

Gist of **KURUKSHETRA**

July 2021



Rural Infrastructure

Rural Transformation
through Bolstered
Infrastructure

**Rural Irrigation
Infrastructure** under
PMKSY

Potential in **Food
Processing Industry**

PMGSY: Road to Prosperity

Digital India: Towards a Connected
Nation

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04

Ranks in
Top 10

09

Ranks in
Top 20

13

Ranks in
Top 50

22

Ranks in
Top 100



RANK 03

Pratibha Verma



RANK 06

Vishakha Yadav



RANK 08

Abhishek Saraf



RANK 10

Sanjita Mohapatra



RANK 11

Nupur Goel



RANK 12

Ajay Jain



RANK 14

Anmol Jain



RANK 16

Gunjan Singh



RANK 19

Shresta Anupam



RANK 23

Nidhi Bansal



RANK 24

Abhishek Jain



RANK 30

Pari Bishnoi



RANK 34

Apurv Chauhan



RANK 52

Om Kant Thakur



RANK 56

Pankaj



RANK 66

Saurav Pandey



RANK 69

Navneet Mittal



RANK 81

Anil Kumar Rathore



RANK 84

Jivani Kartik Nagjibhai



RANK 85

Shubhank Mishra



RANK 96

Hardik Aggarwal



RANK 98

Y Megha Swaroop

INCREDIBLE RESULTS

CSE 2018 Results

11 Ranks in Top 50

28 Ranks in Top 100

183 Ranks in the Final List



Rank 11
Pujya Priyadarshni



Rank 16
Dhodmise Trupti Ankush



Rank 21
Rahul Jain



Rank 24
Anuraj Jain

CSE 2017

5 Ranks
in top 50

34 Ranks
in top 100

236 Ranks
in the final list



Rank 3
Sachin Gupta



Rank 6
Koya Sree Harsha



Rank 8
Anubhav Singh



Rank 9
Soumya Sharma



Rank 10
Abhishek Surana

CSE 2016

8 Ranks
in top 50

18 Ranks
in top 100

215 Ranks
in the final list



Rank 2
Anmol Sher
Singh Bedi



Rank 5
Abhilash Mishra



Rank 12
Tejaswi Rana



Rank 30
Prabhash Kumar



Rank 32
Avdhesh Meena

CSE 2015

5 Ranks
in top 50

14 Ranks
in top 100

162 Ranks
in the final list



Rank 20
Vipin Garg



Rank 24
Khumanthem
Diana Devi



Rank 25
Chandra Mohan
Garg



Rank 27
Pulkit Garg



Rank 47
Anshul Agarwal

CSE 2014

6 Ranks
in top 50

12 Ranks
in top 100

83 Ranks
in the final list



Rank 4
Vandana Rao



Rank 5
Suharsha Bhagat



Rank 16
Ananya Das



Rank 23
Anil Dhameliya



Rank 28
Kushaal Yadav



Rank 39
Vivekanand T.S

CSE 2013

5 Ranks
in top 50

62 Ranks
in the final list



Rank 9
Divyanshu Jha



Rank 12
Neha Jain



Rank 23
Prabhav Joshi



Rank 40
Gaurang Rathi



Rank 46
Udit Singh

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Team BYJU'S

Gist of Kurukshetra July 2021 Issue: Rural infrastructure

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Chapter 1: Rural Transformation through Bolstered Infrastructure

Significance of rural infrastructure development:

- Infrastructure is one of the five inherent pillars of Aatma Nirbhar Bharat.
- In a country like India where more than 60 percent of its population still lives in its countryside, the development of its rural infrastructure becomes absolutely vital for rapid growth. Today, rural India's contribution to our national income is estimated to be more than 45 percent and according to various reports, by the year 2050 more than half of our population will still be living in rural areas.
- A robust rural infrastructure through its systemic linkage effects – both backward and forward, is capable of facilitating better avenues of farm and non-farm product marketing and thereby adequately remunerating the activities of farmers, manufacturers and services providers in a rural set-up. Rural infrastructure has a two-fold impact in terms of boosting demand for goods and services in rural areas and also facilitating the marketing of rural produce. A bolstered rural infrastructure contributes to rural transformation through its multiplier effect.
- Rural infrastructure contributes positively to inclusive growth as well. The creation of sustainable rural infrastructure will help address issues of poverty, income and livelihood insecurities in rural areas.
- Today, around 69 percent of India's population (88 crores) is rural and resides in more than 6.45 lakh villages. Mahatma Gandhi had rightly underscored the importance of adopting a bottom-up approach for the country's socio-economic development and his statement "the real India lives in her villages" is often quoted in different development fora.
- Rural infrastructure ensures economic development through reduced cost of production and logistics, increased productivity, improved economies of scale, enhanced employment and improvement in public and private investments in rural farm and non-farm activities.

- Investment in physical infrastructure would be essential for the rebound of the rural economy, especially in the backdrop of the [COVID-19](#) pandemic.

Governmental initiatives:

- The development of rural infrastructure has been taken up as a multi-pronged strategy ranging from focused interventions in particular fields like construction and maintenance of roads (e.g. [Pradhan Mantri Gram Sadak Yojana](#)) to cluster development by provisioning for infrastructure facilities (Shyama Prasad Mukherjee Rurban Mission).
- Some of the recent initiatives implemented by the government to strengthen physical infrastructure include the following.

Budget announcements:

- Budget 2021-22 underscored the need to focus on infrastructure, these ranged from Production Linked Incentive Schemes to Mega Textile Parks; from strengthening the National Infrastructure Pipeline to proposing the creation of [Development Financial Institutions](#); from asset monetisation to increasing capital budget; etc.

Transportation sector:

- India has a huge road network of almost 59 lakh kilometres, the second largest in the world after the USA. Out of this, as much as 71 percent is constituted by rural roads, which provide connectivity within rural areas. A milestone of constructing 37 kilometres of highways per day was achieved in 2020-21.
- The release of draft safety requirements of Road-Trains is a step towards environment-friendly decongestion of road transport, while striving towards an efficient movement of goods.
- The extension of Krishi Rail for transporting perishable fruits and vegetables by connecting production and consumption centres and an incentive for the farmers to use Kisan Rail indicates Govt's commitment to ensure remunerative prices to the farmers and producers of rural areas. These are important initiatives aiming at ensuring a seamless supply chain and reducing wastage of perishable products.

Agriculture sector infrastructure:

- National Agriculture Market, also referred to as [e-NAM](#), has created a virtual platform that integrates wholesale mandis across the country. The objective is to ensure remunerative prices for farmers by facilitating online trading of agriculture and horticulture commodities.
- Earlier, in 2018-19, an Agri-Market Infrastructure Fund with a corpus of Rs. 2,000 crore had been announced. The Fund would be instrumental in upgrading agriculture marketing infrastructure. It would help ensure the development and upgradation of the physical infrastructure of Gramin Agricultural Markets.
- The Mission for Integrated Development of Horticulture and [Pradhan Mantri Kisan Sampada Yojana](#) are particularly important for ensuring adequate and quality cold storage facilities.

Water Supply and Electricity:

- The Jal Jeevan Mission has the objective of enabling rural households to have assured potable water through household tap connections.
- In October 2017, Pradhan Mantri Sahaj Bijli Har Ghar Yojana – Saubhagya was launched for the electrification of poor households, including rural households. Around 281 crore households have been electrified under this scheme.

Telecommunications infrastructure:

- The [Bharat Net project](#) is being implemented to provide broadband connectivity to 2.5 lakh Gram Panchayats. Taking the Digital India initiative of providing easier and better connectivity one more step forward, in August 2020, it was announced that over the next 1,000 days, all 6 lakh villages in the country would be connected with optical fibre cable, including the islands of Lakshadweep which would be connected with submarine optical fibre cable.
 - With the second-largest telecom network in the world, India's rural teledensity in January 2021 stood at 59.16 percent.
- As of 8th March 2021, Wi-Fi hotspots has been installed in 1,03,400 Gram Panchayats (GPs).

Facilitating investment into infrastructure:

- An important loan agreement was signed between the Government of India and the [New Development Bank](#) in December 2020, to create durable rural infrastructure assets through natural resource management works and to generate employment to stimulate rural demand.
- The Government of India had set up the Rural Infrastructure Development Fund (RIDF) within National Bank for Agriculture and Rural Development (NABARD) in 1995-96.

Schemes:

- The Garib Kalyan Rojgar Abhiyaan helps strengthen rural infrastructure. More than 50 crore man-days of employment were created under the Abhiyaan.
- The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) serves the two-fold objectives of providing livelihood security and the creation of durable rural assets.
- The Pradhan Mantri Awaas Yojana-Gramin aims to provide pucca houses with basic amenities to all rural houseless households and households living in kutcha and dilapidated houses in rural areas.

Challenges:

- The main challenges lie in attracting investment, maintaining quality and ensuring convergence of programmes and schemes of multiple stakeholder ministries/departments of the Government of India.
 - Infrastructure projects typically have a long gestation period and invariably require high investments.

Chapter 2: Rural Irrigation Infrastructure under PMKSY

Introduction:

- As per a recent government estimate, the average annual water potential in the country is 1,869 Billion Cubic Meters (BCM) whereas the utilizable water availability is only 1,137 BCM per annum that comprises 690 BCM of surface water and 447 BCM of replenishable groundwater.
- The per capita water availability in India is reducing progressively due to the increase in its population and injudicious use of water. This calls for integrated water conservation and a user-interface irrigation scheme for ensuring maximum water use efficiency.

Pradhan Mantri Krishi Sinchayee Yojana:

- Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) is an integrated rural irrigation infrastructure initiative.
- PMKSY provides end-to-end solutions in the irrigation supply chain, viz. water sources, distribution network and farm level application. The Government's long-term goal has been for achieving integrated water use efficiency in India.

Read more on the [Pradhan Mantri Krishi Sinchayee Yojana](#) in the linked article.

Components of PMKSY:

- By 2016-17, a large number of irrigation related projects were facing financial constraints. During 2016-17, 99 ongoing Major/Medium Irrigation projects were prioritized for early completion under the Accelerated Irrigation Benefit Programme (AIBP) component of PMKSY.
- Per Drop More Crop (PDMP) initiative, implemented by the Department of Agriculture, Cooperation and Farmers' Welfare, has laid enormous focus on enhancing water use efficiency at farm level through Micro Irrigation (MI) technological interventions viz. Drip, Sprinkler Irrigation, Pivots and Rain-guns, etc.
 - As on 31.03.2020, about 125 lakh hectares of area are covered under MI out of which 59.62 lakh hectares are under drip irrigation and 6.57 lakh hectares are under sprinkler irrigation.
- The Watershed Development component of PMKSY targets to develop rain-fed portions of the cultivated area and culturable wastelands through ridge-area treatment, drainage like repair and renovation, soil and moisture conservation, rainwater harvesting, nursery raising, plantation and afforestation, etc. with an objective to ensure drought-proofing and prevention of soil erosion, vegetation, rain water harvest and recharge the ground aquifer.

Significance of PMKSY:

- It aims at enhancing agricultural water productivity by providing and expanding not only irrigation, but also ensuring water use efficiency in both irrigated and rainfed agricultural activities.
- PMKSY ensures water use efficiency at the farm level through precision or MI and better on-farm water management practices.
 - The water use efficiency in India for irrigated agriculture has remained relatively low. This results in a higher quantum of water use per unit of crop production in India vis-à-vis other developed nations.
 - The prime reason for the low degree of water use efficiency includes the cultivation of crops without taking into consideration the agro-climatic conditions, traditional agronomic practices and reliance on flood irrigation, etc., that boost disproportionate use of water in agriculture.

- Effectiveness of MI
 - Increase in the irrigated area from the same source of water
 - Irrigation cost is reduced
 - Electricity consumption is reduced
 - Saving of fertilizers
 - The average productivity of fruits and vegetables increased
 - Overall income growth of farmers
- Effective implementation of PMKSY would bring in much needed sustainability in the agricultural sector.
- PMKSY has immense potential to contribute to agricultural productivity through enhanced water use efficiency.

Budget announcements related to irrigation sector:

- The union budget 2021-22 attempted to expedite its efforts in enhancing irrigation potential and efficiency in their utilization at the grass-root level.
- Major priorities defined in the Budget 2021-22 include:
 - Bringing additional 20 lakh hectares of land under minor irrigation
 - At least an additional 1 lakh hectare area covered under Minor Irrigation in water-intensive crops.
 - 25,000 additional micro water harvesting structures.
 - Aiming at drought-proofing of agriculture covering at least 50,000 hectares.
 - Completing 54 projects under AIBP with a view to increasing yield and income, replenish groundwater and enhance water availability.
 - 2 lakh hectare additional culturable command area to be covered.

State government schemes:

- State Governments' initiatives aiming at reducing water demand for agriculture include the ban on early sowing of paddy by Haryana and Punjab, incentivization of low water-intensive crops through Haryana's Jal Hi Jeevan Hai Scheme and Maharashtra's policy directions on mandatory use of drip irrigation for sugarcane cultivation, etc.

Conclusion:

- Water – the lifeline of agriculture is a basic necessity for food production, food security, alleviation of poverty and ensuring sustainable development.
- There is a need for adequate and timely involvement of farmers, farmers' groups, Self-Help Groups, Water User Associations, Farmer Producer Organisations in the planning and execution phases of irrigation initiatives to ensure the actualization of maximum intended benefits of the PMKSY.
- It is desirable that the irrigation potential created over the years should be utilized fully and the gap between the potential created and the actual utilization is narrowed.

Chapter 3: Potential in Food Processing Industry

Significance of the food processing sector:

- Food processing industry is considered as a link industry between agriculture and manufacturing.
- The potential for the food processing industry to drive growth and employment is immense.
 - At present, the sector constitutes as much as 8.98 per cent and 11.11 percent of GVA in the manufacturing and agriculture sectors respectively.
 - It employs the largest number of persons, not just in the formal sector, where it constitutes 12.38 percent of registered employees, but also in the informal sector.
- The impact of the food processing sector on the economy is wide-ranging. The sector can contribute immensely to the empowerment of farmers by providing improved bargaining power to them, leading to a reduction in distress sales and ensuring a steady supply to the processors. Building up processing capabilities, especially basic and primary processing at the farm level can enhance incomes and increase the inclusivity of economic growth as well.
- The food processing sector holds the potential to empower women by creating avenues for entrepreneurship and employment.
 - As per the Ministry of Food Processing, women's share of employment in registered food processing industries stood at 12.6 percent of total employment, whereas the number in the unregistered industries was almost double and stood at 24.7 percent.
- It is important to promote the food processing sector, not just because of its direct spillover effects, but also the indirect effects of improving socio-economic conditions.

Analysis of the food processing sector in India:

Strength and opportunities:

- Consumer demand is increasingly shifting towards processed products.
- Increasing consumption, with rising incomes, is seeing the demand for branded products rise as well as the demand for healthier products.
- The growth of organized retail is another driver of consumer demand in this industry.

Weakness:

- Relative to its potential, India is underperforming in terms of growth in the food processing industry and exports.
 - Despite being the second-largest producer of cereals, fruits and vegetables and fish and in fact the largest producer of milk, India processes less than 10 percent of its total output. The number is lower at 2 percent in the case of fruits and vegetables, and 6 percent for poultry. The numbers are higher in meat products (21 percent) and marine products (23 percent).
 - Despite India being one of the largest producers of agricultural commodities in the world, agricultural exports as a share of total exports are low in India. India is the 14th largest exporter in the world with only 2 percent share in the global export of food products. At present, India's agricultural exports predominantly consist of raw materials, which are then

processed in other countries again indicating the space to move up the value chain. India's processed food products exports have remained low and continue to be dominated by low value-added products. Furthermore, the industry experts feel that the Indian products are non-competitive in terms of price and quality in the export market.

- There is a marked distinction between India's primary and secondary processing capabilities. Whilst India's primary processing capabilities are well-developed (eg: turning wheat into flour), the secondary processing market, where higher value addition takes place (eg: tomatoes to ketchup) lacks scale and penetration.
- At the farm level, due to lack of awareness among the producers, the output lacks quality and safety standards. There is also a lack of processable varieties which is another bottleneck.
- Aggregation centres close to the farm gate are also lacking. Procurement and aggregation of produce at a large scale was disincentivised by prevalent agriculture marketing regulations which has led to a lack of private investments in the sector. As a result, huge gaps exist in the cold chain. Gaps exist in the availability of refrigerated vehicles to transport perishable produce. Combined with inefficient and ineffective post-harvest management at the farmgate level, the annual loss of produce has been estimated to be in excess of Rs 90,000 crores.

Initiatives taken:

- Several initiatives have been undertaken to tap the latent potential of the food processing sector and boost growth.
 - The agriculture reforms announced in 2020 have the potential to unlock bottlenecks in procurement by processors and exporters. Direct selling by farmers and contract farming can help create more backward linkages between the food-processing and exports sector.
 - Dedicated funds have been launched to develop infrastructure at all levels. The [Agriculture Infrastructure Fund \(AIF\)](#), with a corpus of Rs. 1 lakh crore, aims at developing infrastructure at the farmgate level and aggregation points, boosting pre-processing and primary processing capabilities.
 - A dedicated Animal Husbandry Development Fund and the Pradhan Mantri Matsya Sampada Yojana have been launched as part of the AatmaNirbhar Bharat Abhiyaan.
 - Another important intervention is the formation of 10,000 Farmer producer organisations (FPOs). Aggregating farmers through FPOs enhances their bargaining power, both in terms of purchasing inputs and also selling their produce. It is pertinent to note that 85 percent of India's farmers are either small or marginal.
 - In terms of developing large scale capabilities, the Pradhan Mantri Kisan Sampada Yojana was launched. In 2020 alone, 46 food processing projects were operationalized.
 - The PM —Formalisation of Micro Food Enterprises (PM-FME) scheme has been launched.
 - The One District One Product (ODOP) scheme is being effectively leveraged to tap the regional potential of different districts in the sector.
 - 100 percent [FDI](#) is allowed under automatic route in food processing industries. FDIs can bring in the much-required tech infusion across the value chain which can help reduce wastage, maintain quality, and enhance the shelf life of food products.

Way forward:

Tapping export potential:

- Right now, the food processing industry is largely domestic-oriented, with exports accounting for only 12 percent of its total output. There is a huge potential abroad that still needs to be tapped. For this, the production needs to be made export-oriented.
- This would require adherence to global quality standards. The production techniques for traditional foods can be standardized to ensure uniformity.
- Indian 'Super Foods' can be promoted as alternatives to prominent healthy food products. For instance, Amaranth can be promoted against Quinoa, Buckwheat against Oats and Beet Greens against Kale. This would drive their demand and provide much-desired impetus to the development of necessary infrastructure to augment the industry.

Tech-based innovations:

- Tech-based innovative solutions are a necessity for the progress of the sector. The sector can experience tremendous growth in the coming few years if tech-driven solutions are embraced as they highly optimise and individualise the management of resources. In scaling these solutions, partnerships with corporate and the government will play an extremely critical role.

Emphasis on sustainability:

- In the light of increasing evidence of environmental damage being caused by prevalent agricultural practices, sustainability in agricultural practice is an important factor that must be given equal importance in agricultural production.
 - Inefficiency in water use has led to water stress in several parts of India.
 - An imbalance in fertilizer usage is leading to environmental damage.

Climate proofing agricultural production:

- The effects of climate change are going to be substantial. The intergovernmental Panel on Climate Change (IPCC, 2014) has predicted significant reduction in crop yields, to the tune of 10 to 25 percent by 2050. If adaptation and mitigation strategies are not adopted, hard-won gains in food security and poverty stand to be reversed.
- Agricultural models which can help increase productivity, sustainability and enhance farmer incomes, rooted in the principles of agroecology need to be identified, documented, and scaled up.

Chapter 4: PMGSY: Road to Prosperity

Pradhan Mantri Gram Sadak Yojana:

- Back in 2001, half of India's 6,00,000 villages did not have paved roads.
- The Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched in December 2000 as a key programme of the Ministry of Rural Development (MoRD) to provide road connectivity in rural India.
- The basic objective of the PMGSY was to connect all habitations with a population of more than 1000 with all-weather roads by 2003. By 2007, it aimed to connect all the habitation with greater than 500 population in plain areas and greater than 250 persons in desert, hilly and tribal areas.

- It provides for both, construction of new roads as well the upgradation of existing roads with a priority to provide connectivity to unconnected habitation.

Salient aspects of the scheme:

Administrative structure:

- The National Rural Road Development Agency (NRRDA) was set up in 2002 to provide management and technical support to the states in implementing PMGSY. At the state level, the State Rural Road Development Agencies (SRRDA) monitor PMGSY works which are implemented by Public Works Departments (PWD), or Rural Development Department and similar agencies.

People's Participation and Grievance Redressal:

- To ensure local people ownership of roads through local institutions, the provision for transferring the roads to the local Panchayati Raj Institution has been created after five years of completion of works.
- 'Meri Sadak' app also has been introduced in 2015 to boost up monitoring from citizens.

Monitoring framework:

- The central government had deployed National Quality Monitor (NQM) for monitoring of implemented works.
- The Online Motoring and Management System (OMMS) has been introduced and is being used for effective management and monitoring under the programme.
- In 2019, the Ministry has launched Electronic Maintenance of Rural Roads under PMGSY (eMARG) in all states. e-MARG is an initiative of smart application of information technology that integrates data across the department and monitors maintenance status of rural roads and suggest necessary action.

Use of Green Technology:

- The National Rural Infrastructure Development Agency issued detailed 'Guidelines on Technology Initiatives' in 2013 to adopt green technology.
- PMGSY guidelines emphasize the use of new material/waste material/locally available materials to build roads.

Financing and Expenditure:

- The PMGSY programme was started in the year 2000 as a 100 percent Central Sponsored Scheme. Though rural roads are a state subject, it was felt that the finances of the state government will not be adequate to fund a programme of this magnitude.
- However, in 2015-16 the funding pattern was modified to 60:40 between the Centre and the States, except 8 North Eastern and 3 Himalayan states for which the ratio was fixed at 90:10.
- The sources of fund for PMGSY as indicated are (i) Cess on High Speed Diesel, (ii) Budgetary Support (iii) Asian Development Bank Loan and (iv) World Bank Loan

Special Initiative for the North Eastern States and Left Wing Extremism Affected Areas:

- Special attention has been given to North-Eastern states due to their strategic location and climatic position. Financial burden of these states has been eased.
- Similarly, in order to provide seamless connectivity to difficult and remote areas which are also affected by Left-wing Extremists (LWE) violence, the government has started a special project as a vertical under PMGSY known as 'Road Connectivity Project for Left Wing Extremism Affected Areas (RCPLWEA)' .

Evolution of PMGSY:

Launching of PMGSY-II

- In May 2013, the Central Government launched PMGSY-II to consolidate the existing rural road network and to improve its overall efficiency.
- PMGSY-II focuses on the upgradation of existing rural roads, selected based on their potential to facilitate the growth and development of the rural economy through better connection with markets for goods and services.

Launching of PMGSY-III

- In December 2019, the Government of India launched PMGSY-III for consolidation of thorough routes and major rural links connecting habitation, as well as, rural markets, educational institutions, health institutions, etc.
- Through PMGSY-III, use of modern technology in planning and implementation has been introduced. Georeferencing and geo-tagging of rural facilities are done through the app GEO-PMGSY and 'trace maps' are prepared highlighting important facilities in villages and shortest routes to connect them.

Significance of PMGSY:

Impact on Rural Development:

- Rural roads are the basic infrastructure requirement and play a vital role in socio-economic upliftment of rural communities. They contribute significantly to rural development by creating opportunities to access goods and services.
- The scheme has emerged as instrumental in connecting villages, enhancing availability and accessibility of basic services and enhancing the standard of living of rural India.
- The rural roads are instrumental in reducing isolation, vulnerability and income variability and are considered as the backbone for the development of rural economy.

Impact on Income and Poverty:

- Rural roads have a multiplier effect on people's income. Public investment in roads has the largest impact on poverty. It has been found that, in India, with an increase in investment in rural roads by Rs 100 billion, the incidence of rural poverty reduced by 0.87 percent. For each Rs 1 million investment in roads, 165 rural people would be lifted above the poverty line.
- It is found that over the period of 2005 to 2009 the program has caused a 0.1 to 1.4 percentage point reduction in the rural poverty rate.

- With new roads in rural areas new/additional employment and business opportunities have been generated. Also, a shift in distribution of primary sources of income from cultivation and self-employment to unskilled wage labour has been observed in the rural areas.
- Rural roads have a multiplier impact on poverty reduction and raising the living standards of rural people.

Increase in Rural Accessibility:

- PMGSY has connected villages which has helped increase rural accessibility through quick and efficient transport services.
- This increase in accessibility has caused an enhancement in the value of land in remote areas.

Impact on Livelihood:

- PMGSY has made access to markets easier for the farmers, which has improved information and extension services and also impacted the cultivation choices and thereby resulted in positive changes in cropping patterns. Farmers have shifted to more cash crops like fruits, vegetables.
- The roads have opened up avenues for more employment generating options through better business activities, as it has widened the scope of non-farm employment opportunities.
- There has also been a shift in livelihood patterns from cultivation to unskilled non-farm work.

Impact on Health and Education:

- There is a huge improvement in health service accessibility as the PMGSY roads have eased the approachability to medical facilities. This has had a positive impact on the health outcome of rural India.
- PMGSY has also enhanced the all-season accessibility of schools in rural areas, and it is found that 15 percent of the habitations provided connectivity under PMGSY has reported an increase in enrolment among middle-school children, who are more at risk of leaving school.

Challenges and Suggestions:

- Maintenance of existing roads has been a challenge. Hence along with connecting villages, attention should also be given to the quality of roads for sustainable use as well timely maintenance of roads.
- There continues to be the absence of efficient public transport service in the rural areas. Hence arrangement for public transport in connected villages is required to reap better benefits of the rural roads.

Chapter 5: Digital India: Towards a Connected Nation

Digital India:

- Indian government's [Digital India](#) programme aims to transform India into a digitally empowered society and knowledge economy by providing broadband highways, universal access to mobile connectivity, public internet access programme, e-governance, e-Kranti, information for all, electronics manufacturing, IT for jobs and early harvest programmes.

- It also aims to ensure that government services are available to citizens electronically and public accountability is ensured through mandated delivery of government's services electronically.
- Digital India efforts are laid down to achieve results in the following two key focus areas:

Governance and Services on Demand:

- It aims to integrate processes and information across departments and jurisdictions seamlessly to help provide real-time services to citizens both on online and mobile platforms. It also aims to create a cloud-based repository of information for easy access for the citizens as well as better planning and decision-making with the help of GIS.
- It aims to digitally enable processes for businesses and create a digitally enabled cashless economy.

Digital Empowerment of Citizens:

- The programme aims to provide digital literacy and digital services to all citizens through universally accessible digital resources and services in several Indian languages.

Key initiatives:

Aadhaar Enabled Payment System (AEPS):

- Developed by the [National Payments Corporation of India \(NPCI\)](#), AEPS is a payment service based on an individual's Aadhaar card.
- It enables the owner to make financial transactions such as transfer funds, make payments, deposit cash, make withdrawals, etc.

Pradhan Mantri Jan-Dhan Yojana (PMJDY):

- A scheme under the National Mission for Financial Inclusion, it provides access to services of financial nature at affordable rates to boost financial inclusivity and encourage savings.

Revolution in Digital Payment:

- DI has been instrumental in the growth of the digital payments ecosystem and is set to transform the economy for good. India's unique payment systems such as BHIM-UPI and BHIM-Aadhaar are getting recognised globally.
- BHIM app has become one of the main digital payment instruments for sending, collecting money and paying for various utility bills.

E-Pathshala:

- NCERT's e-Pathshala is a platform to disseminate educational resources through a mobile app and a website.

National Knowledge Network (NKN):

- The NKN is a pan-India network with an aim to help connect India's universities, libraries, labs, research institutes across the country to improve inter-communication, stimulate research and create next-gen apps and services.

National Mission in Education through ICT (NMEICT):

- It is a centrally-sponsored scheme that aims to leverage the potential of ICT in education through teaching and learning processes in institutions for higher education. It envisions creating and delivering valuable content through the content delivery portal Sakshat.
- NMEICT has the vision to service more than 50 crore working population with the opportunity for continuing education through interactive, personalised knowledge modules that suit the user's needs and aspirations.

Farmer Portal:

- The portal is designed to be a one-stop destination to gain relevant information related to agriculture, animal husbandry, aquaculture, weather, programmes and schemes.

Kisan Suvidha:

- The mobile application disseminates relevant information to farmers regarding weather, market prices, plant protection, inputs, weather alerts, go-downs and storage and market-related information.

Crime and Criminal Tracking Network & Systems (CCTNS):

- CCTNS is a project under the National e-Governance Plan of the Government of India.
- It allows for the creation of a nationwide networking infrastructure for a highly efficient tracking system for the investigation and detection of crimes and criminals.

Read more on [Crime and Criminal Tracking Network & Systems \(CCTNS\)](#) in the linked article.

Khoya Paya:

- Khoya Paya is an initiative under Digital India to engage citizens to inform and exchange information on children who are missing and found.
- The Khoya Paya portal can be linked to the CCTNS project to help apprehend criminals as well as solve cases of missing minors.

Project Monitoring Website for E-courts:

- E-court's project monitoring website has been created to aid courts with automated decision-making and decision-support system.

Unified Mobile Application for New-age Governance (UMANG):

- Developed by the Ministry of Electronics and Information Technology and National e-Governance Division (NeGD) to promote e-governance in India, it facilitates over 1200 central and state e-services.

MyGov:

- MyGov platform promotes participatory governance by providing citizens with an opportunity to voice their opinions and recommendations in policymaking.

Government e-Marketplace (GeM):

- GeM is an e-marketplace initiative by the National Public Procurement Portal that enables government departments and public sector entities in the procurement of common use goods and services.

Goods and Services Tax Network (GSTN):

- The GSTN manages the IT system of the GST portal and acts as the backbone of the GST system and acts as the core database for it.
- Deep data analytics and AI tools are being used to crack down on GST input tax credit, refund and other frauds and to identify those trying to game the system.

Conclusion:

- The initiatives being taken up under the Digital India programme have opened a wide spectrum for social and economic transformation. It has also enabled a transformation in governance.
- Hence, the government's Digital India programme is playing a revolutionary role in India's development.

Chapter 6: Developing Sustainable Rural Enterprise

Introduction:

- The COVID-19 pandemic has been presenting itself as an unprecedented 'crisis of livelihood'. The COVID-19 pandemic and the subsequent intense and prolonged lockdown have accentuated the livelihood crisis in rural areas.
- During this pandemic, the rural enterprise sector witnessed demand slump, liquidity crunch, labour shortage, inadequate access to formal financial institutions, rise in input cost and raw materials, unsold stock, delayed payment of dues, disrupted value chain and so on.
- The creation of sustainable livelihoods and entrepreneurial avenues have emerged as major challenges.

Significance of rural enterprises:

- The micro, small and medium enterprise sector, which also includes SHGs, contributes significantly to the rural economy, both in terms of output and employment.
- Sustainable entrepreneurship could be a key driver for self-reliance. It can help India build the local economy through the tools of micro and small industries.
- It will also allow people to earn their livelihoods closer to their families and their communities without having to migrate to cities.
- Local entrepreneurs, especially the women-led and household-based enterprises have emerged as a safety net for the family even during the pandemic.
- Entrepreneurship development can ensure sustainable livelihoods and create employment opportunities for local people in the midst of the pandemic.

Recommendations:

- There is the need for a holistic approach for developing entrepreneurial abilities, managing and nurturing their capabilities and providing long-term handholding to both aspiring and existing rural entrepreneurs.
- To be able to tap the full potential of rural enterprises it is important to create a robust and process-driven ecosystem, which will:
 - Empower both existing and aspiring rural enterprises/entrepreneurs to access formal institutions
 - Prepare them to get benefitted from various programmes and schemes relating to enterprise promotion
 - Put these enterprises on a scale ladder, so that these enterprises grow and create employment opportunities over the years
- The government intervention will have to address the following key aspects to ensure sustainable rural enterprise development- 1) skill and knowledge gaps 2) finance 3) access to appropriate technology 4) Infrastructure (i.e. transport, water, energy, logistic, human capital) 5) marketing 6) ease of doing business, regulatory and compliance issues 7) mentoring and hand holding.

Formalisation:

- It is important to simplify regulatory compliance formalities for rural startups.

Platformization:

- On a single platform, a bouquet of services including registration, regulatory compliances, connecting with banks, connecting with government schemes, mentoring and handholding, peer network, investor connect, marketing and business advisory, branding, quality and market research, etc. needs to be provided through online IT-enabled portals or platforms.

Mentoring and Handholding:

- Regular and continuous mentoring and handholding is an important ingredient of an entrepreneurial ecosystem. The micro and small entrepreneurs need mentoring and handholding not only on business and technical skills but also to deal with various psychosocial problems.
- A large number of agencies such as RSETI and MSME Tool Rooms (known as MSME Technology Centres) provide hand holding with respect to entrepreneurship development, formulation of business plans, financial literacy, vocational training, etc.
- Enterprise Development Centres (EDCs) within District Industries Centres (DICs) also work in the domain of mentoring and handholding.

Community Resource Person led Enterprise Promotion:

- The creation of a cadre of mentors for entrepreneurship promotion is a well-accepted methodology and has been included under various livelihood programmes including the Start-up Village Entrepreneurship Programme (SVEP) Project under [DAY-NRLM](#) which is focussing on the development of Community Resource Persons (CRPs) for Entrepreneurship Promotion as local level mentors for supporting rural women to start their small business.

- The CRPs are chosen from within the community and trained in life skills and leadership, business development, risk management, market analysis, communication, marketing, financial linkages, etc.
- The CRPs can serve as a link between the community and various departments/agencies. They are seen as a catalyst that helps restore the community's confidence in the government system by bringing govt departments closer to the people.

Panchayat as a Hyper Local Platform:

- The Gram Panchayat Development Plan (GPDP) can play a direct role in identifying sectors, sub-sectors and activities by their respective business potential and devise a mechanism to prioritise resource allocation.
- The Panchayat secretariat can play a role of a 'point of contact' by connecting the rural entrepreneurs with various Government schemes and programmes and also help them to get access to support measures available on IT-enabled portals or websites.

Initiatives taken by the private sector:

- Digital Unlocked – an initiative by Google in association with FICCI and the Indian School of Business, aims to help Indian businesses unlock exponential growth with digital.
- The Digital Saksham initiative by CII-Mastercard-NIMSME aims to educate and train micro and small business owners and entrepreneurs enabling them to integrate into the digital economy and access credit, expand their market access, diversify their customer base, and digitize their financial operations.
- A mentorship-led entrepreneurship development programme has been initiated by the Ministry of Tribal Affairs (MoTA) in partnership with Facebook.

Chapter 7: Augmenting Rural Healthcare Infrastructure

Rural healthcare system in India:

- The physical healthcare infrastructure can be broadly classified into the following three types – primary care (provided at primary health centres), secondary care (provided at district hospitals), and tertiary care institutions (provided at specialised hospitals like AIIMS).
- The health care infrastructure in rural areas has been developed as a three-tier system based on the population norms. This includes Sub-Centres (SCs), Primary Health Centres (PHCs), and Community Health Centres (CHCs).

Challenges in India's health sector:

Low public expenditure:

- Despite an increase in India's public health expenditure from 0.9 percent of GDP in 2015-16 to 1.1 percent of GDP in 2020-21, it still remains low in comparison to other developing countries.
- The National Health Policy, 2017 aims to increase public health expenditure to 2.5 percent of the GDP by 2025.

Inadequate healthcare infrastructure:

- Healthcare infrastructure in India can be categorised into physical infrastructure and human resources.
- India has 1 bed per 1,000 people, which is significantly less than the global average of 2.9 beds. National Health Policy, 2017 plans to increase this to 2 beds per 1,000 people.
- The [Economic Survey 2020-21](#) observed that the aggregate density of health workers is 23 per 10,000 population, which is lower than that recommended by World Health Organisation (WHO) (44.5 health workers per 10,000 population) to achieve the Sustainable Development Goals (SDG) targets by 2030. Despite the recent increase in the total number of health workers, there is a shortfall of doctors, specialists, and surgeons.

Regional disparities:

- In India, 75 percent of the healthcare infrastructure is concentrated in urban areas where only 27 percent of the total Indian population is living.
- This has resulted in a scenario where on the one side our peripheral health centres are under-utilized and on the other side, our tertiary and secondary (District) level facilities are often argued as overloaded that results in compromise of quality.

Increasing share of the private sector:

- Private healthcare has been witnessing steady growth whereas there is a serious lack of good quality infrastructure in the public healthcare sector. This has invariably led to an increase in out-of-pocket expenditure.
 - Out-of-pocket expenditure is the payment made directly by individuals at the point of service where the entire cost of the health service is not covered under any financial protection scheme.
- The Economic Survey 2020-21 observes that the overall out-of-pocket expenses in India on healthcare are 60 percent of the total expense on public health (which is one of the highest in the world).
 - The survey highlights that increasing the spending on public health from 1 percent of the GDP to 2.5-3 percent of GDP will help in reducing the out-of-pocket expenses from 60 percent to 30 percent.

Low utilization of healthcare facilities:

- The overall health care utilization is also low, since only half of (52 percent) of Indian mothers receive three or more antenatal checkups and only 43.5 percent of children in India receive all vaccinations.

Governmental initiatives:

Pradhan Mantri Jan Arogya Yojana (PMJAY):

- The [Ayushman Bharat programme](#) – PMJAY was launched in September 2018-19. It aims to provide an insurance cover of Rs five lakh per family per year to 10.7 crore poor families. The scheme subsumed two centrally sponsored schemes, namely, Rashtriya Swasthya Bima Yojana (RSBY) and the Senior Citizen Health Insurance Scheme.

- The scheme provides insurance coverage for secondary and tertiary healthcare.

Pradhan Mantri Swasthya Suraksha Yojana:

- Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) was introduced in 2003 with the objective of correcting regional imbalances in the availability of affordable and reliable tertiary healthcare services, and augmenting facilities for quality medical education in the country.

PM AatmaNirbhar Swasth Bharat Yojana:

- The High-Level Group on Health Sector (2019) and the report of the [15th Finance Commission](#) have observed that focus on prevention and an early management of health problems can reduce the need for complicated specialist care provided at the tertiary level. It has recommended that the focus of healthcare provision in the country should be towards providing primary healthcare.
- The government plans to transform 1.5 lakh sub healthcare centres, primary health centres and urban primary health centres into Health & Wellness Centres (HWCs) by 2022.

Recommendations:

- With more than 70 percent of its population residing in rural areas, rural health care must be a top priority for India.
- Despite some progress in creating access to quality, free and universal healthcare for individuals and populations, the rural healthcare sector still faces challenges and needs focused policy-level interventions.
 - Increasing access and utilization; bringing down high out-of-pocket health expenditure; dealing with inequity in the availability of healthcare; increasing budget allocation for healthcare should be top priorities in the health sector.
 - The supply side of the health sector in terms of physical infrastructure and human resources needs to be scaled up significantly.
 - There is substantial potential for making use of technological advances in order to improve health outcomes. This could involve measures such as telemedicine and digital health.

Conclusion:

- Building and sustaining health infrastructure is a big priority for policy planners especially in the backdrop of the COVID-19 pandemic.
- Accessibility, affordability and accountability of the healthcare system of India are essential for the better health and well-being of its people.

Chapter 8: Developing Rural India

Significance of rural development:

- Rural hinterland is the backbone of our economy. Rural progress holds immense potential and promise in powering the world's fifth largest economy to its zenith in the year to come.
- Rural development is also inevitable for sustainable and inclusive development of India.

- Given that the rural areas still house a significant proportion of India's total population, no meaningful economic or social progress can take place in India without its villages.

Initiatives taken:

- The government initiatives in the rural areas have focused upon providing access to basic amenities such as toilets, drinking water and natural gas, to ensure a minimum living quality of life while also strengthening the economic fundamentals of rural India.

Swachh Bharat Mission:

- From 38 percent of toilet coverage pan-India in 2014, the country now has a hundred per cent coverage of toilets, with nearly 11 crore (110 million) toilets being constructed largely across rural India.
- Over 6,00,000 villages have been declared Open-Defecation Free (ODF), leading to better health and sanitation for a large chunk of Indians.

Ujjwala Yojana:

- [Ujjwala Yojana](#) is targeted at providing energy security and dignified life with better health for rural women by providing them over eight crore (80 million) free gas cylinders since 2016.

PMAY-G:

- Realizing the significance of affordable and reliable housing for all in ensuring equitable development in rural India, the government launched in 2016, the Pradhan Mantri Awas Yojana-Gramin (PMAY-G) to provide all-weather homes to the poorest strata of society.
- Over 1.5 crore houses have been built in rural areas, reducing homelessness and acute poverty for a majorly rural populace.

Rural infrastructure:

- Electrification programs of villages has been emphasized through schemes such as Deen Dayal Upadhyaya Gram Jyoti Yojana and [SAUBHAGYA Yojana](#).
- Rural road construction has been a major area of focus under the Pradhan Mantri Gram Sadak Yojana. Over 2.25 lakh kilometres of rural roads connecting 97 per cent of India's villages with the rest of the country have been completed.
- Through the introduction of optical fibre connectivity through the BharatNet program, almost 1.6 lakh Gram Panchayats (Rural Councils) of the country are getting digitally connected.

Agricultural sector:

- Given that agriculture and allied activities form the major contributor to rural economies, boosting farm incomes, promoting better soil health and diversifying the agricultural pattern of the rural areas have been important areas of focus for higher rural economic growth.
- Soil Health Cards (SHCs), e-National Agricultural Market (e-NAM), PM-Kisan Samman Nidhi Yojana (PM-KISAN), PM Fasal BimaYojana and PM Krishi Sinchayee Yojana are some of the notable schemes and measures taken.

Diversification of livelihood opportunities:

- There has been a sustained push towards diversifying the rural economy away from its over-dependence on agriculture, towards activities such as industries, off-farm activities, entrepreneurship and handloom/heritage-based local industries.
- Schemes like Mudra Yojana, One District One Product (ODOP), Skill India, Kaushal Vikas Yojana and Standup India aim to promote grassroots entrepreneurship and innovation in rural areas.



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