that the country moves from being a "reluctant urbaniser" to one that embraces urbanisation as a transformative force that can deliver an improved quality of life for all its citizens.

Key facts:

- Over 34% of India's current population lives in urban areas, rising by 3% since 2011.

- Population of fringe urban areas (smaller clusters with 10-50 lakh population) have increased significantly compared to existing large urban agglomerations (those with a population above 50 lakh) since 2005.
- India's urban population could increase to 814 million by 2050.

India is witnessing some strange trends:

- Villagers across the nation are protesting against their inclusion in the nearby city's urban area by the local urban development authority. (The fruits of urban development are seemingly rejected).
- Pollution in India's urban areas seems to have sparked off a reverse migration.
- For example, farmers from Haryana who had migrated to Delhi and Gurugram for work to escape an agricultural crisis are increasingly going back to their farms during winter, unable to take the toxic pollution.

The annually recurring instances of **floods in Mumbai**, **dengue in Delhi** and **lakes on fire in Bengaluru** paint a grim picture.

While work continues, admittedly slowly, on the Delhi-Mumbai Industrial Corridor project and the bullet train, **urban India's challenges remain manifold**.

Status of Urban Cities in India:

- Urban cities look and feel downtrodden, driven with poverty and poor infrastructure.
- Poor urban planning.
- With an increase in urban population will come rising demands for basic services such as clean water, public transportation, sewage treatment and housing.
- Over 90 'Smart Cities' have identified 2,864 projects which India lags on implementation.
- Only about 148 projects are completed and over 70% still at various stages of preparation.
- There is still an outstanding shortage of over 10 million affordable houses (despite the government taking encouraging steps to incentivise their construction).

Big Concerns:

1. **Flawed definition**

- One primary problem is that of the definition of what's urban.
- Urban development comes under State governments and the Governor notifies an area as urban (based on parameters such as population, density, revenue generated for the local administration and percentage employed in non-agricultural activities).
- This notification leads to the creation of an urban local government or municipality, classifying the area as a "statutory town".

With such a vague definition, discretionary decisions yield a wide variance in what is considered a town.

The Central government considers a settlement as urban if –

- it has a urban local government,
- a minimum population of 5,000;
- over 75% of its (male) population working in non-agricultural activities; and
- a population density of at least 400 per sq. km.

However, many States consider such "census towns" as rural, and establish governance through a rural local government or panchayat.

2. **Poor infrastructure and investment**

- Another issue is the low level of urban infrastructure investment and capacity building.
- India spends about $17 per capita annually on urban infrastructure projects, against a global benchmark of $100 and China's $116.
- Governments have come and gone, announcing a variety of schemes, the Jawaharlal Nehru National Urban Renewal Mission included, but implementation has been mostly inadequate, with exploration of financing options limited as well.
- For example, Jaipur and Bengaluru collect only 5-20% of their potential property tax.
- Urban institutions also suffer from a shortage of skilled people.

3. **No effective policies to deal with Urban Migration**

- Finally, there needs to be a systemic policy to deal with urban migration.
- Internal migration in India is very closely linked to urban transitions, with such migration helping reduce poverty or prevent households from slipping into it.
- Urban migration is not viewed positively in India, with **policies often bluntly seeking to reduce rural to urban migration**.
- It would be better to have policies and programmes to **facilitate the integration of migrants** into the local urban fabric, and building city plans with a regular migration forecast assumed.
- Lowering the cost of migration, along with eliminating discrimination against migrants, while protecting their rights will help raise development across the board.

For examples, consider Delhi. While historically, urban policy sought to limit urban migration, this is now changing with a focus on revitalising cities nearby such as Meerut, building transport links and connectivity.

A. Poor and unplanned transition

- Our urban policymakers also need to be cognisant of the historical context of our urban development. Our cities have been witness to multiple transitions over the

last century (especially during colonial era), with barely any time to recover and adapt.

- Transforming them into neatly organised urban spaces will not be easy.

Sustainable Urban Planning

In last two years, the central government has launched new urban missions and that has marked paradigm shift to country's approach to urban development. This is promotion and development for human settlement as inclusive and sustainable entities.

There has been promotion of cycling for last mile connectivity, compact and cluster urban development in promoting natural drainage patterns, reducing wastage generation of all kinds, promoting greenery in public places etc. These are new things which few cities like Chandigarh promote. Earlier, these things were not incorporated in the planning of cities but now it is certainly a sign of changing of towns. In Mumbai, there is reconstruction and redevelopment of the buildings. These initiatives are required which don't create new cities but give more options on how to rebuild the old cities.

Thus, the outcomes of new urban agenda based on sustainable urban planning would include reducing water and electricity use by 50% from that of normal use, enabling over 60% of urban travel by public transport, generating half of power from renewable sources, promoting walking and cycling for last mile connectivity, compact and cluster urban development, promoting natural drainage patterns, reducing waste generation of all kind, promoting greenery and public places etc.

Missions at the forefront of the urban transformation

Swachh Bharat Abhiyan or Clean India Mission, the objective of which is 100 per cent open-defecation-free India and 100 per cent solid waste management; to be achieved through a multi-level, multi-stakeholder model, where the Union government works in close partnership with state governments as well as civil society and the private sector. While a key objective of the Mission is to build adequate sanitation infrastructure, at its core it is about a behavioural change in the mindset of the average Indian.

The PM Awas Yojana (PMAY) or Housing for All attempts to fulfill a dream common to all Indian citizens: Owning a house of their own. Significantly, the ownership title will be solely or jointly in the name of the woman of the house, a step that has already provided a great fillip to gender empowerment. Two key factors prevented Indians from this basic need: Callous urban management led to the creation of slums that were at the mercy of vote-bank politics; and a corrupt builder-politician nexus cheated home-buyers of their money.

Those who move to urban centres in search of livelihoods, access to services and a better quality of life, often end up in poorly constructed slum dwellings due to lack of funds and distorted real estate prices. Under the PMAY, the government is committed to building affordable homes for this entire section of society, allowing them to live a life of dignity. By categorising housing as "infrastructure", lowering rates under GST and providing credit-linked subsidies, the government has mobilised the real estate industry to supply housing for low-income and economically weaker sections. The process of in-situ development of

slums allows the residents to retain their links with jobs, schools and medical facilities and protects them from the displacement caused by eviction.

The Smart Cities Mission brings a fundamentally different outlook to urban planning, management and finance. Over the past 70 years, the absence of citizen participation coupled with the absence of vision and the lack of spatial, physical and economic planning, was largely responsible for the confounding mess that has defined Indian cities. The Smart Cities Mission looks to address the trust deficit between citizens and their municipal bodies, by ensuring proper delivery of infrastructure and services. It is participatory in nature and citizens define the choices and decisions made by the city. The Mission establishes an integrated approach where all departments of a city's administration work together to offer holistic solutions by using information and communication technology, by bundling projects that can be executed together in the same area and making best use of the funds available from different sources, public and private.

For the **AMRUT scheme**, which aims to provide urban infrastructure for universal coverage of piped drinking water, sewerage, and green spaces, the Centre has allocated Rs 50,000 crore over a five-year period from 2015-16 to 2019-20. Reforms proposed include development of e-governance at the urban local body (ULB) level, constitution and professionalization of municipal cadres, urban and city-level planning, review of building by-laws, municipal tax and fee improvements, collection of user charges, credit ratings of ULBs, and audits for utility services such as electricity and water.

India's cities need to address five systemic challenges in order to deliver better quality of life to citizens in a sustainable manner –

1. Lack of viable spatial planning and design standards for public utilities – India has 1 urban planner per 400,000 people compared to UK's 148 for the same
2. Weak finances, both in terms of financial sustainability and accountability – more than half of the municipalities do not generate enough money to pay their salaries, 70% of the cities' budget vary by 30%
3. Poor human resource management – 35% average staff vacancy
4. Powerless mayors and city councils, severe fragmentation of governance – multiple civic bodies, parastatals – multiple civic bodies with frequent change of toothless mayors, commissioners. Local government has the least amount of capability, quality of delivery and poor processes that are being followed. Most of the laws and policies that they are following are archaic.
5. Total absence of systematic citizen participation and transparency – Only two cities have ward committees

The Way Ahead

Cities and their Foundation: There is a need to focus on building stronger foundations – not just focus on outcomes but also policies. Policies are very important and nobody talks about it. There is an urgent need of giving the highest importance to 'urban designing' and not just planning. Cities need to be seen as a unit of empowerment at the systems level.

Cities and Reforms: Reforms in the big cities have been painfully slow also due to political instability. Smaller cities under AMRUT are witnessing better transparency, accountability and participation. Finances need to not just be generated but also be managed and accounted for.

City people and City government: Government needs to meaningfully engage with the citizens. They need to update the citizens and push the envelope on the issue of discussions being done at the systemic level.

City and local body of governance: There is a need to strengthen local body's capability and capacity to deliver. A discussion on autonomy and devolution of power is long pending. Mayors need to be empowered with decision, and be trusted for the same**.**

Absence of participatory citizen platforms: Citizens need to be involved and sensitized. More awareness programs in public places, schools and colleges need to be conducted.

India cannot achieve double-digit growth and cannot become the world's third-largest economy worth an estimated $10 trillion by 2030, if it's long overdue urbanisation is further delayed. Indian cities must become safe, resilient and sustainable hubs of vibrant economic activity, enabled and regulated by appropriate planning and governance. The measure of our success will be the achievement of the sustainable development goals by 2030 and the delivery of a New India, where every citizen enjoys the "Ease of Living" that they truly deserve after 70 years of Independence.

Affordable Housing

When it comes to 'affordable housing' there has been no significant departure from the huge demand-supply gap existing in the country. India holds a huge demand for housing, which has kept on increasing substantially with the demand-supply gap and the lackadaisical implementation of the policies. While there exists an oversupply of housing for the higher-income/middle-income group, the low-income group unable to afford the high-priced houses, take their course to illegal 'shelter'.

Some of the measures that can help India create 'Housing-for-all' are

- **Supply:** Modern construction techniques can help us deal with speedy constructions with many companies selling these techniques to help increase the construction of houses.
- **Availability of Land:** Land should be available at a reasonable price which can be done by employing sustainable models of land sharing and upgradation of land. Also, there is a need to effectively utilize the land and create new laws related to it.
- **Finance:** Housing loans can be extended to the low-income/middle class groups easily with proper financial education, to make 'owning-a-house' a reality for them.
- **Infrastructure:** There is a need of overhaul of services related to the provision of basic amenities to the houses. Proper transportation facilities, good connectivity with the city, waste management, safe drinking water and security is important.

Housing, as an economic sector has both forward as well as backward linkages leading to a generation of a huge amount of job-creation for the time being, for the rural unemployed, skilled or semi-skilled. Thus, housing needs to be given a high impetus, both as a strategy for development and to achieve scale economies in production, savings and a new growth story.

Schemes

Pradhan Mantri Awas Yojana- Urban (PMAY-U)

The Pradhan Mantri Awas Yojana- Urban (PMAY-U) launched in mission mode envisions provision for Housing for All by 2022. The mission seeks to address the housing requirement of urban poor including slum dwellers through program verticals:

- Slum rehabilitation of Slum Dwellers with participation of private developers using land as a resource
- Promotion of Affordable Housing for weaker section through credit linked subsidy
- Affordable Housing in Partnership with Public & Private sector
- Subsidy for beneficiary-led individual house construction/enhancement

Pradhan Mantri Awas Yojana- Gramin (PMAY-G)

The Pradhan Mantri Awas Yojana- Gramin (PMAY-G) has been devised in line with Government's commitment to provide 'Housing for All' by 2022 in the rural areas. The scheme aims at providing a pucca house with basic amenities to all houseless householder living in kutcha and dilapidated houses by 2022.

What was the name of the pact opposed by Dr. Shyama Prasad Mukerjee, on whose name a scheme (Rurban mission) has been introduced by the 2014 Budget?

1. Delhi Pact

2. Lucknow Pact

3. Sarat Suharawady pact

4. Surat Pact

Ans: Sarat Suharawady pact

Public safety and security

'Safety' of a city takes into account the financial and cyber-crimes as well as data issues and theft of community resources as well as the loss that a city incurs during a disaster. A smart city needs to be responsive to changes as well as resilient to minimize the impact of natural disasters.

Tele-Surveillance/Connectivity:

- Round-the-clock availability of data
- Reliance during Emergencies: Directions + Instructions + Surveillance
- Rich source of intelligent inputs + Automated Database Filler
- Online disaster rescue communities be built and made aware Quick Action

Data Integrity + Generation:

- Encrypted Solutions in the device: Authentic Communication with required Call
- Centre
- Digital Certificates: Authentication + Signing + Encryption
- Algorithms: To maintain anonymity
- [redacted]
- Enable tracing of excess of capacity to automatically alert

Collaborative Response Efforts:

- Automatic Updates: Effective Action + Saves Time & Energy
- Ensure Cooperated collective Action: Effective Surveillance
- Can be linked to traffic signals: Medical Emergency

Disaster Resistant Hubs:

- Creation of Resilient & Sustainable Communities
- Provision of alternate energy + shelter
- Modular Housing as relief camps
- Basic Facilities: Kitchen + Bathrooms + Sleeping spaces

There is a need for sustainable linkages to be established with the help of technology, knowledge and information. There is a need for smarter constructions resistant to natural disasters, new energy efficient means to reduce the stress that has developed on our natural resources. This change in focus against the Smart City initiative implementation will truly magnify the potential of development.

Building Climate-Smart Cities

According to UN-Habitat's estimates, over 64 per cent of the world population is expected to reside in cities by 2050. Cities consume enormous resources. The Intergovernmental Panel on Climate Change estimates that urban infrastructure accounts for two-third of the global energy use and 70 per cent of energy related Green House Gas (GHG) emissions. By

2025 megacities of 10 million or more people will house more than half the world's population and contribute more than half of global GDP.

Indian context:

As India's urban population grows from 410 million in 2014 to 814 million in 2050, with about 7 cities having more than 10 million people, there will be rise in energy consumption, degradation of forest areas and agricultural land and disturbed ecosystems, problems of water supply and solid waste management. This will be accentuated by growing risks of climate vulnerability (frequent floods, cyclones, extreme temperature and heat waves) disrupting city lives and affecting the poor who typically lack adequate resources and safeguards to fight such stresses.

Climate-smart transformation:

It needs set of city-specific strategies to systematically reduce city's carbon footprint and enhance resilience to climate change through smart, affordable and, resilient infrastructure, and mixed form of adaptable land-use. Each city should have a clearly defined 'low carbon pathway', a series of interventions like

- Integrated solid waste management (ISWM).
- Energy efficient energy/ water supply.
- Harnessing rooftop solar and battery storage.
- Green urban mobility (including electric mobility, public and, non-motorised transport).
- Green and affordable building infrastructure.
- Smart grids.

Financing climate-smart cities:

Needs innovative solutions. The ability of cities to finance urban infrastructure largely depends on their budgets, revenue sources and creditworthiness.

Issue:

The perceived lack of creditworthiness (among 500 largest emerging market cities, only 4 per cent are creditworthy) for most cities in India becomes a critical barrier to secure affordable financing on international market or issue bonds to fund climate projects.

Way out:

- Credit enhancement facilities such as, Guarantee Fund can help cities to overcome such barrier and raise funds by issuing bonds, etc.
- An effective way to catalyse private investment in urban projects is to mobilise credits through local financial institutions (LFIs). These are better positioned to assess and manage the risks inherent to the local authorities and, mobilise medium and, long-term financing in local currencies, thus eliminating the forex risk.

- To attract investments, cities should develop a pipeline of 'bankable' projects that meet broad feasibility parameters. Project preparation is expensive, typically accounts for 5-10 per cent of the project cost, and, most cities lack capacity for conducting feasibility, design and, financial structuring of the projects. Development partners and multilateral banks, equipped with global best-practices, can step in to support cities in setting project selection criteria to favour climate-smart infrastructure, laying right indicators for monitoring sustainability, and building technical and financial capacity of city officials to mainstream climate goals in planning, designing, operations and maintenance of the city.

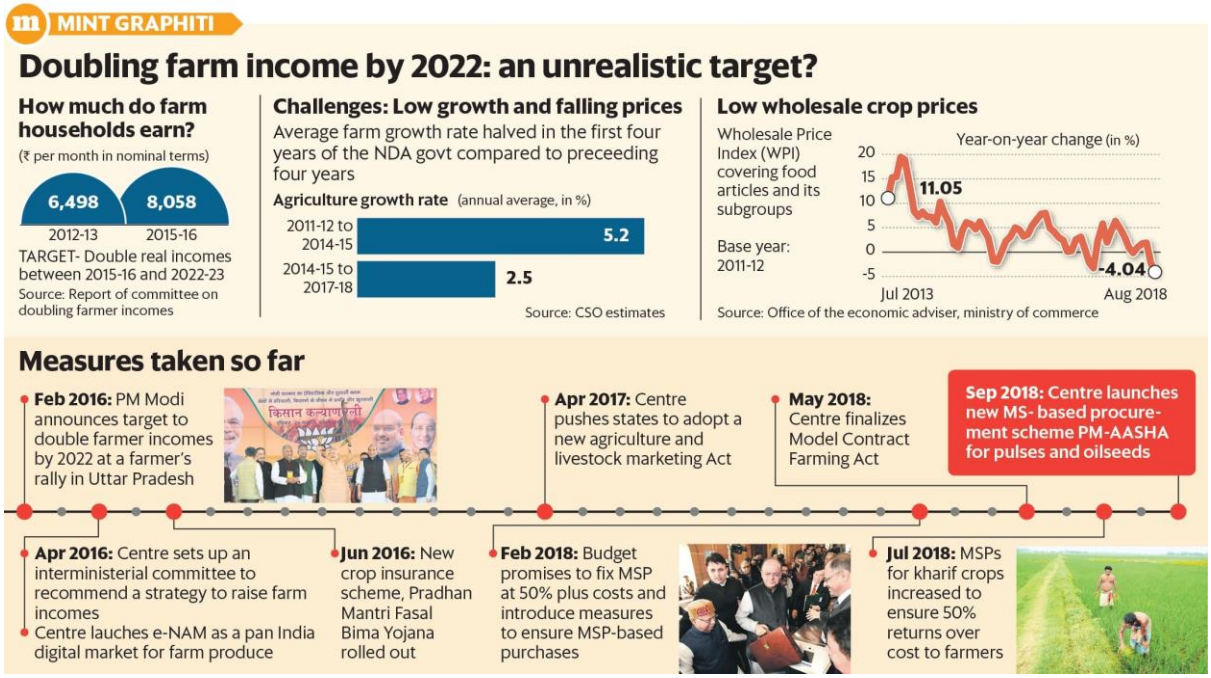
Connecting the Dots

1. Bring out the significance of sustainable urban planning for Indian cities. What have we missed out in its absence? Discuss.
2. Urbanisation in India is taking place at a much faster pace. All of it being done without paying heed to ecological principles. This is a cause of concern. Discuss why. Also, analyze what needs to be done so as to make our cities climate change proof.
3. What is 'Smart Cities' mission? What are its components and objectives? Will it resolve the problems associated with urbanization? Explain.
4. The story of Indian cities is nothing but growth without commensurate civic infrastructure. Do you agree? In this context, what role can the Smart City projects play? Analyse.

India & Agriculture

The strategy for doubling farmers' income encompasses higher productivity at cost efficiency and enabling the farmer to capture maximum value on every grain, every drop and every ounce of his produce.

The National Sample Survey Organisation (NSSO)—a government agency—conducts decadal study on farmers' income.



Strategy for Improving Farmers' Income

The sources of growth in output and income can be put in four categories.

1. Development initiatives including infrastructure
2. Technology
3. Policies and
4. Institutional mechanisms

Roadmap and Action Plan

The quantitative framework for doubling farmers income has identified seven sources of growth. These are:

1. Increase in productivity of crops
2. Increase in production of livestock
3. Improvement in efficiency of input use (cost saving)
4. Increase in crop intensity
5. Diversification towards high value crops

6. Improved price realization by farmers
7. Shift of cultivators to non-farm jobs

Ashok Dalwai committee on doubling farmers' incomes

According to Dalwai committee, solutions can be categorized into four broad areas:

1. **Land:**

- Land holdings in India are small and fragmented, 86% of them being smaller than 2 hectares.
- Holdings are too small for the use of modern implements.
- Farmers have to rely on informal sources of lending and are subject to the vagaries of the weather and volatile prices for their produce.
- Small farmers, who are already very poor, are forced to bear more risk than they would like.

Suggestions and recent actions:

- Encourage contract farming. Much of India's exports and supermarket supplies originate from Contract/Corporate Farming Ventures (CFVs).
- A CFV takes land on lease from a group of farmers and pays an agreed amount and a share of profits to them. Or it may supply inputs and expertise to farmers, supervise production and buy the products.
- The Union government has framed the model agricultural land lease law, 2016 and the draft model contract farming law, 2018 to mitigate these problems.

2. **Access to markets:**

- Agricultural produce market committees (APMCs) have perpetuated (cause to continue) monopolistic intermediaries.
- In other words, existing agricultural marketing – under the Agricultural Produce Market Committees (APMC) – has led to policy distortions and fragmentation, largely as a result of a huge number of intermediaries and poor infrastructure.
- The Ashok Dalwai committee highlighted that – because of the APMC acts, farmers are required to sell a large number of commodities in local mandis where different layers of intermediaries often manipulate the price, thus depriving them of their fair share.

Suggestions and recent actions:

- Union government has introduced a model agricultural produce and livestock marketing (APLM) law, 2017 that is intended to replace the existing APMC Act, and allow a single market within a state, freeing farmers to trade at private wholesale markets, allowing them to sell directly to bulk buyers, and promoting trading on the electronic national agriculture market (eNAM).

- Farmer centres would integrate with the electronic National Agriculture Markets (e-NAM) to help farmers sell direct to the consumer.

3. Increase in productivity

- As per the Agriculture Census 2010-11, 67.10% of India's total farmers are marginal farmers (below 1 h.a.) followed by small farmers (1-2 h.a.) at 17.91%.
- Since Indian agriculture is dominated by marginal farmers who have small holdings, raising productivity is likely the single most important factor if incomes of this group are to be doubled.
- Productivity of crops in India is low compared to global standards and there is large variation across states, primarily explained by access to irrigation facilities and adoption of improved technology.

Suggestions and recent actions:

- This requires public investment in irrigation, seeds, fertilizers and other technology. However, successive governments have preferred to give subsidies rather than invest in rural infrastructure.
- Niti Aayog has called for substantive investment in irrigation, seeds & fertilisers and new technology coupled with a shift into high-value commodities such as horticulture, poultry and dairying to double incomes.
- Massive investment is needed in irrigation if productivity of India's farms are to be increased.

4. Diversification towards high-yield crops and non-farm activities

- Finally, diversification is crucial if farmers' incomes have to increase.
- This is because the average productivity of high-value crops, like vegetables and fruits, is more than Rs1.4 lakh per hectare, compared to Rs40,000 for staple crops.

Suggestions and recent actions:

- Most of the above reforms are the domain of state governments which often protect the interests of large farmers. NITI Aayog has argued for bringing agriculture into the concurrent list so that the Union government can ensure a national market for agricultural products—that may not be a bad idea.

Parallely, the Government is aiming to reorient agriculture sector by focusing on income centeredness. In order to realise net positive returns for the farmer, schemes as follows, are being promoted and implemented in a major way through the States/UTs viz:- Soil Health Card (SHC) scheme; Neem Coated Urea (NCU); Pradhan Mantri Krishi Sinchayee Yojana (PMKSY); Paramparagat Krishi Vikas Yojana (PKVY); National Agriculture Market scheme (e-NAM); Pradhan Mantri Fasal Bima Yojana (PMFBY); National Food Security Mission (NFSM); Mission for Integrated Development of Horticulture (MIDH); National Mission on Oilseeds & Oilpalm (NMOOP); National Mission for Sustainable Agriculture (NMSA); National Mission on Agricultural Extension & Technology (NMAET) and Rashtriya Krishi Vikas Yojana (RKVY).

Helping the invisible hands of agriculture

October 15 is observed, respectively, as **International Day of Rural Women by the United Nations** and National Women's Farmer's Day **(Rashtriya Mahila Kisan Diwas)** in India. In 2016, the Ministry of Agriculture and Farmers' Welfare decided to take the lead in celebrating the event, duly **recognising the multidimensional role of women at every stage in agriculture** — from sowing to planting, drainage, irrigation, fertilizer, plant protection, harvesting, weeding, and storage.

Data and reality

- According to Oxfam India, **women** are responsible for **about 60-80% of food** and **90% of dairy production**, respectively.
- The **Agriculture Census (2010-11)** shows that out of an estimated 118.7 million **cultivators, 30.3% were females**.
- Similarly, out of an estimated 144.3 million **agricultural labourers, 42.6% were females**.
- In terms of **ownership of operational holdings**, according to Agriculture Census (2015-16), Out of a total 146 million operational holdings, the percentage **share of female holders is 13.87%** (20.25 million), a nearly one percentage increase over five years.
- **The work by women farmers, in crop cultivation, livestock management or at home, often goes unnoticed.**
- Attempts by the government to impart them training in poultry, apiculture and rural handicrafts is trivial given their large numbers.
- In order to sustain women's interest in farming and also their uplift, there must be a vision backed by an appropriate policy and doable action plans.
- While the "feminisation of agriculture" is taking place at a fast pace, the government has yet to gear up to address the challenges that women farmers and labourers face.

Concerns and their solutions:

Issue of land ownership

- **The biggest challenge is the powerlessness of women** in terms of claiming ownership of the land they have been cultivating.
- In Census 2015, **almost 86% of women farmers are devoid of this property right in land** perhaps on account of the **patriarchal** set up in our society.
- Notably, **a lack of ownership of land does not allow women farmers to approach banks for institutional loans** as banks usually consider **land as collateral**.
- Land holdings have doubled over the years with the result that the **average size of farms has shrunk.**

- Therefore, a majority of farmers fall under the small and marginal category, having less than 2 ha of land — a category that, undisputedly, includes women farmers.
- A declining size of land holdings may act as a deterrent due to lower net returns earned and technology adoption.

Solutions

- **Provision of credit without collateral** under the micro-finance initiative of the National Bank for Agriculture and Rural Development should be encouraged.
- **Better access to credit, technology, and provision of entrepreneurship abilities** will further boost women's confidence and help them **gain recognition as farmers.**
- Research worldwide shows that women with access to secure land, formal credit and access to market, have greater propensity in making investments in improving harvest, increasing productivity, and improving household food security and nutrition.
- As of now, women farmers have hardly any representation in society and are nowhere discernible in farmers' organisations or in occasional protests.
- They are the invisible workers without which the agricultural economy is hard to grow.
- The possibility of **collective farming** can be encouraged to make women self-reliant.
- **Training and skills** imparted to women as has been done by some **self-help groups and cooperative-based dairy activities** (Saras in Rajasthan and Amul in Gujarat). These can be explored further through farmer producer organisations.
- Moreover, **government flagship schemes** such as the National Food Security Mission, Sub-mission on Seed and Planting Material and the Rashtriya Krishi Vikas Yojana **must include women-centric strategies and dedicated expenditure.**

Gender-friendly machinery

- It is important to have gender-friendly tools and machinery for various farm operations. **Most farm machinery is difficult for women to operate.**
- Female cultivators and labourers generally perform labour-intensive tasks (hoeing, grass cutting, weeding, picking, cotton stick collection, looking after livestock).
- In addition to **working on the farm,** they have household and **familial responsibilities**.
- Despite more work (paid and unpaid) for longer hours when compared to male farmers, women farmers can neither make any claim on output nor ask for a higher wage rate.
- An increased work burden with lower compensation is a key factor responsible for their marginalisation.

Solutions

- **Manufacturers should be incentivised to come up with better solutions.**
- **Farm machinery banks and custom hiring centers promoted** by many State governments can be roped in to **provide subsidised rental services to women farmers**.

Access to resources

- When compared to men, **women generally have less access to resources and modern inputs (seeds, fertilizers, pesticides)** to make farming more productive.
- The Food and Agriculture Organisation says that equalising access to productive resources for female and male farmers could increase agricultural output in developing countries by as much as 2.5% to 4%.

Solution

- **Krishi Vigyan Kendras in every district can be assigned an additional task to educate and train women farmers about innovative technology along with extension services.**

Conclusion

- As more women are getting into farming, the foremost task for their sustenance is to assign property rights in land.
- Paying lip service to them is not going to alleviate their labour work and hardships in the fields.
- Once women farmers are listed as primary earners and owners of land assets, acceptance will ensue and their activities will expand to acquiring loans, deciding the crops to be grown using appropriate technology and machines, and disposing of produce to village traders or in wholesale markets, thus elevating their place as real and visible farmers.

Be Prelims Ready:

PM Krishi Sampada Yojana: To create world class food processing infrastructure. This will leverage investment of 5-billion-dollar investment, benefit 2 million farmers and create more than half a million jobs. It incorporates ongoing schemes such as Mega Food Parks, Integrated Cold Chain and Value Addition Infrastructure, etc. and also new schemes like Infrastructure for Agro-processing Clusters, Creation of Backward and Forward Linkages, Creation / Expansion of Food Processing & Preservation Capacities.

Mission for Integrated Development of Horticulture (MIDH): For the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo.

- Promote holistic growth of horticulture sector, including bamboo and coconut through area based regionally differentiated strategies, which includes research, technology promotion, extension, post-harvest management, processing and

marketing, in consonance with comparative advantage of each State/region and its diverse agro-climatic features;
- Encourage aggregation of farmers into farmer groups like FIGs/FPOs and FPCs to bring economy of scale and scope.
- Enhance horticulture production, augment farmers, income and strengthen nutritional security;
- Improve productivity by way of quality germplasm, planting material and water use efficiency through Micro Irrigation.
- Support skill development and create employment generation opportunities for rural youth in horticulture and post harvest management, especially in the cold chain sector

E-NAM

National Agriculture Market or eNAM is an online trading platform for agricultural commodities in India. The market facilitates farmers, traders and buyers with online trading in commodities. The market is helping in better price discovery and provide facilities for smooth marketing of their produce.

Pradhan Mantri Fasal Bima Yojana (PMFBY): Crop Insurance Scheme

- Pradhan Mantri Fasal Bima Yojana (PMFBY) was launched in April 2016
- Government scraped down the earlier insurance schemes viz. Modified National Agricultural Insurance Scheme (MNAIS), Weather-based Crop Insurance scheme and the National Agriculture Insurance Scheme (NAIS) and made PMFBY the only flagship scheme for agricultural insurance in India.
- The scheme was launched with the aim of bringing 50 per cent of the country's farmers under insurance cover in three years.
- **Objectives:**
    - To provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests & diseases.
    - To stabilise the income of farmers to ensure their continuance in farming.
    - To encourage farmers to adopt innovative and modern agricultural practices.
    - To ensure flow of credit to the agriculture sector.

Connecting the Dots:

1. Is it policy formulation or the implementation of policy which has made Indian farmers to remain as one of the most vulnerable economic sections?
2. The agricultural price policy objectives need revision so that apart from addressing the existing demand supply situation, it also takes into account a qualitative superior crop mix. Discuss.
3. Do you think the food processing industry has enough potential to create jobs for the burgeoning labour force in India? Critically comment.
4. Why do agri-exports from India performing well below potential? Examine. Also discuss the role of various technology missions that can make Indian agri-exports more competitive globally.

5. Discuss the role of remote sensing in agriculture. How can farmers take advantage of this technology? Discuss.
6. What are the challenges of supply chain management of food products in India? Analyse.
7. Innovations in the field of infotech and biotech hold the potential to transform the agricultural landscape. Comment.
8. Examine the challenges associated with agricultural marketing in India. What is e-NAM? Discuss its features. Can it address these challenges? Examine.

All the best

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