Summary of Kurukshetra

May 2022

Theme: Rural Connectivity

Contents

PMGSY – Changing Nature of India's Rural Roads

- Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched as a one-time special intervention to provide rural connectivity, by way of a single all- weather road, to the eligible unconnected habitations of designated population size (500+ in plain areas and 250+ in North-Eastern States, Himalayan States and Himalayan Union Territories as per 2001 census) in the core network for uplifting the socio-economic condition of the rural population.
- Relaxation has been provided to the Tribal (Schedule V) areas and Selected Tribal and Backward Districts (as identified by the Ministry of Home Affairs (MHA) and Planning Commission) and unconnected habitations in these areas with a population of 250 persons and above in the Core Network as per Census 2001 are eligible for connectivity under the scheme.
- In the critical Left Wing Extremism affected blocks (as identified by Ministry of Home Affairs), additional relaxation has been given to connect habitations with population 100 persons and above as per 2001 census.
- Phases of PMGSY
    - PMGSY-I : Pradhan Mantri Gram Sadak Yojana-I (PMGSY-I) was launched as a one-time special intervention to provide rural connectivity, by way of a single all-weather road, to the eligible unconnected habitations of designated population size as per Census 2001.
    - PMGSY-II: PMGSY- II was launched in the year 2013, with a target to upgrade 50,000 Kms of the existing rural road network to improve its overall efficiency as a provider of transportation services for people, goods and services. PMGSY-II was launched for upgradation of selected Through Routes and Major Rural Links (MRLs) with a target to upgrade 50,000 Km in various States and Union Territories.
    - RCPLWEA : In 2016, the Road Connectivity Project for Left Wing Extremism Affected Areas (RCPLWEA) for construction/upgradation of strategically important roads was launched as a separate vertical under PMGSY.
    - PMGSY-III : In the year 2019, Government launched PMGSY-III for consolidation of 1,25,000 Km Through Routes and Major Rural Links connecting habitations, and inter-alia, to Gramin Agricultural Markets (GrAMs), Higher Secondary Schools and Hospitals.

Use of Green Technology

- Some of the techniques and technologies used under PMGSY are:
    - Use of cell filled concrete to ensure flexible concrete and crack-free surface.
    - Use of paneled cement concrete to guarantee durability
    - Use of roller compacted concrete pavement to enable simple, fast and economical construction with longer service life.
    - Use of cement stabilization to improve soil strength, stability and to reduce, maintenance cost.
    - Use of Terrazyme to reduce the construction costs while increasing the overall quality of road structures.
    - Cold mix technology uses cold mix binders
    - Use of Green Technology and non conventional materials like waste plastic, cold mix, geo-textiles, fly-ash, iron copper slag, etc. in rural roads to ensure reuse of wastes.

Issues and Challenges

- Issues of land acquisition.
- Forest clearance.
- Poor contracting capacity of states.
- Lack of response to tenders.
- Law and order issues.
- Financial capability of states to release funds.
- Execution capacity of states/ SRRDAs
- For North-Eastern and hill states, some additional issues like adverse climatic conditions, tough terrain, short working season etc. also came in the way which compounded the challenges.

Conclusion

- India's mission of a vibrant Aatma Nirbhar Bharat can be realized through a reinforced rural infrastructure.

- Better rural infrastructure – bbe it surface, air or water transports, telecom, rural marketing, warehouses, or water supply and power is capable of facilitating better avenues for rural growth and of appropriately remunerating the activities of the farmers, manufacturers and service providers in a rural setup.

Connecting Rural Health Services

Introduction:

- The rural healthcare system serves two-thirds of the country's population.
- It truly characterizes the country's nervous system with a network of government owned and operated Sub-Centers, Primary Health Centers and Community Health Centers designed to deliver primary healthcare to the rural population.

Rural healthcare system:

- The rural healthcare system is structured in three tiers.
- It consists of Sub-centres, Primary Health Centres (PHCs) and Community Health Centres (CHCs) designed to deliver primary healthcare to the rural population.
- The National Rural Health Mission was launched in 2005 to provide healthcare services to the rural population
- The mission envisaged architectural correction of the health system by building accountability to the community, management of human resources, financing, etc.

Concerns:

- Vast resource gap which hinders the rural population from accessing quality healthcare.
- In terms of manpower, it was found that a large proportion of posts are vacant across all tiers of the health system.

Strengthening Rural Health Services

- Experiences and evidences from different states in India and across the world can be leveraged to guide improvements in healthcare in rural India.

- Connecting communities to health services through e-health services. The adoption of telemedicine provides an important opportunity to extend health services coverage to various parts of the country and connect citizens with quality as well as timely medical advice from doctors and specialists.
- Embedding comprehensive healthcare management in nursing and medical education to efficiently serve rural communities. Also creating cadres of health professionals from the rural areas themselves who can be trained to deliver essential and basic health services is of the essence to ensure sufficient human resources in rural areas.
- Providing accommodation and a supporting ecosystem for medical doctors and their families can act as an incentive to draw health professionals into rural areas.
- Focusing on social determinants of health will also be critical for having an impact on the health of the rural population.

Conclusion

- Thus, while examples of efforts in connecting rural health services are ample across the nation, they are fragmented with regional successes.
- The National Rural Health Mission through its nationwide purview ad with its financial and human resource can identify adopt and scale such innovative solutions to address the equity gaps in rural areas.

BharatNet: Bringing Broadband to Rural India

- According to the Network Readiness Index-2021, India has jumped to 67th rank in 2021 from 88 in 2020.
- Rural tele-density was 59% in December 2021. There are 104.75 urban internet subscribers for every 100 people in India, according to the Telecom Regulatory Authority of India (TRAI).
- Still, only 37.67 rural internet subscribers for every100 people are found in the country.

Mobile and Internet Services in Rural India

- The GoI through various schemes approved under Universal Service Obligation Fund (USOF), is providing mobile and internet services in rural areas and areas affected by Left Wing Extremism (LWE)

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- As per Ministry of Home Affairs (MHA), 90 districts falling under 11 States are affected by LWE and covered under the scheme.
- Scheme for mobile connectivity in 354 villages of uncovered border areas including Ladakh and Kargil Region,Himachal Pradesh, Uttarakhand, and other priority areas.
- Comprehensive Telecom Development Plan (CTDP) for mobile connectivity in the North-East Region (NER) consisting of following components, installation of mobile towers to provide mobile coverage in uncovered villages and the National Highways (NHs):
    - CTDP for NER States of Assam (except districts of Karbi Anglong and Dima Hasao), Manipur, Mizoram, Nagaland, Sikkim, and Tripura and the NHs.
    - Scheme for uncovered villages and along NHs in Meghalaya.
    - Scheme for uncovered villages of Arunachal Pradesh and 2 Districts of Assam, i.e. Karbi Anglong and DimaHasao.
- Scheme for 4G mobile connectivity in uncovered villages of Aspirational Districts in four States - Uttar Pradesh, Bihar, Madhya Pradesh, and Rajasthan.
- BharatNet project.
- A 2,313 km submarine Optical Fibre Cable (OFC) between Chennai and Andaman & Nicobar Islands was inaugurated in 2020 for providing connectivity to the latter.
- The government has approved a proposal for provision of submarine Optical Fiber Cable Connectivity by laying approximately 1,891 km of submarine cable between Kochi and Lakshadweep Islands, expected to becompleted in 2023.
- Mobile connectivity to cover uncovered villages and along National Highway (NH 223) and Satellite bandwidthaugmentation in Andaman & Nicobar Islands.
- Mobile connectivity has been enhanced in Lakshadweep and High capacity satellite-based connectivity for broadband services was launched in 2021.

BharatNet Project:

- It aims to provide inexpensive broadband/high speed internet connectivity to all the Gram Panchayats (GPs) -(approx. 2.5 lakh) in a phased manner by 2025.
- Special purpose vehicle (SPV) Bharat Broadband Network Ltd. (BBNL) was formed in February 2012, to lay outoptical fibre network across 2.5 lakh village Panchayats across the country using USOF.
    - BBNL has signed 50 agreements with Service Providers for providing broadband services across various States by utilizing BharatNet network.
    - Further, two agreements have been signed with Service Providers for providing services on an All India basis (including Maharashtra and Odisha).
- The infrastructure created under this project is a national asset, accessible on a non-discriminatory basis to all telecom service providers, and can be utilized to provision broadband/internet services through Wi-Fi Hotspots, Fibre to the Home (FTTH) connections, leased lines, Dark Fibre, backhaul to mobile towers, etc. Therevenue generated from this proliferation will bridge the rural-urban divide.
- PPP Model - In June 2021, the scope of BharatNet was extended up to all inhabited villages beyond GPs, along with approval for a revised strategy for implementation (creation, upgradation, operation, maintenance and utilization of network) of BharatNet through Public-Private Partnership (PPP) model in 16 States - Kerala, Karnataka, Uttar Pradesh, Madhya Pradesh, Rajasthan, Punjab, Himachal Pradesh, Haryana, West Bengal, Assam, Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland and Tripura. The total approved cost for BharatNet project is now Rs. 61,109 crore including Viability Gap Funding (VGF) for implementation of the Public Private partnership (PPP) model of BharatNet in 16 States.

BharatNet PPP Model will bring in the following consumer friendly advantages:

- Use of innovative technology by the Private Sector Providers for the consumers.
- High quality of service and service level to consumers.
- Faster deployment of network and quick connectivity to consumers.
- Competitive tariffs for services.
- Variety of services on high-speed broadband including Over the Top (OTT) services and multi-media servicesas part of packages offered to consumers, and
- Access to all online services.
- Union Cabinet has also given in-principle approval to extend village connectivity including Optical

Fiber connectivity under BharatNet to all the remaining States/UTs.

- The project is affected mainly on account of widely dispersed GPs across remote corners of the country, covering difficult terrains (including hilly/ rocky), Right of Way (RoW) issues and also difficulty of access in LWE affected areas.

Prime Minister's Wi-Fi Access Network Interface (PM-WANI):

- GoI has also approved proliferation of Public Wi- Fi broadband Networks under the framework of PM-WANI.
- With Public Wi-Fi Broadband, the user experience and Quality of Service will improve, and also lead to increased employment for small and micro entrepreneurs providing an additional source of income.
- This service will be especially useful in rural areas where Public Wi-Fi Hotspots are also being created under BharatNet.

Conclusion

- While much of urban India has been able to benefit from working and learning from the safety of their homes, financial limitations in accessing the internet by the rural poor prohibit them from benefitting from the digital revolution.
- This indicates that while much has been done to expand rural internet infrastructure, much more needs to be done to bring reliable and accessible internet connectivity to the rural masses such that they do not miss out on the digital revolution.
- Even as the government expands the rural internet network through BharatNet and other programmes, it will also have to address the problem of cost of access to the internet so as to make it affordable enough to bridge the digital divide.

Socio-Economic Impacts of National Highways

- The 63.71 lakh km (till 2019) of the road network in India is the second-highest in the world, and there has been a constant increase in the road network in India. The extent of road construction per day, as reported, has increased in 2020-21 to 36.5 km per day from 28 km per day in 2019-20, a rise by 30.4 percent.
- It has been found that in developing economies like India, a large public investment project on road infrastructure development plays a crucial role in reducing rural poverty and enhancing the socio-economic well-being of the people living in proximity of highways.
- The development of highways tends to change agricultural practices. The presence of highways induces farmers to change cropping patterns and to move to more cash crops.
- It also contributes to the creation of non-farm sector development by being conducive to the development of industries. It also results in greater accessibility to job markets.
- The highways help in the enhancement of spatial connectivity and help increase the mobility of people and freight. It reduces the cost of logistics. It improves access to markets.
- In an economy, spending on infrastructure creates multiplier effect on creation of additional income. In the context of India, the estimated value of the capital expenditure multiplier is 2.45. This implies every one rupee spent as capital expenditure creates 2.45 rupees income in the economy.
- Better road connectivity in rural areas increases school attendance, particularly of girls.
- It also helps improve access to health and educational facilities.
- The Pradhan Mantri Gati Shakti programme has been launched to expedite the infrastructure and road development in India.
- Bharatmala Programme: The grand initiative of connecting a large part of India through road connectivity has been initiated in 2017 under the Bharatmala Pariyojana scheme. The programme aims to develop 34,800 km of National Highway corridors, connecting 600+ districts in the nation. Bharatmala Pariyojana focuses on the development of 24,800 km of dedicated expressways, access-controlled economic corridors, associated feeder routes, coastal and port connectivity, and border and international connectivity corridors.
- The Union Budget 2022-2023 aims for the formulation of a Master Plan for expressways and the completion of 25,000 km of national highways in 2022-23.

Conclusion

- The strategy of pushing forward economic growth through the development of physical infrastructure ensures inclusive as well as sustainable growth of a country.
- The highways create positive impact on socio-economic status of villages they pass through.
- A wide range of social and economic impacts, from physical connectivity to long-term economic impacts such as job creation and welfare improvement emerge in rural areas from road connectivity.
- The highway connectivity in rural areas has impacts upon change in agriculture and crop pattern, enhance accessibility of education and health as well enhance value of land in proximity areas.

Railway Connectivity

Introduction

- Railway infrastructure is considered an important contributing factor to the regional, social, and economic development of a country like India.
- It helps in the creation of employment, enhances connectivity, improves accessibility, increases production, facilitates trade and commerce and is overall considered an engine of progress and a great source of national integration.

Dedicated Freight Corridors:

- The dedicated freight corridor (DFC) project is one of the most ambitious projects undertaken by Indian Railways. It is being developed along the Golden Quadrilateral (GQ) to link the four metropolitan cities of Delhi, Mumbai, Chennai and Kolkata, and the two diagonals of the quadrilateral they form (Delhi-Chennai and Mumbai-Kolkata).

PM Gati Shakti and Railways:

- PM Gati Shakti is a transformative approach driven by seven engines, namely, Roads, Railways, Ports, Airports, Waterways, Mass Transport and Logistics Infrastructure.

Kisan Rail and Rural Upliftment:

- Under this scheme, 157 trains are being operated on eight routes transporting more than 49,000 tonnes of commodities.
- Kisan Rail also provides a 50 percent subsidy in the freight segment.
- The Government has announced plans to develop one hundred PM Gati Shakti cargo terminals for multi modal logistics facilities in the next three years.

Green fuel Initiatives:

- Indian Railways is aiming to achieve 100 percent electrification of railway lines by December 2023.
- Indian Railways has adopted an environment-friendly technology called Head-on Generation (HOG) system for supplying power to passenger coaches, which eliminated the requirement for separate power cars in trains, thus cutting down energy costs significantly.
- Indian Railway has planned to source around 1,000 MW of solar power and 200 MW of wind power by 2021-22 across zonal railways and production units.
- It is progressing towards becoming the world's largest green railway network by 2030, with the target of becoming a net-zero carbon emitter including setting up solar plants and wind projects on unutilised railway land on a mega scale.

Conclusion:

- For its multi-faceted and multi-dimensional contribution, it is considered as 'Lifeline of India' and will help in enhancing people's capabilities, choices and quality of life.

Transforming Rural Connectivity

Introduction

- Rural connectivity (both physical and digital) was a development priority for India even before the COVID-19 pandemic but now it is indispensable.
- Better rural connectivity provides an enabling environment for improvement in livelihoods, employment, education and healthcare.

Impact on livelihoods

- Improved rural connectivity (e.g. roads, phones, internet, and social media) greatly contributes to the creation of an enabling environment for local communities that stimulates entrepreneurship like starting or expanding the existing local businesses.
- Better rural connectivity with good quality infrastructural facilities will also open opportunities for rural tourism and homestay enterprises.
- Digital skills will help rural women become self-reliant.

Engaging Local institutions

- The rural connectivity programme requires a robust service enterprise framework. There is the need to create a vibrant 4P model i.e. Public-Private-Panchayat Partnerships for inclusive and sustainable rural development through rural connectivity. The Gram Panchayat Development Plan (GPDP) could be an effective tool to mainstream rural connectivity issues.
- Availability of adequate funding, training and capacity development is necessary for a robust and inclusive rural connectivity programme. These include the necessity of a comprehensive programme of public investment.
- To promote connectivity in rural areas, governments can ease regulatory requirements for business models such as community networks, and PPP models. There is also the need to create a more enabling environment for investment in underserved areas through incentives such as tax breaks, Corporate Social responsibility (CSR) and crowdfunding, etc.

Conclusion

- Rural connectivity needs to be understood from the perspective of the most vulnerable people in the rural areas.
- Speeding up the process of a robust and inclusive rural connectivity programme for producing major innovations in multiple areas, such as livelihood, education, health and the environment, is indispensable for attaining Vision India @2047.