

1. Physical Infrastructure

Overview

- Transportation -
 - India has a huge road network of almost 59,00,00 kilometres, second largest in the world after USA. As much as 71% of this provide connectivity between rural areas. 2% of this network is accounted for by National Highways and 3% by State Highways as on 31 March 2018. As per The Ministry of Road Transport and Highways (MoRTH), 36% of all the road accidents in the country during 2019 to place on national highways. As much as 60.34% of these took place in rural areas.
 - Inland water transport has the least freight cost(Rs.1.06/tonne-km) as compare to railways(Rs.1.36/tonne-km) and highways(Rs.2.50/tonne-km) and can be a effective and cheap mechanism of transportation of various products from rural areas to other domestic markets.
- Telecommunications -
 - Second largest telecom network in the world but India's rural tele-density in January 2021 stood at 59.16%.
 - More than 25,000 and habited villages with no mobile connectivity.
 - Broadband penetration, defined terms of number of broadband subscribers per hundred population, in rural areas vis-a-vis state in urban areas is 29.2 and 93.0, respectively.
 - Only 8.5% of students in India have access to Internet as per UNICEF's Report, March 2021 which accentuates the predicament created by pandemics and consequent closure of schools.
- Water Supply - As on 15th March, 2021, 18% of rural habitations have less than 40 L per capita per day LPCD of potable water and 3% of rural habitations have water resources with quality issues.

Initiatives

<u>Sector</u>	<u>Scheme</u>	<u>Objective</u>
Transportation	Pradhan Mantri Gram Sadak Yojana (PMGSY)	Construction and maintenance of roads in rural areas.
	Shyama Prasad Mukherjee Rurban Mission	Cluster development by provisioning for infrastructure facilities.
	Rural Infrastructure Development Fund (RIDF) within National Bank for Agriculture and Rural Development (NABARD)	Activities ranging from agriculture sector to social sector to rural connectivity are eligible.

	<p>Ministry of Road Transport and Highways (MoRTH)</p>	<ul style="list-style-type: none"> - Operationalisation of app-based wheeler taxis in rural areas to assist farming and other Rural communities with smoother movement. - Release of draft safety requirement of road-trains striving towards efficient movement of goods and environment friendly decongestion. - Online services like learners license, grace period for renewal of driving licences, facilitating interstate border movement of trucks carrying essential goods etc. has been done. - Ambulances with life-saving support systems released in April 2021 to reach victims within Golden Hour.
	<p>Railways</p>	<ul style="list-style-type: none"> - Movement of essential commodities, including food grains, fruits and vegetables, reach their destinations. - To protect people, the railways announced comprehensive measures, including the ones which discourage non-essential travel, and restored passenger services in a graded manner. - Extension of Krishi Rail for transporting perishable fruits and vegetables - incentive for the farmers to use Kisan rail by allowing 50% subsidy on transportation of notified fruits and vegetables from October 2020.
	<p>Others</p>	<p>Recent protocol signed with neighbouring countries like Bangladesh, and land water have proposed inclusion of new routes, etc. Which would help in developing the hinterlands.</p>
<p>Livelihood</p>	<p>Garib Kalyan Rozgar Abhiyan</p>	<ul style="list-style-type: none"> • launched in June 2020 for a period of 125 days to provide immediate employment and to create livelihood opportunities for reverse migrants: and strengthen rural infrastructure. • It converged efforts of 25 ongoing schemes of 12 ministries or departments of government of India. More than 50 crore man days of employment created under the Abhiyan.

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	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	<ul style="list-style-type: none"> • providing livelihood security • creation of durable rural assets
Skill Development	One District One Product (ODOP), Kaushal Vikas Yojana, Stand-up India	
Housing	Pradhan Mantri Awas Yojana-Gramin	Aims to provide Pucca houses with basic amenities to all rural houseless households and households living in Kacha and dilapidated houses in rural areas
Water Supply	Jal Jeevan Mission	Enabling rural households to have assured potable water through household tap connections.
Electricity	Pradhan Mantri Sahaj Bijli Har Ghar Yojana-Saubhagya	In October 2017 for electrification of poor households including rural households.
Telecommunications	Bharat net project	Provide broadband connectivity to 2.5,00,00 gram panchayats.
	Digital India Initiative, since August 2020	Provide easier and better connectivity by connecting all six lakh villages in the country with optical fibre cable over the next thousand days, including the islands of Lakshadweep with submarine optical fibre cable.
	Others	Learning programmes were conducted during the academy year 2020-21 in the form of radio, community radio and CBSE podcast, toll-free numbers, missed calls, SMS-based request for audio content, localised radio content for edutainment, etc.
Agriculture	Soil health cards SHCs, e-National Agricultural Market (e-NAM), PM – Kisan Samman Nidhi Yojana (PM – KISAN), PM Fasal Bimah Yojana, PM Krishi Sinchai Yojana	
Finance	Jan Dhan – Aadhaar – Mobile(JAM Trinity), Direct benefit transfer (DBT), Mudra Yojana	
Others	Various apps, including Aarogya Setu and Kisan Rath, were launched early on during the first lock down period to mitigate the adverse impact on the economy.	

Challenges: Attracting investment, maintaining quality and ensuring convergence of programmes and schemes of multiple stakeholder ministries, Departments of Gol.

2. Rural Irrigation Infrastructure - Pradhan Mantri Krishi Sinchai Yojana (PMKSY)

Overview:

- The average annual water potential in the country is 1869 Billion Cubic Meters (BCM) whereas utilisable water availability is only 1137 BCM per annum that comprises – 690 BCM of surface water and 447 BCM of replenishable groundwater.
- The average annual per capita water availability in the years 2001 and 2011 was assessed as 1816 cubic meters (CM) and 1545 CM respectively which may further reduce to 1340 and 1140CM in the year 2025 and 2050, respectively.
- Low degree of water use efficiency due to cultivation of crops without consideration for Agro-climatic conditions, free or subsidised power, traditional agronomic practices and reliance on the delegation, etc., boost disproportionate use of water in agriculture.

Past Initiatives: Gol had launched a specific rural infrastructure programme called **Bharat Nirman** as a time bound business plan for implementation in four years from 2005-2009. The six prioritised components included under the programme were *irrigation, drinking water, electrification, roads, housing and rural telephony*. This program implemented in PPP mode was extended beyond the 12th five year plan (2012-17).

Objective of PMKSY: To enhance agricultural water productivity by expanding irrigation and ensuring water use efficiency in both irrigated and rain fed agricultural activities. PMKSY through its components can provide end to end solutions and irrigation supply chain, viz. *Water sources, distribution network and farm level application*.

Component	Output	Outcome	Problems/Constraints
Per drop more crop (D/o agriculture, cooperation and farmers welfare)	<ul style="list-style-type: none"> • Making available efficient water conveyance and precision water application devices – sprinklers, trips, papers, rain-guns, etc. • Provisioning of protective irrigation facilities in rain-fed agriculture 	<ul style="list-style-type: none"> • Increased crop productivity, enhance farmers income. • improved water use efficiency. 	<ul style="list-style-type: none"> • Durability of the assets created and or provided under the sub-scheme. • Maintenance challenges and cost pressures. • Lack of adequate scientific knowledge, training and awareness among the farmers. • Lack of knowledge about crop diversifications.

Component	Output	Outcome	Problems/Constraints
Watershed development (Department of land resources)	<ul style="list-style-type: none"> Focusing on development of rain fed portions of the net cultivated area and cultural wasteland through this area development, drainage line treatment, soil and water conservation, rainwater harvesting, nursery raising, a forestation, horticulture, pasture development, livelihood for asset less persons, etc. 	<ul style="list-style-type: none"> Drought-proofing. Prevention of soil erosion, regeneration of natural vegetation, rainwater harvesting and recharging of the groundwater table. Multi-cropping to provide sustainable livelihoods. 	<ul style="list-style-type: none"> Rainfall uncertainties, poor economic conditions of the farmers and gradual land addition in the rain fed areas. Reduce flow of water to downstream reserve works for improper development of watershed in the upstream. Lack of convergence planning and coordination amongst department of rural development, Panchayati Raj, agriculture, forest, etc.
Har Khet Ko Paani (Ministry of Jal Shakti)	<ul style="list-style-type: none"> Source of meditation, distribution, groundwater development, lift irrigation, diversion of water from water plenty to water scarce areas, repair, restoration, renovation of traditional water bodies. 	<ul style="list-style-type: none"> Enhance crop yields. Increase farmers income. Replenish groundwater. Improve water availability. Accelerated implementation of advanced stage irrigation projects held up due to financial constraints up to 2019 	<ul style="list-style-type: none"> Gaps in the planning and implementation. Awareness level of farmers on the benefits of the irrigation program. Time and cost overrun due to delays in completion of irrigation works taken up.
Accelerated irrigation benefits programme (Ministry of Jal Shakti)	<ul style="list-style-type: none"> Focusing on faster completion of ongoing major and medium irrigation projects including national projects. 		<ul style="list-style-type: none"> Unavailability of forest/environment clearances. Lack of consensus amongst locals leading to resistance and conflicts.

Output, Outcome and Constraint Analysis of PMKSY Components

Complimentary State Practises: There is a ban on early sowing of paddy by Haryana and Punjab, low water intensive crops are incentivised through Haryana's **Jal hi Jeevan hai** scheme. Maharashtra's has policy directions on mandatory use of drip irrigation for sugar cane cultivation.

Conclusion: Adequate and timely involvement of farmers, farmers groups, SHGs, water users association, pharma producer organisations, too, in planning and execution phases of irrigation initiatives will ensure maximisation of benefits of PMKSY.

FACT TO KNOW : PMKSY: 2021-22 Budget Target

- Bring additional 20 lakh ha of land under MI, adoption of 6 lakh farmers for precision irrigation with crop diversification.
- At least an additional 1 lakh hectare area covered under minor irrigation in water intensive crops to enhance water use efficiency.
- 25,000 additional micro-water harvesting structures to drought proof at least 50,000 ha of land.
- Creation of 3.5 lakh ha area additional irrigation potential through AIBP to increase yield and income, replenish groundwater and enhance water availability.
- 2 lakh hectare additional cultural command area covered to reduce gap between potential and utilised.
- Creation of 400 additional water user associations and handing over additional 300 assets to water user associations with a view to strengthen participatory management.
- 100 additional number of repair, renovation and restoration of water bodies and surface minor irrigation projects completed to create 0.5 lakh hectare additional irrigation potential.

FACT TO KNOW

A recent study on effectiveness of micro-irrigation conducted through Department of agriculture, cooperation and farmers welfare in 2014 highlighted the following:

- Average increase of 8.41% in the irrigated area from the same source of water.
- Irrigation cost is reduced on an average by 32.3%.
- Electricity consumption is reduced by about 31%.
- Saving of fertilisers is in the range of 7% to 42%.
- Average productivity of fruits and vegetables increased by about 42.3% and 52.8%.
- Overall income growth of farmers on an average is 48.5%.

3. Food Processing Industry-Potential

Overview/Why This Sector

- This sector contributes 8.98% and 11.11% of gross value added(GVA) in manufacturing and agriculture sectors respectively.
- Employs the largest number of persons in formal(12.98%) as well as informal sector.
- Links agriculture and manufacturing sectors.

- Share of women in registered food processing industries is around 12.6%, and double in the unregistered ones. So it holds potential to empower women.

Issues: Consumer demand increasingly shifting towards processed products, with rising income demand for branded and healthy products is on rise.

- Processing Capability -
 - India is the second largest producer of cereals, fruits and vegetables and fish and largest producer of milk but only processes 10% of its total output. The number is lower at 2% in case of fruits and vegetables, 6% in poultry, 21% in meat products and 23% in marine products.
 - Primary processing capability is developed (e.g. turning wheat to flour) but secondary processing market where higher value addition takes place (e.g. tomatoes to ketchup) lacks scale and penetration.
 - Agricultural Exports are low and predominantly consist of raw materials. India is 14th largest exporter in the world with only 2% share in global export of food products. The perception also is that Indian products are not competitive in terms of price and quality in the export market. The food processing industry is largely domestic with exports accounting for only 12% of the total output.
- At the farm level, due to lack of awareness among the producers, the output lacks quality and safety standards. Post-harvest management at the farm gate level is inefficient and ineffective.
 - There is also lack of processable varieties.
 - Procurement and aggregation of produce at a large scale was not devised by prevalent agricultural marketing regulations. Aggregation centres close to farm-gate are also lacking.
 - Private investments are lacking.
 - Though India has developed many cold chain storages, huge gaps exist in the number of pack houses where produce is graded and sorted which is critical for quality control. Gaps exist in the availability of refrigerated vehicles to transport perishable produce.
- Sustainability -
 - While the Green Revolution has given us food security, it hasn't been able to ensure nutrition security. 39% of Indians remain undernourished.
 - Over time, agricultural incomes have grown at a slower pace than on agricultural incomes widening the income gap. 85% of Indian farmers have fallen into the small & marginal category which shows that the ideas of green Revolution were best applicable to larger farms than smaller ones as mechanisation became a viable prospect.
 - There is a mounting evidence of environmental damage because of prevalent agricultural practices.
 - Inefficiency in water use - Central Ground Water Board's (CGWB's) assessment in 2017 states that nearly 90% of all the groundwater extracted annually went towards agriculture. Overall as a

percentage of annual extractable groundwater resources, India was extracting 63.3%. The situation in Punjab and Haryana is alarming with extraction rates respectively at 166% and 137%.

- Imbalance in fertiliser use-consumption is skewed towards nitrogenous fertilisers over P and K. The fertiliser response ratio has fallen by over 3-1/2 times since the 1970s, necessitating a further expansion of fertiliser use which also raises input costs.
- Intergovernmental panel on climate change (IPCC) has predicted significant reduction in crop yields to the tune of 10 to 25% by 2050.

Initiatives:

<u>Sector</u>	<u>Schemes</u>	<u>Objective</u>
Storage & Marketing	National Agriculture Market, or e-NAM,	<ul style="list-style-type: none"> • a virtual platform which integrates wholesale Mandis across the country. • Ensures remunerative prices for farmers by facilitating online trading of agriculture and horticulture commodities. • Ensures transparent price discovery. • Avoids crowding at mandis and maintains social distancing, essential during the pandemic times.
	Agri-market infrastructure fund	<ul style="list-style-type: none"> • a corpus of Rs.2000 crores was announced in 2018-19 to upgrade agricultural marketing infrastructure.
	MGNREGS	<ul style="list-style-type: none"> • development and upgradation of physical infrastructure under the control of panchayats through MGNREGS ensures the development of Gramin agricultural markets.
	Agriculture Infrastructure Fund (AIF)	<ul style="list-style-type: none"> • With a corpus of Rs.1 lakh crore, aims at developing infrastructure at the farm gate level and aggregation points, boosting pre-processing and primary processing capabilities. • In the budget speech, it extended to boost infrastructure in the Mandi system as well.
	Others	<ul style="list-style-type: none"> • Mission For Integrated Development Of Horticulture and Pradhan Mantri Kisan Sampada Yojana are important for cold storage facilities.
Livestock	<ul style="list-style-type: none"> • Aatma Nirbhar Bharat Abhiyan 	<ul style="list-style-type: none"> • Dedicated animal husbandry development fund • Prime Minister Matsya Sampada Yojana

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Human Resource Development	<ul style="list-style-type: none"> Formation of 10,000 Farmer Producer Organisations (FPOs) 	<ul style="list-style-type: none"> Aggregates farmers, with a modern corporate structure, allowing the spirit of cooperatives with more transparency and accountability. Enhances the bargaining power of marginal farmers in terms of purchasing inputs and also selling their produce.
Large Scale Capabilities	<ul style="list-style-type: none"> Pradhan Mantri Kisan Sampada Yojana PM-Formalisation of Micro-food enterprises (PM-FME) Scheme one district one product (ODOP) Operation Green 	<ul style="list-style-type: none"> Operation Green was extended from tomatoes, onions and potatoes to 22 perishable commodities. PM-FME has an outlay of 10,000 crores.
Investment	<ul style="list-style-type: none"> 100 % FDI is allowed under automatic route in food processing industries, 100 percent FDI in manufacture of food products and for trading including e-commerce. Income tax exemptions and capital investment support. 	<ul style="list-style-type: none"> FDI can bring in the much required tech infusion across the value chain which can reduce wastage, maintain quality and enhance shelf life of food products.

RECOMMENDATIONS

- Direct selling by farmers and contract farming can help create more backward linkages between the food-processing and export sector. On farm pre-processing and processing activities will reduce wastage, and generate employment through value chain.
- Increase access to formal lending apart from the Government schemes.
- Tech-based innovative solutions - India has a vibrant agri-tech ecosystem. There are start-ups providing solutions across the entire value chain-from top advisory to Farming as a Service (FaaS) and from agri-logistics to financial services.
- Export would require adherence to global quality standards (such as Codex Alimentarius) in which developed countries have relatively stringent health standards than the internationally accepted ones – to protect their nations against possible health hazards from imports from developing countries, and to ensure traceability which ensures food safety and optimises business performance. Private investment however will be required to link rural India to large domestic and international markets.
- Lack of consumer awareness is another bottleneck. Food items like Kale, Oats, etc. are regarded as nutrient dense foods. The Indian "super foods" can be promoted as their alternatives. For instance, Amarnath can be promoted against Quinoa, Buckwheat against Oats, and Beet Greens against Kale.

4. Pradhan Mantri Gram Sadak Yojana (PMGSY)

Overview:

- The roads are classified into five categories – national highways (NH), state highways (SH), major district roads (MDR), other district roads (ODR) and Village Road (VR). The last two categories constitute the rural roads.
- In 2001, half of India's 60,000 villages did not have paved road. The PMGSY programme was started in 2000 as 100% centrally sponsored scheme to change the scenario.

Scheme Details

- Funding Pattern: 60:40 between Centre and State, 90:10 for special category states and hill states.
- Criterion:
 - The basic objective of the PMGSY was to connect all habitation with population of more than 1000 with all-weather roads by 2003. By 2007 the habitation size was reduced to 500 and plain areas and greater than 250 in desert, hilly and tribal areas. To facilitate connectivity, PMGSY permits both construction of new roads as well as upgradation of existing roads with a priority to provide connectivity to unconnected habitation.
 - For selection of tablet or habitation, the population in 2001 census is taken into account.
- Agency: The Ministry of Rural Development (MoRD) is the nodal ministry at the Centre. The national rural Road development agency (NRRDA) was set up in 2002 to provide management and technical support to states in implementing PMGSY. At the state level, the state rural Road development agencies (SRRDA) monitor the PMGSY works done by PWD or rural development department or similar agencies.
- Evolution:
 - PMGSY-II: Launched in May 2013, PMGSY-II focuses on upgradation of existing rural roads, selected based on their potential to facilitate growth and development of rural economy through better connectivity. It was proposed to cover overall 50,000 km road length by upgradation.
 - PMGSY-III:
 - Launched in summer 2019 for consolidation of through roots and major rural links connecting habitation, as well as, rural markets, education institutions, health institutions, etc. Use of modern technology in planning and implementation has been introduced.
 - Geo-referencing 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, and identify roads which may be upgraded under the programme to make villages economically efficient.
- Funding: **Cess on high-speed diesel, budgetary support, ADB loan, World Bank loan.**

Achievements:

- Till the summer 2020 a total of 6,44,915 km road length as been sanctioned and new connectivity and upgradation component under PMGSY.

- Income and Poverty-
 - With an increase in investment in rural roads by ₹ hundred billion, the incidence of rural poverty reduced by 0.87%.
 - For each Rs.1 million investment and Road 165 rural people would be lifted above poverty line (Fan, Hazzel, & Thorat, 1999). And rural roads also create many unskilled jobs.
- Increase in rural accessibility-This has also enhanced the value of land in remote areas.
- Livelihood-
 - Improved information and extension services.
 - Impacted cultivation choices resulting in positive changes in cropping patterns. Many farmers have shifted to more cash crops like fruits, vegetables etc.
 - Villagers can smoothly access chemical fertilisers, HYV seeds, pesticides, insecticides, besides etc. which might have caused increase in production of existing crops.

60% of the population still lives in the countryside, contributing more than 45% to national income. By the year 2050 more than half of our population will still be living in rural areas.

5. Digital India Initiative

Overview

The history of the e-governance initiatives dates back to 1990s. The major ICT initiatives introduced included railway computerisation, land record computerisation, etc. However they mainly focused on development of information systems. Though these e-governance projects were citizen centric, they could make less than the desired impact due to their limited features. Therefore, **Digital India Programme** was launched in July 2015 which envisions 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. The overarching mission works in partnership with multiple departments and ministries wherein each individual program stands on its own, what is also a part of the larger vision. Digital India efforts are laid down to achieve results into key focus areas -

- **Governance and Services on Demand** – Digital India aims to integrate processes and information across departments and instructions seamlessly so to help provide real-time services to citizens both online and mobile platforms, digitally enabled processes for businesses, creating a digital enabled cashless economy and creating cloud-based repository for easy access for the citizens as well as better planning and decision making with the help of GIS.
- **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 and introduction of collaborative digital platforms, availability of all documents and certificates online and availability of all entitlements through cloud.

Key Initiatives:

<u>INITIATIVE</u>	<u>OBJECTIVE</u>
Aadhaar enabled payment system (AEPS):	<ul style="list-style-type: none"> • Developed by the national payments Corporation of India (NPCI), • Payments service based on an individual's Aadhaar card • Financial transactions using Aadhaar card instead of debit/credit cards.
MyGov	<ul style="list-style-type: none"> • platform for participatory governance and space for discussions, talks, interactive polls and blogs on diverse issues related to governance and Public policy. • citizens can voice opinions in policy-making and recommendations. • Data is collected, analysed and shared with the respective ministries and departments.
National Mission in education through ICT – (NMEICT) -	<ul style="list-style-type: none"> • Centrally sponsored scheme to use ICT in education through teaching and learning processes and institutions for higher education. • bolster enrolment rates in higher education by creating a proper balance between the right content, undertaking research in imparting education and other critical areas, and increasing connectivity among other nations to share our progress and exchange of ideas. • creating and delivering valuable content through the content delivery portal Sakshat and, by avoiding recreating content already available online freely. • Dispersal of content through and EduSAT and DTH platforms. • a vision to service more than 50 crore working population with the opportunity of continuing education through personalised knowledge modules.
Pradhan Mantri Jan Dhan Yojana (PMJDY)	<ul style="list-style-type: none"> • a scheme under the national Mission on financial inclusion to provide access to financial services at affordable rates, boost financial inclusivity and encourage savings. • services accessible are savings accounts, loan services, pension, insurance • As of January 2021, more than 40 crore jan Dhan accounts opened.
Smart Cities	<ul style="list-style-type: none"> • 99 city's selected to address issues of pollution, increasing crime rates, conditions, poor living standards by creating better administrative and infrastructure systems using technology. • The mission promotes conceptualisation and realisation of cities with strong basic infrastructure and promote sustainable, safe and inclusive development for the residents.

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E - Pathshala by NCERT	a platform to disseminate educational resources - textbooks, audiovisual resources, periodicals, supplements, teacher training modules and a variety of print and non-print materials through mobile app and website.
E-prison	A suite developed by NIC as a cloud-based product to be a one-stop solution for citizens to - digitally apply for visitation, note grievances, buy goods created by prisoners, etc. Prison management system uses it for surveillance and management of prisoners, administrative tasks, resource optimisation, etc.
Farmer Portal	One-stop destination for information on agriculture, risk management, animal husbandry, aquaculture, weather, programmes and schemes.
Goods and services tax network (GSTN)	GSTN manages the IT system of the GST portal. The network helps the government follow financial transactions and helps the taxpayers with GST registration, maintenance of tax details, etc.
Khoya Paya	<ul style="list-style-type: none"> • A platform is developed by Ministry of women and child development along with the Department of electronics and information technology • Citizens can report <u>missing and found children</u> with the help of text, photos, videos and other smart means. • The portal can be linked to the CCTNS project to help apprehend criminals as well as solve cases of missing minors.
Kisan Suvidha	A mobile application to disseminate information regarding weather, market prices, plants addition, inputs, weather alerts, godowns and storages and market related information such as conducive markets, market rates, quantity demands, etc. to farmers.
National knowledge network (NKN)	<ul style="list-style-type: none"> • a pan India network to connect India's universities, libraries, labs, research institutes to improve inter-communication, stimulate research and create next-gen apps and services. • encourages connectivity of research and education network between India and SAARC nations. • facilitates collaboration between educational networks such as TEIN4, GARUDA , CERN and Internet2 to encourage exchange of scientific database and access to research facilities remotely.
Online labs (OLABS)	a virtual learning platform created to help students conduct over 130 virtual lab practical to grasp concepts in chemistry, physics, biology from class 9th to 12th, and lessons in English and maths for class 9th and 10th. The experiments are a mix of interactive simulations, animations and videos which can be accessed anywhere. The content is wide ranged, serving curriculum is from CBSE and state boards.

Project monitoring website for E-Courts	<ul style="list-style-type: none"> • aid courts with automated decision making and decision support system. • implemented across thousands of courts in metros, state capitals and district • focuses on utilisation of technologies such as migration of information to cloud, big data mining and processing through Blockchain technology and AI.
Swachh Bharat App	<ul style="list-style-type: none"> • NICs pilot project to oversee the authenticity of the implementation of toilet construction under the Swachh Bharat Abhiyan. • uses AI to ascertain the beneficiary through facial recognition software and digitally affirm the state of toilets, and crosschecks photos with the GPS coordinates shared by the smartphones.
Unified mobile application for new-age governance UMANG	<ul style="list-style-type: none"> • developed by the Ministry of electronics and information technology and national e-governance division (NeGD) to promote e-governance, facilitates over 1200 central and state e-services. • The app is multilingual and accessible through smart phones,, tablets and desktops through SMS, IVRs.
Aadhaar	<ul style="list-style-type: none"> • world's largest biometric-based identification system. • Is the heart of social and financial inclusion and public service delivery through seamless integration of various databases along with AI and machine learning to end official recognition, voice enabled chat bots and cloud-based systems. E.g., Platforms like Jeevan Pramaan to verify pensioners, national scholarship portal also use it.
Government e-marketplace (GeM)	<ul style="list-style-type: none"> • an e-marketplace initiative by national Public procurement portal • users of this marketplace state and central government ministries and departments, PSUs, local bodies and autonomous institutions.
Crime and criminal tracking network & systems (CCTNS)	<p>a project under national e-governance plan of the Gol to create a system comprehensively integrated to enhance the efficiency of policing through a nationwide networking infrastructure for the evolution of IT enabled highly efficient tracking system around the investigation and detection of crimes and criminals. This is aimed at expediting exchange of information across police departments of all 35 states/UT and delivering better services to citizens.</p>
Digital Payment	<p>India's unique payment systems such as BHIM-UPI and BHIM-Aadhaar are getting recognised globally. In 2020, India ranks first in digital payment transactions worldwide. The combination of Jan-Dhan bank accounts, mobile phones and digital identity through Aadhaar is helping direct benefits transfer.</p>

6. Sustainable Rural Enterprise

Overview

Rural areas account for about 52% of the small MSMEs and 45% of employment in the unincorporated non-agricultural enterprise sector during 2015-16. During this pandemic the rural enterprise sector witnessed demand slump, liquidity crunch, labour shortage, in adequate access to formal institutions, rise in input cost on raw-materials, unsold stock, etc.

Issues

- Most of these enterprises are solo enterprises operating through family labour.
- Lack of access to formal institutions, including finance, market (information, quality, branding, value chains, linked with the market, both local and global), technology innovations, infrastructure (transport, water, energy, logistics, human capital), etc.
- Lack of education and inadequate skill level of workers and owners
- Complications in doing business, regulatory and compliance issues
- 90% of the rural located enterprises do not have access to computer or internet

Pathway

- **Formalisation:** There is a need to sensitise rural entrepreneurs about formal institutions and the programmes and schemes meant for them. It is also important to simplify regulatory compliance formalities for rural start-ups.

PM formalisation of micro-food processing enterprises scheme (PM-FME)

- Started by the Ministry of food processing industry, to provide financial, technical and business support for existing micro-processing food enterprises.
- Skill training and handholding support provided to prepare bankable business plan
- Support towards capital investment, common infrastructure such as common facility centres and branding and marketing are also provided to SPOs, SHGs and PCs to formalise and grow.
- Support for registration for GST, FSSAI hygiene standards and Udyog Aadhaar.

- **Platformisation:** Several IT enabled platforms were started during the pandemic

Name of the portal	Ministry/Department	Key services offered
Creation and harmonious application of modern processes for increasing the output and national strength (CHAMPIONS)	Ministry of MSMEs	<ul style="list-style-type: none"> • To help the MSME in finance, raw materials, labour, permissions, etc. • To help the MSME capture new opportunities including manufacturing of medical items and accessories. • To identify the sparks, that is, the bright MSMEs which can become national and international champions.

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MSME "Sampark"	Ministry of MSMEs	<ul style="list-style-type: none"> • Provide a digital platform to connect jobseekers with enterprises seeking trained human resources.
MSME "Sambandh"	Ministry of MSMEs	<ul style="list-style-type: none"> • Public procurement policy monitoring portal
MSME "Samadhan"	Ministry of MSMEs	<ul style="list-style-type: none"> • To deal with payments and dues
MSME idea Portal	Ministry of MSMEs	<ul style="list-style-type: none"> • Bank of schemes, ideas, innovations and research
Udyamimitra	Small industries development bank of India (SIDBI)	<ul style="list-style-type: none"> • To provide easy access of financial and non-financial service needs • To provide "end to end" solutions not only for credit delivery but also for the host of credit plus services by way of handholding support, application tracking, multiple interface with stakeholders – lenders, service providers, applicants.
Women Entrepreneurship Platform	Niti Aayog	<ul style="list-style-type: none"> • Providing services in six main focus areas: community and networking, funding and financial assistance, incubation and acceleration, compliance and tax assistance, entrepreneurs skilling and mentorship, marketing assistance
National scheduled caste and scheduled tribe hub scheme	Ministry of MSMEs	Registration; mobilisation in capacity building of tribal SHGs; business plan and financial modelling for PCs; financing tribal SHG driven enterprises; market development, supply chain linkages; procurement, processing technologies and infrastructure.

- Other initiatives have also been taken to empower small and micro enterprises.

<u>Initiative</u>	<u>Objective</u>
Digital unlocked	<p>An initiative by Google in association with FICCI and Indian school of business, to develop Indian businesses grow exponentially with the key objectives:</p> <ul style="list-style-type: none"> • build capacity and equip the start-ups, SMEs and innovators with the necessary skills for utilising the power of internet • Create their online presence, launching and executing cost-effective targeted digital marketing campaigns

	<ul style="list-style-type: none"> Reach out to a wider audience, increasing the sales volume, keeping a consistent connect with the potential customers, staying competitive in the market place.
Digital Saksham initiative	started by CII – Master card – NIMSME, to educate and train micro and small business owners and entrepreneurs to integrate into the digital economy and access credit, expand their market access, diversify the customer base, digitise financial operations and solidify their supply chain.

Subsidised digital connections, mobile handsets and other electronic gadgets may need to be provided for the rural SMEs, specially women and underprivileged entrepreneurs from SC and ST communities. Such digital services may also be provided in common service centres or Me Seva service centres or in Panchayat offices.

- Mentoring and Handholding:** This may include digitisation and formalisation, availing of government loans, subsidies or other benefits, ensuring compliance with regulations, adding partnership with retail marketing platforms and digital payment platforms, etc. There are a large number of agencies such as RSETI, EDI, and MSME Tool Rooms (known as MSME Technology Centres), ITIs, District industries Centres (DICs), banks and industries associations and Chambers to provide handholding with respect to entrepreneurship development, credit counselling, formulation of business plan, financial literacy, vocational training ,etc. Awareness again here is an issue.

An expert committee set up by RBI has recommended focus attention to financial and operational leads through handholding by both banks and government. It recommended to increase the number of MSME facilitation council (MSEFC) particularly in larger states. It also recommended to set up enterprise development centres (EDCs) with DICs and further enable entrepreneurs to make their enterprises full-fledged and self-sustaining.

Going online as leaders (GOAL)

- A mentorship-led entrepreneurship development program initiated by Ministry of Tribal Affairs in partnership with Facebook.
- It aims to provide mentorship to tribal youth through digital mode.
- It supports tribal youth and women to help them acquire skills and knowledge through mentorship in various sectors including horticulture, food processing, beekeeping, tribal art & culture, medicinal herbs, etc.
- it operates through a meeting portal for mentor and mentee.
- All selected beneficiaries will get smartphones and internet access (for one year) by Facebook and get connected with a designated mentor to get training on digital literacy, life skills and leadership and entrepreneurship.
- The programme will also create awareness amongst tribal beneficiaries about various schemes initiated by central and state governments for welfare of STs as well as the fundamental duties.

- Community resource persons (CRPs) led enterprise promotion:**

- The creation of a cadre of mentors for entrepreneurship promotion has been included under various livelihood programmes including Start-up Village entrepreneurship programme (SVEP) project under DAY-NRLM which is focusing on the development of CRP for entrepreneurship promotion of (CRP-EP) as local level mentors for promoting rural women to start their own business.
- Professional assistance for development action (PRADAN), Kudumbashree, SEWA, etc. have started a large number of CRP driven programs. Odisha tribal empowerment and livelihoods programme (OTELP) also implemented this model to provide land to landless households and 36 villages in three districts of Odisha.
- There is a large cadre of CRPs such as Kisan Sakhi/Krishi Sakhi, Pasu Sakhi (livestock CRP), NTFP CRP, Matsya Sakhi(fisheries CRP), Udyog Sakhi(value chain CRP), CRP-enterprise promotion CRP-EP, bank Mitra, e-CRP s, tablet Didi, Patrakaar Didi and so on. They can provide training and act as a medium for creating backward – financial institutions, and forward – markets and clientele, linkages for the businesses.

Initiative	Key Focus Areas
Stree Nidhi, women's credit cooperative Federation	<ul style="list-style-type: none"> - Engages SHG members as agents who reportedly earn an average of Rs.15,000 per month: - offers a range of services including distribution of government social security schemes in a city related transactions. These agents are able to deliver financial services at the doorsteps of members.
Haqdarshak	<ul style="list-style-type: none"> - Imparting training to village level women/entrepreneurs called Haqdarshaks to use the app (on a smartphone) to reach out and help BPL families to get various government schemes.
Good Cases of CRP-led Initiatives	

- [Panchayat as a hyper local platform](#): The Gram Panchayat development plan (GPDP) can play a direct role in identifying areas and activities by their respective business potential and devise a mechanism to prioritise resource allocation and helping those entrepreneurs and rural artisans who suffered especially during the pandemic times. The Panchayat Secretariat can play a role of 'hyper local platform 'or a 'point of contact' by connecting these entrepreneurs with various govt. schemes like Central government's MSME package, PM Sunidhi first Street vendors, PM Garib Garib Kalyan Yojana, etc. and help them to get access to support measures available on IT enabled portals or websites.