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Kurukshetra seeks to carry the message of Rural Development to all people. It serves as a forum for free, frank and serious discussion on the problems of Rural Development with special focus on Rural Uplift.

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Editorial

There can be no two opinions on the fact that developing infrastructure has a positive impact on per capita income and employment in the rural areas. Besides, a better infrastructure means easy access to resources and better quality of living. In the words of PM Shri Narendra Modi, “Good Infrastructure ensures ‘ease of living’ bringing comfort and convenience”. For instance, if the people get clean drinking water, it will reduce incidence of people falling sick from water borne diseases leading to good health and productivity. Development of power, water, health facilities, road infrastructure increases productivity, savings, income, better health, increased attendance in school and so on. With increased connectivity, small businesses get a boost and farmers get access to facilities of urban areas which in turn promote overall growth of the rural community. Therefore, development of rural infrastructure is a sine qua non for significantly improving the quality of human life and phenomenally accelerating the process of agricultural development.

Prospects for development in rural India are on an increasing trajectory with focused attention of government on infrastructure development as promised in the budget this year. Various government initiatives have been unprecedented in transforming the rural scenario.

Under Bharatmala Project, an integration of many other schemes, projects and programs are being taken up with a target to cover 25000 km of roads and bridges. Union Minister for Road Transport & Highways, Shri Nitin Gadkari has said that special emphasis will be given on providing connectivity to far-flung rural areas including the tribal and backward areas. The Telecommunication sector has grown phenomenally with growth in e-governance, cashless transaction in banking and financial services, trade, education, health, agriculture, travel, tourism, logistics, transportation and citizen services sector. Housing as a basic need and right is reflected in the Pradhan Mantri Awas Yojana - (Gramin) which targets 1 crore houses by March, 2019, with a provision of bank loan up to Rs 70,000 and provides skilling for 5 lakh rural masons by 2019.

Swachh Bharat Abhiyan has been a revolutionary initiative for embedding the sense of sanitation, hygiene and health and exhibited remarkable progress with a 85 % coverage in 2018-19. Works undertaken under the Mahatma Gandhi National Rural Employee Guarantee Act (MGNREGA) are primarily rural infrastructure development works namely through watershed development, agriculture development works, drinking water and sanitation related works. PMGSY, the rural road connectivity scheme, has made considerable contribution in connecting far flung and scattered areas of the country. Out of a total of 1,78,184 eligible habitations under PMGSY, 1,45,158 habitations have been connected bringing the total habitations connected to 82%. Village electrification targets under ‘Deen Dayal Upadhyaya Gram Jyoti Yojna’ (DDUGJY) have been achieved well before time. The Government has already launched ‘Pradhan Mantri Sahaj Bijli Har Ghar Yojana’- ‘Saubhagya’ to provide the last mile connectivity and service connections to all remaining households in both rural and urban areas to achieve universal household electrification.

Rural infrastructure assumes great importance in India because of the country’s predominantly rural nature, the crucial linkages of infrastructure to economic growth, poverty alleviation and human development. Infrastructure is indeed correlated to economic growth in rural areas. Studies show that low per capita income correlates with lack of infrastructure. Therefore, infrastructure which can be a driver of rural growth, is often not available in rural areas. But the situation has now changed. The government is guided by its mission to strengthen agriculture and rural development and its focus is on, among others, construction of rural infrastructure. It is no doubt an important initiative for reducing the gap between rural and urban areas and improving the quality of life of people in rural areas.

CREATING EFFICIENT TRANSPORT INFRASTRUCTURE FOR INCLUSIVE GROWTH

Nitin Gadkari

I am very hopeful that very soon even the remote areas of the country will start reaping the benefits of the world class transport architecture that we are creating. Farmers and artisans will be able to reach their produce to markets, people will have to travel shorter distances, and spend less time to reach their desired destinations. Delivery of services to far flung areas will improve greatly, and most importantly, these developments will throw open the much needed job opportunities. We will fulfil our dream of inclusive growth.

An efficient transport infrastructure is one of the biggest enablers for socio-economic growth of a country. It provides the essential linkage between resources centres of production and the market. It is also a key factor for promoting balanced regional growth by ensuring the delivery of goods and services to the remotest parts of the country.

When our Government took over in 2014, infrastructure was clearly defined as one of our foremost priorities. Growth in India had long been hampered by the lack of good infrastructure. On the transport front, movement of goods and people was slow and inefficient, penetration of the transport network in remote areas was inadequate. The slow movement of traffic was leading to valuable loss of time and heavy pollution. Precious lives were being lost in rampant accidents. The

extensive network of rivers with their tremendous navigational potential remained unutilized. We decided it was high time all this was rectified.

In the last four years, we have gone all out in our efforts to modernize, overhaul and expand the country's transport network and synergise the investments in roads, waterways and railways. Our objective is to develop an integrated transport ecosystem that is efficient and cost-effective, reaches the remotest corner of the country, is easily accessible, safe, and environment friendly.

The Highways Revolution:

A highways revolution is fast unfolding on the Indian landscape. National Highways are now being built at the rate of 27 kms per day as opposed to just 12 km per day in 2011. The Road



More roads and highways, greater transformation

- Expenditure on road construction substantially up from Rs. 32,483 crore in 2013-14 to Rs.1,16,324 crore in 2017-18
- National highway network expanded from 92,851 km in 2013-14 to 1,20,543 km in 2017-18
- Speed of construction has gone up to 27 km per day in 2017-18 against 12 km per day in 2013-14
- 2,000 km of coastal connectivity roads identified for construction and development
- India's longest road tunnel - the Chenani - Nashri tunnel in Jammu opens for public
- India's longest bridge- the 9.15 km long Dhola-Sadiya Bridge over River Brahmaputra in Assam dedicated to public on 26th May 2017. The bridge has ensured 24x7 connectivity between upper Assam and Eastern part of Arunachal Pradesh
- Bridges over Narmada at Bharuch and Chambal at Kota open for public use
- 1000 km of expressways to come up along high density corridor

Transport & Highways Ministry has awarded work for constructing 51073 km of National Highways in the last four years, which is double the 25158 km length awarded between 2010 – 2014 under the previous Government. We have constructed over 28531 km of NH as compared to 16505 between 2010 – 2014. This year we aim to construct nearly 16000 km of National Highways, which will be the highest ever India has constructed in a year. Prime Minister Shri Narendra Modi recently inaugurated two world class expressways in NCT Delhi – the *Eastern Peripheral Expressway* and Phase I of *Delhi Meerut Expressway*. Many more such expressways are coming up in different parts of the country to reduce travel time for goods and people and bring down pollution. Bridges and tunnels are being built in many places to shorten distances, and bring the hitherto remote and inaccessible areas within easy reach. The *Bhupen Hazarika Bridge* over River Brahmaputra in Assam, the *Chenani-Nashri Tunnel* in Jammu & Kashmir and the *Kota Bridge* over Chambal are just a few examples.

The Road Transport & Highways Ministry launched its ambitious programme Bharatmala last year. *Bharatmala* is going to be a game changer for the country. The programme aims to enhance the efficiency of road transport by building 50 Economic Corridors, Feeder and Inter Corridors, Border, Coastal and Port Roads and Expressways. It will provide improved connectivity to areas of economic activity, places of religious and tourist interest, border areas, backward and tribal areas, coastal areas and trade routes with neighbouring countries. A total of around 66000 kms will be taken up under the programme, of which 24,800 kms are being taken up in Phase-I at a cost of Rs 5.35 lakh crore. Phase I will be completed by 2022.

With the completion of *Bharatmala*, all 550 districts in the country will get connected to national highways as against 300 districts at present. Around 70-80% freight will move on national highways as against 40% at present. The new corridors under the programme have been chosen in such a way that travel time will get reduced by 20-25 per cent. 35 Multimodal Logistics Parks will also be built at a cost of Rs 32,853 crores. These parks will have go-downs, cold storages and other services required for efficient transport of goods. They will also have access to multi-modal

transport including roadways, railways, waterways and airways wherever feasible. So a consignment of goods can choose the most cost effective mix of transport modes.

The expansion of National Highways network, building of bridges and tunnels to cut circuitous routes, the logistics parks and multi modal transport mix will give a big boost to inclusive economic growth. It will give farmers and other producers even in remote areas access to markets, which was not possible so far. This will bring about marked improvement in the quality of living of people across the country. This will also create much needed jobs for people. *Bharatmala* will be a major driver for economic growth in the country. It is estimated that more than 35 crore man-days of employment will be generated under Phase-I of the programme.

Promoting Green Fuel:

Another priority with us is to make the highways sector environment friendly. For this, we are promoting the use of clean fuels like ethanol, methanol, bio diesel, Bio-CNG, and electricity. Besides bringing down pollution, these fuels, produced indigenously from agricultural waste, plants like bamboo, non-edible oilseeds, or municipal waste, will help reduce the country's huge import burden. Nagpur city is running buses on 100 percent bio ethanol and Bio CNG derived from methane from sewage water. This can be replicated in other places too. This will also generate employment and boost the economy of rural areas, including the North East and the barren wastelands of the country.

Safety on Highways:

India sadly has the highest number of road accident fatalities in the world. This is most unfortunate, and we are committed to bring this down by 50 per cent by 2020. 779 accident black spots have been identified across the country and are being rectified, safety features are being incorporated in road designs at DPR state and safety audit of roads are being carried out. We have notified improved vehicular safety standards and have unrolled a scheme for running driver training schools. We are running a scheme for setting up driver training schools in every district.

The Motor Vehicle (Amendment) Bill has been passed by the Lok Sabha, and awaits passing

by Rajya Sabha. The Bill addresses road safety issues by providing for stiffer penalties, making fitness certification of vehicles and issue of drivers licenses transparent by computerizing it, statutory provisions for protection of Good Samaritans and recognition of IT enabled enforcement system.

Ports as Engines of Growth:

Our Government launched the *Sagarmala* programme, and declared 111 waterways as National Waterways in order to harness the potential of our seas and rivers. *Sagarmala* envisages industrializing ports areas so that they become engines of growth. There is a thrust on the setting up of Special Economic Zones (SEZs) and 12 Coastal Economic Zones around Major Ports. In addition, there are projects for modernizing ports so that they become more efficient and profitable, enhancing connectivity of ports with the hinterland through road, rail and waterways and preparing the local population with necessary skills and infrastructure for the job opportunities that will open up.

Sagarmala includes 577 projects worth more than Rs 87 lakh crore, in 19 states and UTs. More than 70 per cent of these projects are at various stages of implementation. SEZ at JNPT and Smart Industrial Port Cities at Kandla and Paradip



Jal Shakti for Rashtra Nirman

Sagarmala Project

- Includes over 500 projects with infrastructure investment of more than Rs. 8 lakh Crore

Towards port-led development

- Marked improvement in efficiency parameters of major ports during April to December, 2017. Average turn-around time improved from 73 to 65 hrs
- Operating surplus of major ports has increased by 11% as compared to corresponding period of last year

are under implementation. One Mega Food Processing Park has been completed at Satara and two are under implementation in Andhra Pradesh. 8 Electronic manufacturing clusters and 3 power clusters are coming up in various states. JNPT has set up multi skill training centre that will train 1500 persons annually. 26 fishing harbour projects are planned in 9 coastal states to improve livelihood of fishermen.

Coastal shipping and Cruise Tourism are also poised for a big leap ahead. The Government has taken many policy initiatives and is creating infrastructure to promote both. We have signed an MoU with Bangladesh for coastal movement of goods. This will open up economic opportunities in the North Eastern states. In 2013-14 only 95 cruise vessels came to India, in 2016-17 there were 166. The number is likely to increase manifold.

It is expected that *Sagarmala* will save Rs 35000-Rs 40,000 as logistics cost annually and will boost exports by about USD 110 billion . The programme is also expected to generate more than one crore direct and indirect jobs in the maritime sector, the factories that come up in port areas, the service industry, fisheries, tourism and many more.

Making Water Transport a Reality:

Making our waterways navigable is another major priority for us. We have declared 111 waterways as National Waterways and are developing them for navigation. Water transport is cheaper than road and rail transport, and also less polluting. Transportation of goods over waterways will reduce logistics cost of our products, making them more competitive.

Work is already under implementation over 10 waterways including Ganga and Brahmaputra, Barak, Krishna, Mahanadi, Amba, Narmada etc. The World Bank aided, Rs 5369 crore Jal Marg Vikas project on Ganga is progressing at tremendous speed. One Multi Modal Terminal at Varanasi will be ready in by October this year and those at Sahibganj and Haldia and Navigational Lock at Farakka are also at advanced stages of construction. The project is expected to generate 46,000 direct and 84,000 indirect jobs.

We have already started Roll On- Roll Off (Ro-Ro) services on several waterways. These

Bharatmala Pariyojana: Phase-I

New umbrella program worth Rs. 5,35,000 crore for expanding highways sector with multi modal integration

Setu Bharatam Project for safer roads

- Launched with an aim to ensure road safety by making all National Highways free of railway level crossings, by 2019, by building railway over bridges/ under passes
- Railway over bridges/under bridges to be constructed with an outlay of Rs. 20,800 Crore

services are proving to be very effective means of transport for local goods like fruits and vegetables as they reduce travel time between places that were earlier connected through circuitous routes. Ro- Ro service on NW -2 or River Brahmaputras in operation between Dhubri and Hatsingimari. Over 36000 passengers and 450 trucks have been moved on this stretch in the last 6 months, saving

230 Km of road travel. National Waterway-16 (River Barak) even has international movement of cargo to Bangladesh.

I am very hopeful that very soon even the remote areas of the country will start reaping the benefits of the world class transport architecture that we are creating. Farmers and artisans will be able to reach their produce to markets, people will have to travel shorter distances, and spend less time to reach their desired destinations. Delivery of services to far flung areas will improve greatly, and most importantly, these developments will throw open the much needed job opportunities. We will fulfil our dream of inclusive growth.

(The author is Union Minister for Water Resources, River Development and Ganga Rejuvenation, Shipping, Road Transport & Highways, Government of India.

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Ministry of Road Transport and Highways: Green Initiatives

Green Highways Division in NHA: NHA has set up a Green Highways Division and has planted over 2.5 lakh trees planted last year in order to make National Highways green, clean and pollution free.

Linking of Construction of Highways with digging of Water Bodies in drought affected areas: Keeping in view that many parts of the country face drought conditions and restoration of ponds, check dams, water tanks offers an age-old system of water conservation/ ground water recharging, instructions have been issued by the Ministry to the agencies responsible for construction of National Highways to advise their contractors/ construction agencies through their field officers to approach the concerned District Collectors/ Sub-collectors/ Water Conservation Departments to obtain a list of any such villages/ rural areas where de-siltation/ revival of existing ponds/ water bodies or digging of areas for creation of new water bodies are required and procure the requisite soil for road embankments by digging/ de-silting the existing village ponds/ water bodies, subject to such soil being found suitable for the embankment purposes. This arrangement would help in restoration of such dried-up water bodies without any charge and the contractors will be able to source the requisite soil without any payment.

Bridge cum Barrage: The Ministry has sought proposals from state PWDs for making bridge-cum-barrage on NHs so as to serve the dual purpose of crossing the water body and storing water on the upstream/ down stream side to serve as water reservoirs/ ground water recharging bodies. This will help better and optimum utilization of water for various purposes.

Swachhta Pakhwada: Swachhta Pakhwada was observed from 16th to 31st July, 2017 under the Swachh Bharat Mission (SBM), under which, the construction of toilets and provision of litter-bins at 371 NHA Toll Plazas, and additional activities including provision of temporary toilets and drinking water facilities at toll plazas, cleaning of roads and drains, proper management of road construction sites, removing litter etc. was carried out.

Measures undertaken to combat vehicular pollution: Emission norms for Tractors and Construction Equipment vehicles have been notified for low Sulphur fuel, to be implemented from 01st October, 2020. The Electric vehicles are being given a big push by the Ministry. India's first multi modal Electric Vehicle passenger transport project was launched in Nagpur with integrated solution of buses, taxis and E-Rickshaws. The E-Rickshaws have emerged as a cost effective, environment friendly solution for improving last mile connectivity. These are exempted from obtaining permits. To promote last mile connectivity for metro passengers, 1000 number of E-Rickshaws were launched at Gurugram, Haryana.

Bharatmala Pariyojana: A Stepping Stone Towards 'New India'

The development of any nation depends on the transportation networks and the ways in which they are being maintained. The same holds true for the development of a huge and populous nation like India. For connecting the areas and maintaining smooth flow of traffic, the construction of new and developed roads are a must. The same will be achieved with the implementation of the Bharatmala project. Under the scheme, a host of new roads will be laid down in the nation.



Bharatmala Pariyojana is a new umbrella program for the highways sector that focuses on optimizing efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps through effective interventions like development of Economic Corridors, Inter Corridors and Feeder Routes, National Corridor Efficiency Improvement, Border and International connectivity roads, Coastal and Port connectivity roads and Green-field express ways. The implementation of a pan-nation scheme to improve the road network was the idea of the PM. All key aspects of the scheme will be managed by the Road Transport and Highways Ministry of the country.

Highlights of Bharatmala Pariyojana:

- Improvement in efficiency of existing corridors through development of Multimodal Logistics Parks and elimination of choke point.
- Enhance focus on improving connectivity in North East and leveraging synergies with Inland Waterways.
- Emphasis on use of technology & scientific planning for Project Preparation and Asset Monitoring.
- Delegation of powers to expedite project delivery - Phase I to complete by 2022.
- Improving connectivity in the North East.

Paving the Roads of Development

BHARATMALA PARIYOJANA: PHASE-I
₹5, 35,000 crore for expanding highways sector with multi modal integration

SETU BHARATAM PROJECT FOR SAFER ROADS
Making all National Highways free of railway level crossings, by 2019, by building **Railway Over Bridges/ Under Passes**
Total outlay of ₹20,800 Crore

Key Features:

- **Improving the quality of roads:** The launch of the scheme has been done for bringing a new wave of development in the nation in the form of well-maintained and developed roads. Under this project, the construction of roads, in all parts of the nation will be undertaken.
- **Total road construction:** As per the draft of the scheme, government and the ministry will strive to complete new roads, which will add up to a whopping 34, 800 kms.
- **Integrated scheme:** The Bharatmala is the name that is given to the road development and it will include many other related schemes as well. With

the completion of all the schemes, the overall success of the scheme will be guaranteed.

- **Total tenure of the program:** The central government has the plans of finishing the scheme within a span of five years. Thus, all is set for finishing the first phase before the end of 2022.
- **Segmentation in phases:** Due to the sheer magnitude and spread of the scheme, it will be divided into seven distinct phases. As of now, the first phase is under construction.
- **Construction on a daily basis:** To finish the first phase in time, the respective department has made efforts of constructing at least 18 km of path on a daily basis. To beat the clock, continued efforts are being made to raise it to 30 km/day.
- **Different categories of road construction:** It has been highlighted in the official draft of the scheme that to provide better connectivity, the construction of various categories of roads will be undertaken.
- **Multi-source of funding:** One source will not be enough for funding a mammoth project. Thus, the government will have to depend on other sources for generating adequate money to meet the expenses.



Budget Allocation: A total of around 24,800 kms are being considered in Phase I of Bharatmala. In addition, Bharatmala Pariyojana Phase -I also includes 10,000 kms of balance road works under NHDP, taking the total to 34,800 kms at an estimated cost of Rs.5,35,000 crore. Bharatmala Phase-I is to be implemented over a five year period of i.e. 2017-18 to 2021-22.

Bharatmala Project Category:

- **Economic Corridor:** As per the guidelines of the road construction project, the construction of 9000 kms of Economic Corridors will be undertaken by the central government.
- **Feeder Route or Inter Corridor:** The total length of the roads, which fall under the Feeder Route or Inter Corridor category, is a whopping 6000 kms.
- **National Corridor Efficiency Improvement:** 5000 kms of roads, constructed under the scheme will fall in the category of National Corridor for the better connection between roads.
- **Border Road and International Connectivity:** Connecting the cities and remote areas, which are situated in the border regions, the project has kept provision for constructing 2000 kms roads that fall in the Border Road or International Connectivity category.
- **Port Connectivity and Coastal Road:** To connect the areas that are dotted along the shorelines and important ports, the central government has ordered the construction of 2000 km of roads.
- **Green Field Expressway:** The main stress will be given on the construction and development of Green Field Expressway for better management of traffic and freight.
- **Balance NHDP Works:** Under the last segment, the project will see a construction and maintenance of about 10,000 kms of new roads.

(Source: india.gov.in)

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RURAL INFRASTRUCTURE : AN OVERVIEW

Dr P Kesava Rao, Dr V Madhava Rao

Infrastructure development in providing modern facilities of roads, housing, communication, banking etc has poised the country at the threshold of an elite and developed nation. The Central Government's priority in irrigation infrastructure development supported by MSP and crop insurance, health infrastructure in terms of AIIMS and Health Insurance, Stand Up and Start Up initiatives, Cashless Transaction, Direct Benefit Transfer, e-governance and m-governance, and the like, are forward looking futuristic sustainable economic and social development initiatives

Infrastructure is critical for a country's development and a country's development and progress is judged by the quality of infrastructure it has. Infrastructure could be private and public, physical and services, social and economic. Economic infrastructure could be transportation, communication, power, irrigation, and the like while that of social infrastructure comprise of education, health, drinking water and sanitation, housing, etc. In addition to the development of these sectors, the infrastructure development brought in the efficiency of investment, manufacturing competitiveness, exports, employment, urban and rural development, quality of life and a host of benefits for the country.

The Rangarajan Commission (2001) defined infrastructure as having natural monopoly, non-tradability of output, bestowing externalities on society, high sunk costs or asset specificity, non-rivalness in consumption and possibility of price exclusion. The Rakesh Mohan Committee Report (1996) and the Central Statistical Organisation (CSO) presents infrastructure as Electricity, gas, water supply, telecom, roads, industrial parks, railways,

ports, airports, urban infrastructure and storage as infrastructure. The RBI (2007) looked infrastructure as power, telecommunication, railways, road and bridges, sea port and airport, industrial parks and urban infrastructure (water supply, sanitation and sewage projects). The Insurance Regulatory and Development Authority (IRDA) (2008) defined infrastructure to include Road, including toll road, bridges or a rail system, Port, airport, inland waterways or inland port, Water supply project, irrigation project, water treatment system, sanitation and sewerage system or solid waste management system, telecommunication services whether basic or cellular, domestic satellite services, network of trunking, broadband network and internet services, an industrial park or special economic zone, transmission or distribution of power, construction for preservation and storage of processed agro-products, perishable goods such as fruits, vegetables and flowers including testing facilities for quality, educational institutions and hospitals, and any other public facility of similar nature as may be notified by the authority in this behalf in the Official Gazette. The Income Tax Department treats electricity, water

supply, sewerage, telecom, roads & bridges, ports, airports, railways, irrigation, storage (at ports) and industrial parks/SEZ, as infrastructure. The World Bank treats power, water supply, sewerage, communication, roads & bridges, ports, airports, railways, housing, urban services, oil/gas production and mining sectors as infrastructure.

The Government of India has taken the infrastructure sector, mainly highways,



renewable energy, housing, digital infrastructure and urban transport, as a priority sector, for which an allocation of Rs 5.97 lakh crore has been earmarked under the infrastructure sector in the Union Budget 2018-19.

Road Infrastructure:

Road network has been the fulcrum of country's economy, for transportation of goods, services, agriculture produce, travel and connectivity, and act as a growth centre. The promotion of all weather qualitative durable road network ensures faster economic and social gains, trade flows, integration of markets.

The Pradhan Mantri Gram Sadak Yojana (PMGSY) primarily aims at providing all weather road connectivity to unconnected villages with about 82% connected by December 2017 and the remaining 47,000 habitations are targeted to be completed by March 2019.

The total expenditure on the Ministry of Road Transport and Highways for 2017-18 is around Rs 64,900 crores, which is 24% higher than the revised estimates for 2016-17. In 2017-18, of the total expenditure, the highest allocation is towards roads and bridges at 63%, which is followed by allocation towards the National Highways Authority of India at 37%, with revenue expenditure of Rs 10,723 crore, and capital expenditure at Rs 54,177 crore.

Invigorating India's villages with the Shyama Prasad Mukherji Rurban Mission

- To create 300 such Rurban growth clusters over the next 3 years, which will be ODF, green and also create agro based and thematic clusters based on skilled manpower and access to economic opportunities
- 267 clusters already identified. 153 Integrated Cluster Action Plans (ICAPs), which are the blue prints of investment for each cluster, approved for 29 States and one UT of Dadra & Nagar Haveli

Connecting villages through Pradhan Mantri Gram Sadak Yojana

- Enhanced road connectivity in every village by 2019. Already, rural road connectivity up from 56 per cent in 2014 to 82 per cent, including in villages mostly in far flung and inaccessible areas
- 73,727 km of roads to be constructed in the immediate future

India has one of the largest road networks in the world with about 47 lakh km of roads, which includes National Highways (NHs), Expressways, State Highways (SHs), district roads, PWD roads, rural roads, etc. Road infrastructure caters to transport over 60% of total goods and 85% of total passenger traffic. An ambitious road and highways development program under the Bharatmala Project aimed at integrating many other schemes, projects and programs, targeted to cover 25000 km of roads and bridges, with development of about 7000 km State roads along coastal area, border area, with special focus on connectivity of non-major ports, roads for backward areas, religious and tourist places connectivity programme, Setubharatam Pariyojana aimed at elimination of the Railways crossing in India by constructing 1500 major bridges and 200 Railway over Bridges (RoBs) or Railway under Bridges (RuBs) by 2019, ensuring high speed road vehicular movement and train movement, to be completed by 2019, three years before the completion of entire Bharatmala Project in 2022, district headquarters connectivity scheme for development of 9000 kms of road, to be declared as National Highway and to provide better connectivity between district headquarters.

Communication Infrastructure:

The Telecommunication sector has phenomenal growth with growth in e-governance, cashless transaction in banking and financial services, trade, education, health, agriculture, travel, tourism, logistics, transportation and citizen services sector. The growth in telecom sector has also generated innovations, entrepreneurship through the Start-up India and Stand-up India, and has made mobile communication among more than 80 crores population and contributing significantly with about 1.75% of the Indian GDP for the year 2015, according to Broadband India Forum(BIF).

About 1.5 lakh Gram Panchayats are being connected with optical fibre for providing internet and wi-fi hotspots and access to digital services at low tariffs, through Digital India and the Bharat Net Project. Further the Digi-Gaon is being planned for providing the platform for the financial services, tele-medicine, education, e-governance, e-marketing and skill development. The Digital India Program was launched by the Government of India in July 2015 at an estimated cost of Rs 1,13,000 crores,

with a vision to transform India into a digitally empowered society and knowledge economy, with three primary focus areas of creation of digital infrastructure, electronic delivery of services and digital literacy, and empowerment of citizens with e-participation in governance.

Renewable Energy Infrastructure:

India is emerging as one of the largest producer of energy from renewable sources, catering to about 20% of the total installed power capacity (69.02 GW) as of 31 March 2018 and with hydro power it contributes about 33 per cent. The wind power capacity is about 34,046 MW as of 31 March 2018, making India the fourth-largest wind power producer in the world, and it is aimed to generate 100 GW of solar power by 2022. Biomass power from biomass combustion, biomass gasification and bagasse co-generation reached 8.3 GW installed capacity and family type biogas plants reached 3.98 million as of 31 March 2018. International Solar Alliance Project is promoting the growth and development of solar power internationally to over 120 countries and India set a target of achieving 40% of its total electricity generation from non-fossil fuel sources by 2030.

Housing Infrastructure:

Housing as a basic need and right both in rural and urban area is reflected in the Pradhan Mantri Awas Yojana - Housing for All. PMAY (Gramin) targets to build about 1 crore houses by March, 2019, with a unit cost for minimum support of nearly Rs 1.5 lac to Rs 1.6 lac per household, with a provision of Bank Loan up to Rs 70,000 and provides skilling for 5 lakh rural masons by 2019 and allows 200 different housing designs across the country based on local conditions, with an outlay of Rs 819.7 billion, giving special thrust to hilly areas and LWE region, during first phase, with about 16.5 lakh houses completed and 34.6 lakh houses are under construction.

National Rural Drinking Water Programme:

The National Rural Drinking Water Programme (NRDWP) is targeted at providing every person in rural India with adequate safe water for drinking, cooking and other domestic basic needs on a sustainable basis, within the guidelines, accessible at all times and creation of the infrastructure for the

same, development of infrastructure and capacities for the successful operation of drinking water supply schemes in rural areas. About 1.7 million rural habitations provided drinking water under the National Rural Drinking Water Programme, 1.3 million (77%) habitations are fully covered under the guidelines of provision of 40 litres per capita per day (LPCD), while about 330,086 (19.3%) habitations are partially covered with safe water



Swachh Bharat Mission brings about a sanitation revolution

- Rapid construction of toilets across the country ensuring dignity of women and also helping to put an end to the practice of open defecation, which is unsafe and unhygienic
- Over 7.25 crore toilets built, over 3.6 lakh villages and over 17 states/UTs declared Open Defecation Free
- Sanitation coverage goes up from 38% in 2014 to 83%

**Over 7.25 crore
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availability below 40 LPCD) and 64,094 (3.73%) are water-quality affected habitations, by March 15, 2017.

Swachh Bharat Abhiyan :

Swachh Bharat Abhiyan has been a revolutionary initiative for embedding the sense of sanitation, hygiene and health, introduced in 2014 and exhibited remarkable progress with a 85 % coverage in 2018-19, from 38.70% in 2014, with about more than 391 districts becoming open defecation free (ODF) covering 3.8 lakh villages. With Swachh Bharat Gramin, over 7.4 crore individual household toilets (IHHLs) have been built by May 2018, with an aim to cover 100% toilet coverage by December 2018 and people are coming forward to own toilets and participate in healthy waste disposal, with mindset change and social acceptability.

Irrigation Infrastructure under PMKSY:

A very innovative Govt of India Programme to promote productive agriculture is the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY). Under this scheme convergence of investments to expand cultivable area, ensuring water use efficiency, improvement in recharge of aquifers, treatment of waste water from all sources for agriculture etc one taken up. Under this scheme under which water conservation, construction of farm pond, water harvesting structures, small check dams and contour bunding, construction of diversion canals, field channels, water diversion/lift irrigation, including development of water distribution systems, drips, sprinklers, pivots, rain-guns irrigation structures etc, for assured irrigation source, are promoted, and a Budget Outlay of Rs 5,300 crores were allocated during 2015-16, for this purpose.

Rural Infrastructure under the Mahatma Gandhi National Rural Employee Guarantee Act (MGNREGA):

Works undertaken under the Mahatma Gandhi National Rural Employee Guarantee Act(MGNREGA) are primarily rural infrastructure development works namely through watershed development like contour trench, contour bund, farm bunding, gabion structures, earthen dam, dugout farm ponds etc, agriculture development

works like manure and composting infrastructure etc, live stock related works like poultry and goat shelters etc, fisheries related works like drying yards, storm water drains etc, drinking water and sanitation related works like soak pits, recharge pits, individual latrines, school toilets, Anganwadi toilets, etc, flood management works like repair and deepening flood channels, and under irrigation infrastructure development like minor, sub minor and field channels etc. The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has a budget allocation of Rs 48,000 crore, during 2017-18 and an allocated of Rs 55,000 crores for the financial year 2018-19, which has generated rural employment and provided rural livelihood support.

Conclusion:

Giving priority to infrastructure is a progressive measure, which can be treated as the social capital that accelerates the productive activities, livelihood and quality of lives. Infrastructure development in providing modern facilities of roads, housing, communication, banking etc has poised the country at the threshold of an elite and developed nation. The Central Government's priority in irrigation infrastructure development supported by MSP and crop insurance, health infrastructure in terms of AIIMS and Health Insurance, Stand Up and Start Up initiatives, Cashless Transaction, Direct Benefit Transfer, e-governance and m-governance, and the like, are forward looking futuristic sustainable economic and social development initiatives.

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PM witnesses Experience Sharing by Beneficiaries of Welfare Schemes

The Prime Minister Shri Narendra Modi witnessed experience sharing by beneficiaries of the schemes of the Government of India and Government of Rajasthan during an audio-visual presentation moderated by the Chief Minister of Rajasthan, Smt. Vasundhara Raje. The schemes included Pradhan Mantri Ujjwala Yojana, Pradhan Mantri Mudra Yojana, and Pradhan Mantri Awaas Yojana, among many others.

The Prime Minister spoke at length about how the Union Government is working for the welfare of the farmers. He talked about the increase in Minimum Support Price for various crops, announced for the current Kharif season. The Prime Minister also mentioned the progress made by various schemes of the Union Government in the State of Rajasthan, including Swachh Bharat Mission, Jan Dhan Yojana, Pradhan Mantri Awaas Yojana, Mudra Yojana, Ujjwala Yojana, and Saubhagya Yojana.

As Rajasthan completes 70 years next year, the Prime Minister gave a call to reaffirm the commitment of creating a developed Rajasthan, which will play a pivotal role in the building of a New India.

The Prime Minister, Shri Narendra Modi also unveiled a plaque to mark the laying of foundation stone of 13 Urban Infrastructure projects for the State of Rajasthan on 7 July, 2018.



The Prime Minister, Shri Narendra Modi at a function in Jaipur, Rajasthan on 7th July 2018, where he witnessed experience sharing by beneficiaries of welfare schemes and unveiled a plaque to mark the occasion.

LINKING FARMERS TO eNAM

P. Chandra Shekara, Hema Yadav

eNAM is a pan-India electronic trading portal which networks the existing Agricultural Produce Marketing Committee (APMC) markets to create a unified national market for agricultural commodities. eNAM aims for integration of marketing process and flow of goods is to be achieved by bringing inter-connectivity of markets through information technology. The Electronic National Agricultural Market (eNAM) is a new age market which ensures transparency, competitiveness and better price discovery.

Agricultural Marketing regulation and environment in India has been evolving and had been responding to changes in economy. Regulations were introduced during 1960s by different states with total public control on the markets and marketing activities through enactment of APMC Act. The regulations served some important purposes, helped in getting rid of several malpractices and imperfections prevailing in agricultural market and ensured a fairer deal to the farmers in selling their produce (Acharya, 2004). Today there are more than 7000 regulated markets in India. The introduction of regulated markets once conceived to offer solutions to all the malpractices and imperfections prevailing in the markets, achieved only limited success. The regulations lost the relevance with the changes in economy and agriculture in terms of increased production and diversification.

This led to the introduction of agricultural marketing reforms in India. A Model Act was prepared by Ministry of Agriculture in 2003 on the recommendation of Expert Committee and Inter-Ministerial task force advising state/UT governments to amend the APMC Act with provisions mainly for components like direct marketing, contract farming, development of markets under private/cooperative sectors, single license, single point levy of market fee, e-trading and farmers markets.

The reforms have ushered in some desirable changes in some states but private investment in agricultural marketing has not been commensurate with the commercialization and diversification that have taken place in the agriculture sector. The agricultural marketing system in India today remains uncoordinated and fragmented, characterized by an inadequate and poorly equipped network of

Multi-faceted focus on doubling farmers income



Special focus on irrigation with sufficient budget, with the aim of “Per Drop More Crop”



Provision of quality seeds and nutrients based on soil health of each field



Large investments in warehousing and cold chains to prevent post-harvest crop losses



Promotion of value addition through food processing



Creation of a National Farm Market and e-platform across 585 stations



Introduction of a New Crop Insurance Scheme to mitigate risks at an affordable cost



Promotion of ancillary activities like poultry, beekeeping and fisheries

markets in most states, limited market support services, more efficient operations are impeded by a number of regulations and control enjoyed by the states (World Bank, 2006).

In the light of the need to have 'one nation one market' and a barrier free marketing, it was felt to further liberalize the Act. Thus, the new Model Act "The State/UT Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Act, 2017" has been introduced in the current agricultural market environment of the country.

As per New Model Agricultural Produce and Livestock Marketing (Promotion and Facilitation) Act, 2017, the new definition of market area restricting the power of the market committee to enforce regulation in the principal market yards and sub-market yards only, is something in tune with the concept of unified market for agricultural produce. This will go a long way towards removing the entry barriers and trade barriers in the agricultural marketing system of the country.

The Act will help in reducing price spread by enabling direct contact between farmers and consumers or other end-user categories. APLM Act provides multiple options to farmers to sell his produce. It also provides for declaring warehouses and other storage facilities as markets or sub-market yards, it will enable linkage between the farmer and the buyer. Most important it has provisions for promoting e-trading to link markets across different geographies that will make trade more transparent.

In order to expedite the reforms and facilitate competitiveness by developing alternative marketing channels, the Central Government announced the networking of markets through the central sector scheme of Electronic National Agricultural Market (eNAM) in 2016. eNAM is a pan-India electronic trading portal which networks the existing Agricultural Produce Marketing Committee (APMC) markets to create a unified national market for agricultural commodities. (www.enam.gov.in).

E National Agriculture Market-Technology Innovation: Well-functioning agriculture marketing leads to price discovery, efficiency in supply chain and opportunity to scale up in the



Value addition on better income & getting the supply chain right

- Pradhan Mantri Kisan Sampada Yojana launched to modernise supply chain infrastructure in the agricultural sector
- Budget allocation doubled under the Krishi Sampada Yojana to push the food processing industry
- Operation Greens: To address the challenge of price volatility of perishable commodities like tomato, onion and potato (TOP) to help farmers and consumers
- Gramin Agricultural Markets (GrAMs): To develop and upgrade existing 22,000 rural haats into GrAMs to take care of the interests of more than 86% small and marginal farmers. These GrAMs, electronically linked to e-NAM will provide farmers facility to make direct sale to consumers and bulk purchasers

Paramparagat Krishi Vikas Yojana to give a new boost to farming

10,000 clusters covering 2 lakh hectare area under organic farming being covered during 2015-18

Blue Revolution opens up new avenues for farmers

- Integrated Development and Management of Fisheries with an outlay of Rs. 3,000 crore
- Fish production increased from 186.12 lakh tonnes in 2012-14 to 209.59 tonnes during 2014-16

Umbrella Scheme, "Green Revolution - Krishonnati Yojana".

- 11 Schemes/Missions in agriculture sector merged under one Umbrella Scheme. "Green Revolution – Krishonnati Yojana".

value chain. By linking markets, these marketing systems transmit right signals to farmers on new market opportunities and guide their production to meet preferences for quantity, quality and varieties (Draft report on Doubling farmers income- Post production maximization, DAC, 2017).

The eNAM portal launched by the Centre in April 2016 has 45.4 lakh farmers and 585 APMC¹ registered on it. eNAM aims for integration of marketing process and flow of goods is to be achieved by bringing inter-connectivity of markets through information technology. Karnataka State has been the fore runner in market reforms and devising innovative practices to improve agriculture market and competitiveness (Chand 2016). The unified online agricultural market initiatives was launched in Karnataka in 2014 and has been a precursor to E National Agricultural Market.

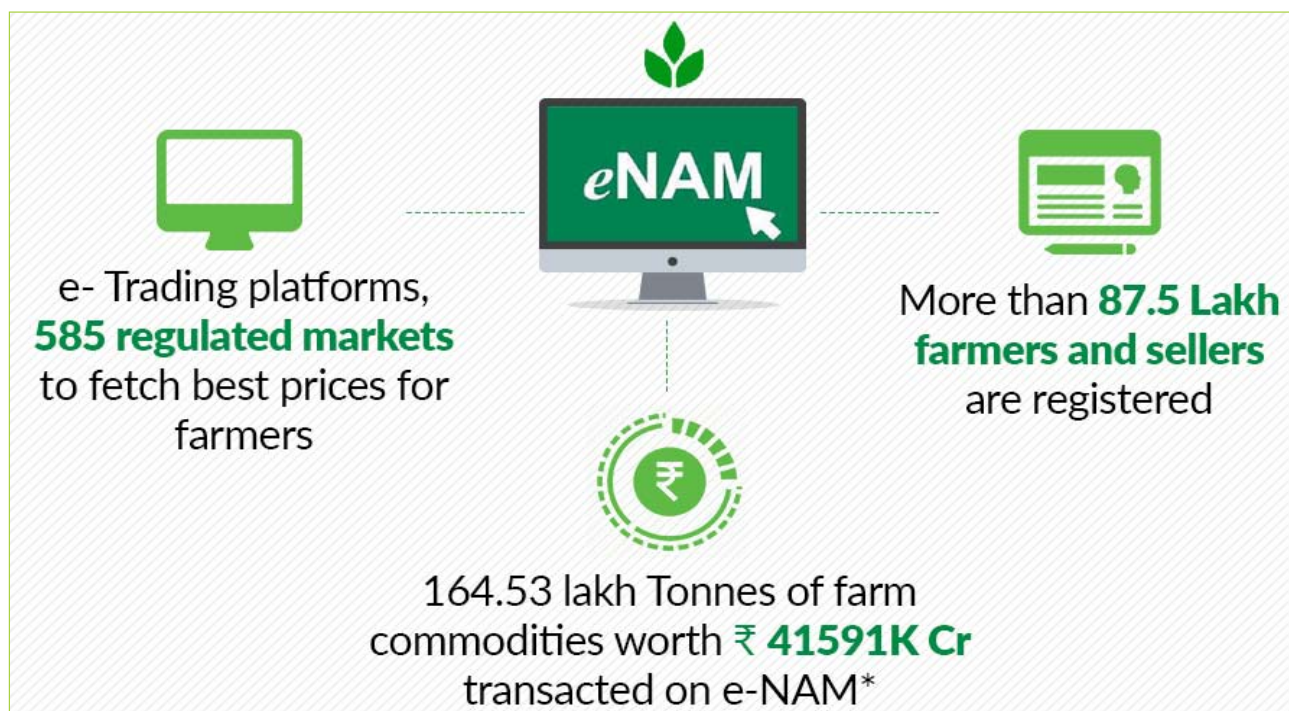
The Electronic National Agricultural Market (eNAM) has distinct advantage over traditional markets like APMC. Its a new age market which ensures transparency, competitiveness and better price discovery.

The eNAM Portal provides a single window service for all APMC related information and services. This includes commodity arrivals & prices, buy & sell trade offers and provision to respond to trade offers and among other services.

eNAM addresses the challenges of marketing by creating a unified market through online trading platform, both, at State and National level and promotes uniformity, streamlining of procedures across the integrated markets, removes information asymmetry between buyers and sellers. It promotes real time price discovery, based on actual demand and supply, transparency in auction process, and access to a nationwide market for the farmer, with prices commensurate with quality of his produce and online payment and availability of better quality produce and at more reasonable prices to the consumer.

The national e-market platform will facilitate transparent sale transactions and price discovery initially in regulated markets. The willing States are accordingly required to enact suitable provisions in their APMC Act for promotion of e-trading by their State Agricultural Marketing Board/APMC.

A well designed electronic platform with capacity to accommodate large number of participants like the capacity of commodity exchanges with facilities of e-auction/ e-trading will turn out to be an effective model for price discovery. The other provisions required are traders licensing system (single licensing on a pan India basis), supporting infrastructure (assaying, sorting, grading, storage and transportation),



electronic payment system and tax reforms (in the form of GST).

eNAM is beneficial to stakeholders and organizations. The major benefits emerging from E NAM are as follows :-

Major constraints in implementation of eNAM:

Harmonization of Grades and Standards : The success of eNAM in improving competitiveness and integrating Pan India market will require assaying facilities in various markets to ascertain quality traits. (Chand 2016) Trading on virtual platform will require a strong and well-established standardizing and grading system. Harmonisation of quality standards of agricultural produce and provision for assaying (quality testing) infrastructure in every market to enable informed bidding by buyers will be required. Besides this, disseminating and communicating the same with market participants

needs to be in place for harmonization of quality standards across the state, which in turn will result into increased number of participants.

Integrating value chains: Technology can contribute to create the system by synchronising value chain activities into layer wise process(Dey 2015). eNAM is perceived as a marketing system that will facilitate the post-production supply chain of farm produce. It is required to work for the inclusion of farming communities and farm operations into other segments of the marketing chain like storage, logistics so that it will help capture a larger share of the final value realised. A wide correlation between value chains of the producer, market channels, retailer and consumer is required to be developed. Integration of value chain system, also includes secondary activities such as research, development, front line demo, extension work, market information (Draft report Doubling Farmers' Income–Volume III Post-

Stakeholders	Functions	Benefits
Farmers	<ul style="list-style-type: none"> Bring clean produce to the market place Get their name registered Vigilant about sale proceed, sms notification and payment settlement 	<ul style="list-style-type: none"> Access to market and information Transparent price discovery Competitive price Quick payment settlement Quality based premium price Better placed producers Incentive to quality Direct money transfer Reduction in transaction cost Encourages farmers' participation
Commission agents	<ul style="list-style-type: none"> Obtaining license Facilitating grading and quality testing of the commodities by the assayers Display of commodity for buyers Display of quality specification and lot code Arranging weighing of commodity 	<ul style="list-style-type: none"> Increase value and volume will lead to better commission Vertically integrate and enhance business base
Traders, processors, exporters, retailers	<ul style="list-style-type: none"> Obtaining license and registration Depositing prescribed amount as margin money before participating in on line bidding. A bidding timing of trade 	<ul style="list-style-type: none"> Availability of larger commodity base Direct purchase will lead to reduced cost May operating in many mandies through single license Reduction in transaction cost
APMC	<ul style="list-style-type: none"> Registration of farmers Necessary arrangements for assaying of commodities Required infrastructure like hardware, software, internet, continuous power supply, assaying equipments, personnel, etc. Shift in focus from regulation to efficiency 	<ul style="list-style-type: none"> Larger volume of arrivals Efficient operations Book keeping and reporting system collection and distribution of reliable information Efficient delivery of duties Better monitoring Improvement in fee collection Reduction in transaction cost

production Agri-logistics: maximising gains for farmers). Cross learning from dairy and food processing industry where value chain integration have helped in optimal value realization needs to be adopted by progressive state where eNAM is already operational.

Capacity building of market participants:

With the advent of E Marketing in various states, there emerges a requirement for capacity building of different stakeholders and Institutions of agri value chain. eNAM is a paradigm shift which will see new roles of Market Functionaries, traders, farmers etc.

National Institute of Agricultural Marketing (NIAM) has outlined a capacity building plan for various actors namely farmers, traders, APMC secretaries, Directors. At apex level Director needs to understand the implementation of eNAM and making required policy changes, providing provision for PPP model for E marketing and creating synergy for customized services. APMC Secretaries and Chairman need to build their capacity in operation and management of electronic market, change management, dispute


redressal, consumer behaviour, advisory and market information to farmers etc.

eNAM requires farmer linkages for selling produce. The Farmer Producer Organization (FPO) needs to be strengthened on Organizational skills, working in teams, interpersonal communication, work allocations, online payments and transaction, pledge finance etc. Training will help farmers better manage their finances, achieve more sustainable production, improve their market performance, and stay innovative and competitive. Besides this they need to understand changes in markets and preparing produce by grading and assaying for e NAM. Traders and market agents need to be trained on adoption of grades, assaying, bidding, online payments, sale procedure, produce handling, dispute settlement etc.

Synergy of network organisation and market services:


The success of eNAM will depend on the delivery of services in optimal way. There is a need for synergy of network organisation and market agencies like warehousing and collateral management agencies, financial institutions, logistic providers training and extension

Value Addition for Better Incomes & Getting the Supply Chain Right







PMKSY* launched to modernize supply chain infrastructure




Budget allocation doubled to push Food processing industry



GrAMs, electronically linked to e-NAM, to make direct sale to consumers and bulk purchasers



Operation Greens to address price volatility of perishable commodities like tomato, onion and potato



Develop existing 22,000 rural haats into Gramin Agricultural Markets (GrAMs), helping 86% small farmers

*Pradhan Mantri Kisan Sampada Yojana

organizations As markets are transforming towards on digital phase, diverse and discursive groups of clientele, public and private organisation need to be integrated to provide customized services. These services include assaying and grading of the produce, price poling and information dissemination, warehousing and disposal and commodity based structured financing (Dey 2016).

Pathways to integrate Farmers to market:

Linking sellers and buyers to markets is a key factor that will bring better participation in the evolving markets and ensure better returns to both sellers and buyers. Owing to the fact that the sellers are smallholder producers and have constraints in access to markets, the task of integrating smallholder producers to eNAM is going to be a daunting one.

Linkages with Market: Understanding the inter-linkages in resources, production, risk, price and market and how they affect the capability smallholders to participate in new opportunities is critical to draw a path for integration of regulated markets with eNAM.

Incentives and constraints to market integration are realized differently by farmer producers and change as a result of market development. As the increasing opportunities are becoming available to farmers as alternative markets such as eNAM, the process of integration of buyers and sellers need to have a pathway.

The leap in transforming the abandoned regulated markets of Odisha to Electronic National market is not only going to be a feat of technology but also a socio-cultural exercise. For bringing this transformation, it needs to be recognized that not all farmers and buyers will respond to this transformation. The ability and willingness to participate in the emerging markets driven by information technology will depend on:

- Well-functioning markets to give them appropriate incentives.
- Farmers have access to finance and information.
- Efficient infrastructure to store and transport the produce at a reasonable rate.

If one component is missing, the farmer producers will not be willing to participate to the

same extent. Therefore, concentrating on these components to bring a holistic approach to market development is imperative to have better market integration

Enabling market connectivity through market information: Market information encompasses reliable price, buyer contact, market channel, grades and standard specification, post-harvest handling advice and storage and transport recommendation.

To achieve this pathway using the Information technology not only to disseminate price, but also to reduce transaction cost need to be in place. Investing in the communication infrastructure such as mobile phones network, internet linked rural kiosk which aid in strengthening market information, extension and other services to farmers needs to be made.

Producer organization to offer vital link to market: Technical and institutional innovations that reduce transaction cost have proven to be enablers especially the wider use of information technologies- mobile phone, the internet, social networks for vertical coordination arrangements with farmers or producer organization. Producer organization including agricultural co-operatives play an important role in supporting farmers to trade in market place and understand the trends in marketing.

FPO and collective action can help to enhance farmers' competitiveness and increase their advantage in emerging marketing system of eNAM. Collaboration between FPO and Private sector built on their shared interest in achieving scale and market power will be critical in integrating Farmers to market Linking small farmers to the market (Dinal Umali, Development Outreach, World bank Institute, 2005).

Market Led Extension and capacity building: Market led extension to transmit signals to farmers on new market opportunities will make physical markets relevant to buyers and sellers.

Extension functionaries have a key role to play in engaging farmers with markets. SWOT analysis of the market, organizing commodity based farmers' interest groups and farm management capacity building, backward and forward linkage, Farmers exposure to market intelligence and guidance



for quality decision about market. Empowering farmers with linking them to eNAM information, services and *linkages through Market Led Extension is a long-term solution.*

Linking rural periodic markets by upgrading them as GRAM: As per the recommendations of Report on Doubling farmers income¹, the Rural periodic markets (RPM) need to be upgraded as Gramin Agricultural Markets (GrAM) to a function that enables aggregation and transportation from village level to wholesale market. It has been advised to build on the available infrastructure and experience of the RPMs to establish large number of primary rural agricultural markets (PRAM) to provide the following two services:

1. Direct marketing between producers and consumers.
2. Aggregation platforms for the small lots of farmers.

In pursuing the establishment of GrAM, the capability to connect produce in suitable quantities with market of choice will be developed. Further with farmers enabled with a choice of markets, the element of market to market competition will follow. This approach is what will make the markets functional and provide services that add value and better returns. It is planned to connect over 22,000 GrAMs, local farmers markets with the platform.

Adopting Model Agriculture Produce Livestock Market Act (2017) : As per new Model Agricultural Produce and livestock marketing

Act 2017, the new definition of market area is now extended to the whole State/UT as one unified market area for regulation of marketing of all or any of the kinds of agricultural produce. This will go in a long way in removing the entry barriers to markets and at the same time arrest the problem of fragmentation of markets within the State.

The New Model Act allows for establishing private markets, farmer consumer markets managed by market committee, private consumer markets yards managed by a person and electronic trading platform.

Warehouses and Silos to be declared as market points: The new legislation also provides for declaring warehouses/silos/cold storages or other place as market sub yards. This will provide better market access to farmers.

In order to declare a warehouse as a sub-market yard, warehouses which are fit to serve the purpose may be notified. Generally, warehouses accredited by WDRA may be selected to be notified as a sub-market yard as the accreditation norms of WDRA requires warehouses to follow scientific storage practices which ultimately results in quality keeping of the produce. The concept has been shaping up in Karnataka through initiatives of Rashtriya e-Market Services Private Limited. A similar initiative has been seen in Punjab where silos have been notified as Mandis.

Towards a fully unified market: E National Agriculture Market needs to be implemented in a phased manner to achieve a fully integrated market of the nation. The various components of the market that may be achieved over different period of time are depicted in the Table below:

The suggested action plan to integrate farmers with market and to make market ready to function as e-national agriculture markets is as under :-

- i) Adopting APML Act 2017 to transcend the barriers of physical space and introduce alternate marketing framework.

- ii) Producer organizations for aggregation of produce to link small farmers to markets.
- iii) Making market competitive through optimized value chain logistics which bring efficiency in each component of marketing.
- iv) Establishing Agri logistics comprising of cleaning, grading, packaging, storage and transportation.
- v) Having service agencies to handle aggregation, storage and certification in some cases.
- vi) Integrating bringing rural periodic markets and other markets under local bodies under the emerging format of marketing.
- vii) Marketing extension as a strategy to link farmers to markets.
- viii) Providing market information in advance for crop planning, as well as enable a choice of market channel so that farmers are confident in responding to market demands.

New Features of eNAM : In the continuous pursuit to engage more and more farmers on eNAM, Ministry of Agriculture & Farmers Welfare has built in the mobile payment facility through BHIM App. Besides this the eNAM website is now available six regional languages besides Hindi and English. The eNAM trading facility is also available in six languages.

The eNAM has been strengthened with MIS dashboard for price information, mobile app for gate entry and integration of farmers database and e-learning module.

Conclusion:

Responsive, inclusive and technology enabled markets are need of the hour as it will have positive effect on livelihood, welfare, food security particularly for poor households and every step should be taken to achieve the adoption of eNAM. The States are required to take a proactive lead by making necessary changes in act to integrate farmers to eNAM.

One of the biggest challenge is creating awareness about eNAM amongst the small and marginal farmers. It is suggested to have a sensitization and awareness campaign to bring the required information to the farmers. A national e-literacy campaign needs to be initiated to touch 130 millions farmers of the country so that the right integration of farmers with the eNAM portal

can take place and give impetus to the benefit for price discovery and better market access for enhancing income of farmers.

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PMAY-G: RURAL HOUSING REVOLUTION

Sameera Saurabh

Houses constructed under Pradhan Mantri Awaas Yojana - Gramin (PMAY-G) are equipped with facilities such as toilet, LPG connection, drinking water and electricity connection. Convergence with other schemes e.g. Swachh Bharat Abhiyan toilets, Ujjwala Yojana LPG gas connection, and Saubhagya Yojana is a hallmark feature of this scheme. The vision of the government is to replace all temporary (kutchha) houses from Indian villages with pucca houses. The faster completion of quality houses under PMAY-G has been facilitated by payment of assistance directly into the beneficiary account through IT-DBT platform directly from single State Nodal Account maintained at the State level.

Pradhan Mantri Awaas Yojana- Gramin (PMAY-G), previously Indira Awaas Yojana (IAY), is a social welfare flagship programme, created by the Indian Government, to provide housing for the rural poor in India. Under the scheme, financial assistance worth ₹ 70,000 (US\$1,000) in plain areas and ₹75,000 (US\$1,100) in difficult areas (high land area) is provided for construction of houses. These houses are equipped with facilities such as toilet, LPG connection, electricity connection, drinking water and electricity connection. Convergence with other schemes e.g. Swachh Bharat Abhiyan toilets, Ujjwala Yojana, LPG gas connection, and Saubhagya Yojana is a hallmark feature of this scheme.

The houses are allotted in the name of the woman or jointly between husband and wife. The construction of the house is the sole responsibility of the beneficiary and engagement of contractors is strictly prohibited. Sanitary latrine and smokeless chullahs are required to be constructed along with each house for which additional financial assistance is provided. This scheme provides subsidies and cash-assistance to people in villages to construct their houses themselves.

Purpose : The broad purpose of the scheme is to provide financial assistance to some of the weakest sections of society to upgrade or construct a house of respectable quality for their personal living. The vision of the government is to replace all temporary (kutchha) houses from Indian villages with pucca houses.

Prime Minister launched Pradhan Mantri Awas Yojana – Gramin (PMAY-G) on 20th November, 2016. The erstwhile rural housing programme, Indira Awaas Yojana (IAY), was restructured into PMAY-G. To achieve “Housing for All by 2022”, a target of completing one crore PMAY-G new pucca



Building homes, nurturing dreams with Pradhan Mantri Awas Yojana (PMAY)

- When India turns 75 in 2022, every Indian should have his or her own home
- Earlier, loans were given up to Rs 6 lakh at a subsidized rate of 6.5 per cent. Now, housing loans of up to Rs. 9 lakh and Rs. 12 lakh get interest subvention of 4 per cent and 3 per cent, respectively
- Over the last three and a half years, around 1 crore houses built in urban and rural areas

Urban transformation through Smart Cities

- Around 100 urban centres chosen as smart cities to ensure improved quality of living and area based development, sustainable urban planning and development
- Various development projects in these cities will cost Rs. 2,01,979 crore and positively impact almost 10 crore Indians



houses in rural areas by 31st March, 2019 and 2.95 crore pucca houses by 2022 was set. Of these, 51 lakh houses were to be completed by 31st March, 2018, which included completion of expected 2 lakh incomplete IAY houses as well.

Completion of houses under the rural housing programme of the Ministry from 2013-14 to 2017-18 is as follows:

(No. in lakh)

	2013-14 (IAY)	2014-15 (IAY)	2015-16 (IAY)	2016-17 (IAY + PMAY-G)	2017-18 (IAY + PMAY-G)
Houses completed	10.51	11.91	18.22	32.23	44.54*

**States have reported physical completions on the ground and progress is being uploaded on AwaasSoft portal as uploading requires release of final installment, geo-tagged photos etc. 40.25 lakh houses already uploaded.*

The performance of the rural housing scheme has shown an upward swing and an increase by nearly four times in the last four years. This is despite the fact that it took a few months to complete the process of beneficiary registration, geo-tagging, account verification etc. after the programme's launch on 20th November, 2016.

While meeting the target of construction of 1 crore PMAY-Gramin houses by December, 2018, more than 76 lakh beneficiaries have been sanctioned houses, and approximately 63 lakh beneficiaries have received 1st installment. Highest

number of PMAY-G houses have been completed in the State of Uttar Pradesh during the Financial Year 2017-18 followed by Madhya Pradesh and West Bengal. In fact, almost all States that have the highest number of PMAY-G beneficiaries like Odisha, Chhattisgarh, Rajasthan, Maharashtra, Jharkhand etc., are on course for completion of PMAY-G houses within the prescribed time-frame. So far, 38.22 lakh PMAY-G houses have been completed. With Assam and Bihar also speeding up completion of houses, we hope to complete 60 lakh PMAY-G houses by June, 2018 and 1 crore by December, 2018.

Transparent Implementation:

Construction of bigger and better houses has been possible due to transparent beneficiary selection, capacity building of beneficiaries, timely availability of funds to the beneficiaries, structured monitoring and course-correction based on the feedback on implementation.

The faster completion of quality houses under PMAY-G has been facilitated by payment of assistance directly into the beneficiary account through IT-DBT platform from single State Nodal Account maintained at the State level. Use of IT-DBT platform has ensured transparent, hassle-free and quality programme implementation. Payment to beneficiaries under PMAY-G, is routed through Public Financial Management System (PFMS). Direct Benefit Transfer (DBT) has led to:

- Reduction in time and cost in house construction.
- Transparency leading to stoppage of leakages.
- Ease in tracking fund flow to beneficiaries.
- Better quality of construction of houses.

A total of 1,92,58,246 transactions through electronic cheques (Fund Transfer Orders) have been done by State Governments during 2016-18, to transfer assistance amount of Rs. 65,237.50 crores directly to beneficiaries' accounts (as on 5th April 2018). Space technology and IT platforms are being used to monitor complete cycle of house construction, right from identification of beneficiary to each stage of construction of houses to completion and each stage is being geo-tagged.

Ministry of Rural Development has developed a Performance Index incorporating various parameters of progress under PMAY-G. The Index acts as a tool not only to monitor progress of PMAY-G on various parameters across States, Districts, Blocks and Gram Panchayats, but also instils a healthy competition among them. It also helps in identifying areas of improvement and in motivating them towards better performance in implementation of the programme. The ranking of State/UTs and below on Performance Index is done on real time basis and changes everyday based on the performance of the State / UT and below. The national ranking of districts has also been introduced recently which places the performance of a district in the national perspective.

Ensuring Quality Construction:

To ensure quality construction of a house



and to facilitate availability of trained masons in the rural areas, Rural Mason Trainings are being organized. A total of 25,000 trainees have been enrolled, out of which 12,500 trainees have been trained and certified. The rural mason training has been initiated in 11 States and the States of Chhattisgarh and Madhya Pradesh have taken the lead and have the highest number of certified rural masons. It is targeted to train 1 lakh rural masons by March, 2019 which will contribute towards not only the quality construction of PMAY-G houses in rural India, but also to the skilled manpower pool of the country. In addition, this will also help in getting better livelihood opportunities for the trained Masons.

States have also taken adequate steps to ensure continuous availability of construction material at reasonable prices so that the pace and quality of construction is not adversely affected.

Pucca houses constructed under PMAY-G with facilities like toilet, LPG connection, electricity connection, drinking water etc., are changing the rural landscape at a very fast pace. In some states, PMAY-G houses are coming up in clusters/colonies which are generally for landless beneficiaries and these are provided with many facilities in convergence with various Central and State schemes.

Technology has been used to empower the poor. House designs prepared by UNDP-IIT, Delhi or by the concerned states have been made available to beneficiaries to choose the house designs that they like. 168 house designs typologies, suitable to local conditions and using locally available construction material, have been developed for 15 States. These house designs are cost effective

& disaster resilient and they have been vetted by Central Building Research Institute, Roorkee. Bouquet of these house designs has resulted in technically sound houses of different designs coming up in rural areas. These homes are not only changing the rural landscape, but also bringing about a social transformation in villages across the country. The poor are getting safe homes and can live with dignity.

Implementation : The funds are allocated to the states based on 75% weightage of rural housing shortage and 25% weightage of poverty ratio. The housing shortage is as per the official published figures of Registrar General of India based on the 2001 Census. A software called “AWAAS Soft” was launched to assist in improved administration of this scheme.

Budget allocation, 2017-18: Rs 23,000 crore PMAY (G)

(Allocation for FY 2018-19: Rs 21,000 crore)		
Houses completed out of total sanctioned (%)	31.2	49.9
Houses completed for the given FY	7,58,672	19,42,825
Houses sanctioned for women (%)	27.1	32.2
Houses in joint names (%)	34.1	33.3

Allocation for 2018-19: Rs 21,000 crore (extra-budgetary support is additional).

Rural housing has been a marquee scheme for the Government. So far this year, 31 per cent of the houses sanctioned have been completed, as against 50 per cent last year. In nearly three years starting 1 April 2016, 27 lakh houses have been completed. The Rural Development Ministry is confident of meeting the one crore target by end of this fiscal. Officials say full emphasis is being paid to make sure the target is met and that identification of beneficiaries is fool-proof. There is real-time monitoring of progress of construction through geo-tagged photographs. Funds are transferred electronically to beneficiary bank accounts through DBT. 45 lakh houses sanctioned in the second instalment are near completion.

Shyama Prasad Mukherji Rurban Mission:

Apart from Pradhan Mantri Awaas Yojana - Gramin (PMAY-G), the Rurban Mission has also contributed in building urban-rural clusters in villages. Large parts of rural areas in the country are not stand-alone settlements but part of a cluster of settlements, which are relatively proximate to each other. These clusters typically illustrate potential for growth, have economic drivers and derive locational and competitive

advantages. Hence, making a case for concerted policy directives for such clusters. These clusters once developed can then be classified as ‘Rurban’. Hence taking cognizance of this, the Government of India is implementing the Shyama Prasad Mukherji Rurban Mission (SPMRM), aimed at developing such rural areas by provisioning of economic, social and physical infrastructure facilities.

Taking also into view, the advantages of clusters, both from an economic view point as well as to optimize benefits of infrastructure provision, the Mission aims at development of 300 Rurban clusters. These clusters would be strengthened with the required amenities, for which it is proposed that resources be mobilized through convergence of various schemes of the Government, over and above which a Critical Gap Funding (CGF) would be provided under this Mission, for focused development of these clusters. The larger outcomes envisaged under this Mission are: i. Bridging the rural-urban divide-viz: economic, technological and those related to facilities and services. ii. Stimulating local economic development with emphasis on reduction of poverty and unemployment in rural areas. iii. Spreading development in the region. iv. Attracting investment in rural areas.

Conclusion:

Rural development has assumed global attention especially among the developing nations. It has great significance for a country like India where majority of the population, around 65% of the people, live in rural areas. The present strategy of rural development in India mainly focuses on poverty alleviation, better livelihood opportunities, provision of basic amenities and infrastructure facilities through innovative programmes of wage and self-employment. The Rural Housing program has certainly enabled many BPL families to acquire pucca houses. Rural Housing will improve rural people’s livelihoods in an equitable and sustainable manner, both socially and environmentally, through better access to assets (natural, physical, human, technological and social capital), and services.

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PMAY-Grameen: Impact on Employment

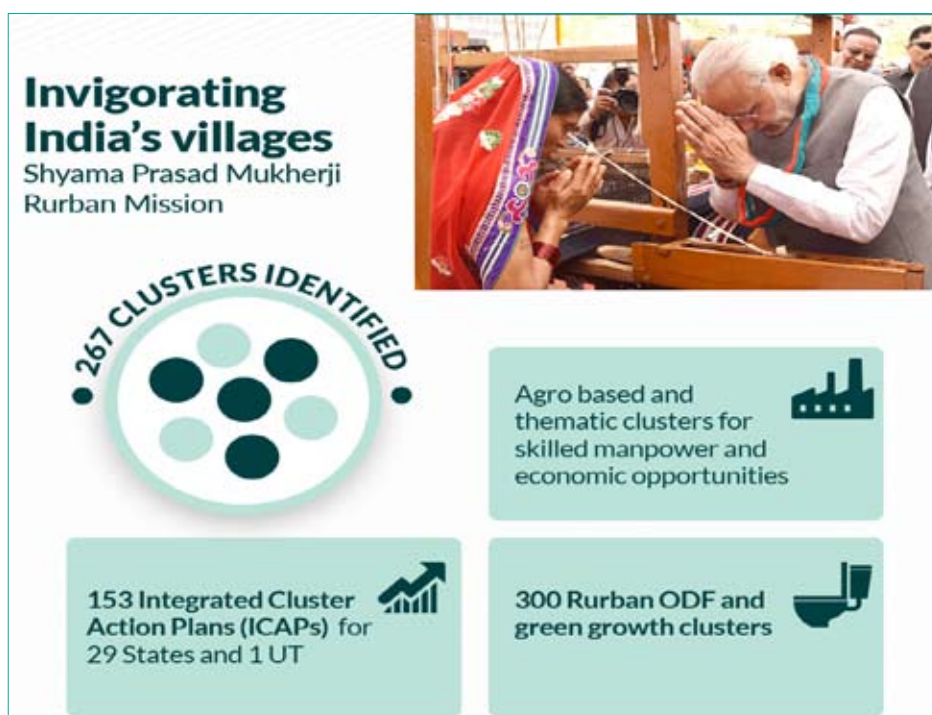
N R Bhanumurthy & H K Amar Nath

The scheme could have generated 94.53 lakh jobs (both direct and indirect) in the economy since its inception up to March 5, 2018. Out of this, 83.35 lakhs are directly employed in the residential construction sector. Overall, it suggests that given the improvement in the way the revamped rural housing scheme is implemented, the impact on employment and output, two major macroeconomic parameters, could be substantial. Further, it could have also played as automatic stabilizer in the economy especially when the private investment activities are subdued.

Providing shelter for poor has always been a challenge for India and the problem is more prominent in rural areas. The governments over the years have initiated various housing schemes to address this issue. The current government, in an effort to accomplish its target of ‘Housing for all by 2022’, the existing Indira Awaas Yojana (IAY) was restructured and transformed into Pradhan Mantri Awaas Yojana-Gramin (PMAY-G), for fulfilment of gaps identified in IAY as outlined in the report of “the Comptroller and Auditor General (CAG) on Performance Audit on IAY” (CAG, 2014), and the report on “Unspent Balances and Flow of Fund Mechanism under Some Rural Development Schemes” (Bhanumurthy et al., 2015). Being the world’s largest programme for rural poor, it aims to provide a *pucca* house,

with basic amenities such as piped drinking water, electricity connection, and Liquefied Petroleum Gas (LPG) connection by convergence of different schemes and programmes run by government to all homeless and those households living in *kutcha* and dilapidated houses by 2022. The Ministry of Rural Development (MoRD), for proper and effective implementation of the programme and construction of quality houses, has issued General Guidelines and Housing Designs -PAHAL. In its first phase, it aims to construct one crore houses by 2019, and the beneficiaries will be selected through Socio-Economic Caste Census (SECC) 2011. The beneficiaries are provided with the unit assistance of Rs 1.20 lakh for plain areas and Rs 1.30 lakh for the hilly, difficult, and Integrated Action Plan (IAP) areas, and the funds are transferred digitally

directly to the account of the beneficiary from the Single Nodal Account established at the State level. Apart from the unit assistance, they are provided with the option of availing institutional finance up to Rs 70,000 and are entitled to 90-95 days of employment under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Rs 12,000 for constructing toilets under Swachh Bharat Mission, etc. In addition to these benefits, the beneficiaries are endowed with a number of other



support services such as training of masons and skill certification for the good quality construction of the houses, sourcing of construction material, support to old and disabled beneficiaries in getting the house constructed, development and provision of house design topologies, etc.¹The minimum size of the PMAY-G house is increased to be 25 square metre including a dedicated area for hygienic cooking. Furthermore, for PMAY-G to operate in a transparent manner, ensure quality and timely construction of the houses, monitoring of physical progress of the construction is done with the help of AwaasSoft at level of both Government of India and State/UT Government.

The guidelines issued by the MoRD affirms that for the construction of one crore houses under the PMAY-G by 2018-2019, the total allocation of Rs 1,30,075 crore is sanctioned. The cost is to be shared between Government of India and State Governments in the ratio of 60:40 for general category states and 90:10 for special category states and IAP Districts. The Government of India provides the full cost in respect of Union Territories (UTs). Various Governance reforms such as Direct Benefit Transfers (DBT) through digital payments, e-monitoring through AwaasSoft, masons training, convergence, providing of housing typologies, and setting up of technical support agencies at State and Central level is expected to help in speedy completion of houses. This is also expected to create additional employment and income generation at rural level.

The NIPFP recently has undertaken a study to understand the impact of PMAY (G) scheme on generating employment (both skilled and unskilled) as well as its impact on the overall growth of output in the economy (Bhanumurthy,

et al, 2018)². Here, a summary of the report in terms of the employment impact is presented.

Impact on Employment:

As the expenditure on housing generates both direct as well as indirect employment, an attempt has been made to understand the overall impact on employment since 2016-17, the year when the revamped scheme is implemented. The estimation is done under two stages. In the case of direct effect, the study uses PAHAL designs provided at the State level, and for indirect effects, the study uses Input-Output tables.

Direct employment based on PAHAL:

PAHAL gives more than 100 designs, and, based on these designs, a broad estimation of cost for each component is presented in Figure 1. However, these estimations could change, although marginally, depending on the designs. It is also important to note that the cost of most of the designs provided in PAHAL exceeds the amount provided in the scheme. Similarly, the area exceeds the minimum requirement area of 25 sqm set by the scheme (PAHAL, 2017a, 2017b). The cost composition from Figure 1 indicates the share of various inputs, including labour, in constructing PMAY-G houses. Overall, the composition of materials used and the workforce employed do not vary much across the designs and States.

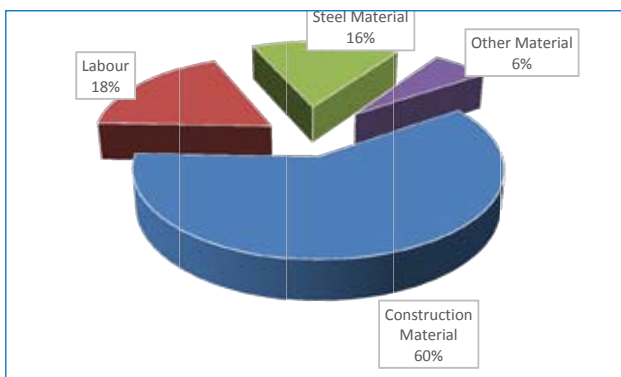
While most of the designs do not provide details with regard to inputs, here for further analysis, we have taken the design that has some information about the materials and labour cost break-up. For the plain area, we have selected a design from Bihar, and in the case of a hilly region, one design from Assam is chosen.

Assumption for Estimation:

As we need to understand the direct and indirect impact of construction on both employment, there is a need to disaggregate the whole construction output in terms of inputs, especially into materials and labour. However, PAHAL do not provide the disaggregated data. Following assumptions were made for estimating the value of materials and labour.

- i) The calculation of steel has been made considering the materials used in constructing

Figure 1: Composition of cost in PMAY-G house



the houses such as steel for reinforcement, chicken mesh, rod binding wire, shuttering materials, hardware (nails, lashes, and ropes), and the steel frame for the doors and windows. The rates for these materials are taken from PAHAL.

- ii) It is assumed that the total cost of white-wash is distributed between material and labour in 60:40 ratio. The labour cost thus obtained is added to the skilled labour cost. The rate for material-dry distemper is Rs 26 per kg.
- iii) The sand type is selected based on the higher percentage usage in constructing the house. The rate considered here is taken from PAHAL.
- iv) The wage rate for the labour is taken from the notification issued by respective state governments (2016 for Bihar and 2017 for Assam)
- v) The rates of brick, cement, aggregate, steel, and sand are taken as per the market rates and the rates for CGI sheet and Bamboo are taken from PAHAL.

Estimation of Direct Employment Generated and the Total Cost of the PMAY-G Houses:

Based on the estimates per house derived separately for the plain areas and for the hilly areas, an attempt has been made to estimate the direct employment and additional expenditure made for constructing the PMAY-G houses during April 2016 to 2018 (March 2018) in this section.

Direct employment through PMAY-G:

The completed houses and houses under construction under PMAY-G till March 05, 2018 are around 23.52 lakh and 21.28 lakh, respectively.

The estimated overall direct employment due to PMAY-G house for completed houses appears to be approximately 40.07 crore person-days. Of this, nearly 16.04 crore person-days are skilled labour and the remaining 24.03 crore person-days are unskilled labour force. For houses under-construction, the total employment generated for both the years turns out to be 4.82 crore for skilled labour and 7.60 crore person days for unskilled labours till March 05, 2018. If all the beneficiaries have taken the support of MGNREGS and utilised 90 days or 95 days of unskilled labour under the scheme, then the estimated number of person-days would have been 21.46 crore till 5th March 2018 (Table 1).

Estimation of Indirect Employment:

In this section, we try to understand the indirect effect of PMAY-G expenditures on both employment and output in India. The analysis is done using Input-Output Analysis propounded by (Leontief, 1936). The Input-Output analysis is widely used as an analytical tool to analyse the inter-linkages between the sectors of an economy through the use of Leontief Inverse Matrix, which is also known as 'multiplier matrix' (Leontief, 1936). The method allows the estimation of both direct and indirect impact of a particular sector on different parameters of economic performance.

Further, an attempt has been made to assess the increase in the demand for construction material due to the expenditure incurred on both completed houses and houses under-construction in PMAY-G. The demand for bricks has gone up by 3063.14 crore (in numbers) during the last two years. Similarly, the demand for cement has increased by 23.61 crore bags, steel by 1.75 crore quintal, and sand by 3.95 crore cubic meter. Such increase in the input demand also

Table 1: Employment Generated under PMAY-G
(Cumulative estimates up to March 05, 2018) person-days in crore

Employment Generated	Completed Houses	Under Construction Houses	Total
Skilled	16.04	4.82	20.85
Unskilled	24.03	7.60	31.62
of which MGNREGS	21.46	7.16	28.62
Total	40.07	12.42	52.47

(Source: NIPFP estimations and AwaasSoft (accessed on 05.03.2018))

has implications on the additional job creation (indirect employment) in the economy. The increased demand for the construction-related materials has generated 2.16 lakh additional jobs in the economy. About 57 thousand additional jobs have been generated each in bricks and cement industry. Similarly, about 58 thousand jobs have been created in the iron and steel industry due to increased demand for GCI sheets and steel.

Impact of PMAY-G on both Direct and Indirect Employment:

The benchmark estimates are used to examine the impact of PMAY-G expenditure incurred during 2016-17 and 2017-18 through multiplier analysis. Further, the cumulative expenditure in the PMAY-G could have generated 94.53 lakh additional jobs in the economy. Out of this, 83.35 lakh are directly employed in the residential construction sector (Table 3.3). This translates to an increase in the total employment by 1.77 per cent. Similarly, the overall GVA is expected to increase by 0.55 per cent (Table 2).

The total PMAY-G estimated expenditure could have generated 94.53 lakh jobs in the economy showing an employment growth of 1.77 per cent. Out of this, 83.35 Lakh are directly employed in the residential construction sector while 1.99 lakh from the employment related manufacturing sector.

Estimations based on different Scenarios:

The estimates made earlier is based on total volume of expenditure including assumed beneficiary contributions. However, the beneficiary contribution varies both in terms of quantum and beneficiaries affordability. All the beneficiaries may not be in a position to contribute additionally. Therefore, an attempt is made to estimate the



impact of PMAY on direct and indirect employment in three scenarios where beneficiary contributes no additional resource (Case A), upto 35000 (Case B) and upto 70000 (Case C). This is based on our earlier estimates where we found that beneficiary contributes about 69,000 to 75,000 as per PAHAL design.

Direct employment under three scenarios:

The total direct employment generated varies from 34.86 Crore Person-days under Case A without any contribution from the beneficiary to 43.00 crore person-days with additional contribution of Rs. 35000 from the beneficiary under Case B. The employment generation estimates to be about 51.13 cror person-days if the beneficiary contributes Rs. 70000 additionally under Case C. Total Unskilled labour force varies from 20.36 core person-days under Case A to 25.10 crore person-days under case B and 29.84 crore under Case C. Similarly, the estimated numbers for skilled labour force are 14.50 core, 17.90 crore and 21.30 crore, respectively, under these three cases. (In the report,

Table 2: Changes in Employment due to PMAY-G expenditure

Industry	2016-17	2017-18	In Completed houses	In house under construction	Grand Total
Addition to Employment (In Lakh Jobs)					
Residential Construction	45.65	17.16	62.81	20.54	83.35
Construction related Mfg	1.09	0.41	1.50	0.49	1.99
Total	51.77 (0.97)	19.46 (0.36)	71.24 (1.33)	23.30 (0.43)	94.53 (1.77)

(Source: Calculated using the benchmark estimates of IO table 2009-10 for India. The figures in parentheses represent percentage change as compared to benchmark estimates.)

we have also estimated indirect employment in three different scenarios).

Conclusion:

In this paper, an attempt has been made to present a summary of results on the impact of rural housing scheme on the employment in India that are estimated in Bhanumurthy et al (2018). As the construction in general and rural housing, in particular, is expected to have strong forward linkage with other sectors in the economy, the impact on employment can be through direct as well as indirect channels. Here the estimations are made for the period April 2016 to March 5, 2018. The direct employment has been calculated in terms of person-days generated based on the sample designs for rural housing. In the case of indirect employment, the report uses the Input-Output table as it provides the multipliers for employment, value addition as well as output.

Based on information on completed and under construction houses since 2016-17, the scheme could have generated about 52.47 crore person-days. Of this, nearly 20.85 crore person-days are for skilled labour and the remaining 31.62 crore person-days are for the unskilled labour force in both years. The direct employment generated through completed houses stands at 40.07 crore person-days (24.03 crore person-days unskilled and 16.04 Crore person-days skilled labour force) and that of under construction houses is 12.42 crore person-days (7.60 Crore person-days unskilled and 4.82 Crore person-days skilled labour force). If all the beneficiaries have taken the support of MGNREGS and utilised 90 days or 95 days of unskilled labour depending on the region, then the estimated number of person-days generated under MGNREGS scheme could be 21.46 crore person-days for completed houses and 7.16 crore person-days for under construction houses that adds up to a total of 28.62 Crore person-days.

By using the Input-Output tables, we find that the scheme could have generated 94.53 lakh jobs (both direct and indirect) in the economy since its inception up to March 5, 2018. Out of this, 83.35 lakhs are directly employed in the residential construction sector. Overall, it suggests that given the improvement in the way the revamped rural housing scheme is implemented,

the impact on employment and output, two major macroeconomic parameters, could be substantial. Further, it could have also played as automatic stabilizer in the economy especially when the private investment activities are subdued.

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RURAL HEALTH : EMERGING CHALLENGES

Chetan Chauhan

Healthcare delivery in rural India is now uniquely poised to undergo a change at all its stages — prevention, diagnosis, and treatment, as the government focus on the sector has increased a lot in the recent past. The real change will come when public and private sectors come together to fill in the gaps and ensure that medical personnel are deployed in adequate numbers in rural India. The sector can evolve with the use of innovation to bridge intent and execution. The future ahead appears promising.

As said across the world, healthcare is the right of every individual but lack of quality infrastructure, dearth of qualified medical functionaries, and non-access to basic medicines and medical facilities thwarts its reach to more than half of India's population. And the worst sufferers are people in villages, where the condition of medical facilities is deplorable, even though improvement has been there in recent years. Though a lot of policies and programs are being run by the Government but the success and effectiveness of these programs is questionable due to gaps in the implementation and unavailability of quality healthcare personnel.

In rural India, where the number of Primary health care centers (PHCs) is limited, 8% of the centers do not have doctors or medical staff, 39% do not have lab technicians and 18% PHCs do not even have a pharmacist. According to latest health survey, India also accounts for the largest number of maternity deaths, majority of which takes place in rural India. Although rural India has seen a spurt in unregulated private sector, the facilities are dismal with mostly unqualified persons running these centres.

Sub Centre:

The Sub Centre is the most peripheral and first contact point between the primary health care system

and the community. Sub Centres are assigned tasks relating to interpersonal communication in order to bring about behavioral change and provide services in relation to maternal and child health, family welfare, nutrition, immunization, diarrhoea control and control of communicable diseases programmes.

Each Sub Centre is required to be manned by at least one auxiliary nurse midwife (ANM) / female health worker and one male health worker. Under National Rural Health Mission (NRHM), there is a provision for one additional second ANM on contract basis. One lady health visitor (LHV) is entrusted with the task of supervision of six Sub Centres. The past few years has seen a significant increase in number of sub-centres with over two lakh of them functioning as on 31st March, 2018. There is significant increase in the number of sub-centres in the states of Rajasthan, Gujarat, Chhattisgarh, Karnataka, Jammu & Kashmir, Odisha, Tripura, Madhya Pradesh and Kerala.

Primary Health Centre (PHC):

PHC is the first contact point between village community and the medical officer. The PHCs were envisaged to provide an integrated curative and preventive health care to the rural population with emphasis on preventive and promotive aspects of health care. The PHCs are established and maintained



More beds, more facilities, more hospitals and more doctors

- 20 new super speciality AIIMS like hospitals being set up
- Since July 2014, 1675 hospital beds added in the six functional AIIMS (including 850 beds added in the last one year)
- 2 new AIIMS announced for Jharkhand and Gujarat in 2017-18
- 73 government medical colleges being upgraded
- Total 92 medical colleges (46 government and 46 private) have been set up in last four years, which resulted in increase of 15,354 MBBS seats
- Total 12,646 PG seats have been increased in last four years

by the State governments under the Minimum Needs Programme (MNP)/ Basic Minimum Services (BMS) Programme.

As per minimum requirement, a PHC is to be manned by a medical officer supported by 14 paramedical and other staff. Under NRHM, there is a provision for two additional staff nurses at PHCs on contract basis. It acts as a referral unit for 6 Sub Centres and has 4-6 beds for patients. The activities of PHC involve curative, preventive, promotive and family welfare services.

There were 28,650 PHCs functioning in the country as on March, 2018, an increase of over 3,000 PHCs as compared to the level that existed in 2005. Significant increase was reported from Karnataka, Assam, Rajasthan, Jammu & Kashmir and Chhattisgarh and Bihar. Percentage of PHCs functioning in government buildings has increased significantly from 78% in 2005 to 92.9% in 2018. The number of allopathic doctors at PHCs has increased from 20,308 in 2005 to 29,124 in 2018, which is about 35% increase. Shortfall of allopathic doctors in PHCs was 11.8% of the total requirement for existing infrastructure.

Community Health Centres (CHCs):

CHCs are being established and maintained by the State government under MNP/BMS programme. As per minimum norms, a CHC is required to be manned by four medical specialists i.e. surgeon, physician, gynecologist and pediatrician supported by 21 paramedical and other staff. It has 30 in-door beds with one OT, X-ray, labour room and laboratory facilities.

It serves as a referral centre for 4 PHCs and also provides facilities for obstetric care and specialist consultations. As on March 2018, there were 5,924 CHCs functioning in the country with substantial



increase reported from Uttar Pradesh, Tamil Nadu, West Bengal, Rajasthan, Odisha, Jharkhand, Kerala, Gujarat and Madhya Pradesh. Number of CHCs functioning in government buildings has also increased during the period 2005-2017.

In addition to 4156 Specialists, 15,350 General Duty Medical Officers (GDMOs) are also available at CHCs as on March, 2018. There was huge shortfall of surgeons (86.5%), obstetricians & gynaecologists (74.1%), physicians (84.6%) and paediatricians (81%). Overall, there was a shortfall of 81.6% specialists at the CHCs vis-a-vis the requirement for existing CHCs.

First Referral Units (FRUs):

An existing facility (District Hospital, Sub-divisional Hospital, Community Health Centre etc.) can be declared a fully operational First Referral Unit (FRU) only if it is equipped to provide round-the-clock services for emergency obstetric and new born care, in addition to all emergencies that any hospital is required to provide. At present, there are 3,376 FRUs functioning, out of which 94.2% have operation theatre facilities, 96.3% have functional Labour Room while 68.9% have blood Storage/ linkage facility.

To control the spread of diseases and reduce the growing rates of mortality due to lack of adequate health facilities, special attention needs to be given to the health care in rural areas. The key challenges in the healthcare sector are low quality of care, poor accountability, lack of awareness, and limited access to facilities.

Challenges and Opportunities:

As per the latest estimates put forward by the

Ensuring affordable & quality healthcare

- 1,054 essential medicines, including lifesaving drugs, brought under price control regime after May 2014, giving the consumer total benefit of more than Rs. 10,000 crore
- Prices of cardiac stents & knee implants capped by 50-70%, resulting in significant savings to the common man
- Medicines get affordable with Pradhan Mantri Bhartiya Janaushadhi Kendras selling generic medicines throughout the country. More than 3,000 stores are operational, resulting savings of over 50% to the common man
- AMRIT pharmacies provide drugs for cancer and cardiovascular diseases along with cardiac implants at a 60 to 90 per cent discount on prevailing market rates
- Pradhan Mantri National Dialysis Program helps provide free dialysis services for poor and subsidized services to all patients. 497 dialysis units have been made operational and around 2.5 lakh patients have availed services with nearly 25 lakh dialysis sessions held so far

Minister of State for Health and Family Welfare, of the total 28,650 Primary Health Centres (PHC) in the country, 15,700 have only one doctor and 1,974 centres don't have a single doctor. Furthermore, in about 10,000 centres, there are lab technicians needed while 480 are yet to have a pharmacist.

According to a United Nations report on healthcare, around 75% of the healthcare infrastructure, including medical specialists and doctors are concentrated in urban areas in India even though only 27% of the population lives in urban parts. India meets the global average in the number of physicians, but 74 per cent of its doctors cater to a third of the urban population, or no more than 442 million people, according to a KPMG report released in 2017. The country is 81 per cent short of specialists at rural community health centres (CHCs), and the private sector accounts for 63 per cent of hospital beds, according to government health and family welfare statistics. Even though the government is putting in strenuous efforts to enhance the current healthcare systems by opening PHCs and helping the poor via free medical facilities, qualitative and quantitative availability of primary healthcare services is very less in remote areas.

However, a parliamentary committee has very recently recommended that all doctors passing from the Indian medical colleges must serve in the rural areas for at least one year so that the shortage of doctors can be addressed. Some states have made it compulsory for the medical graduates from the government medical colleges to serve in the remote areas. Perhaps, it is a ray of hope but there remains still big challenge for India to face for rural healthcare planning.

Health Minister Shri J.P. Nadda while releasing National Health Profile 2018 said that due to improvement in rural health infrastructure, India has made substantial progress on several indicators in the recent years and stated that its national health indicators like Infant Mortality Rate (IMR), Maternal Maternity Rate (MMR) and Total Fertility Rate (TFR) are declining faster than before. He said India has shown impressive gains with 22% reduction in Maternal Mortality since 2013.

Way Forward:

The only way to bring a ray of hope is by implementing defined policy with a set of proper guidelines, which will ensure sustainability of rural healthcare plans. Health experts say this idea is also

going to attract the private sectors, wherein investors would be interested in making an investment in rural healthcare segments like remote diagnostics, telemedicine services and operation of other rural health-related services. Thereby, these private players could address the emerging health issues and fill the healthcare gaps that exist because of limitations in public funded infrastructure.

The Union Budget 2017-18 has given a lot of impetus to rural health with allocation for the sector increased by around 27% but the investment can bring huge change only if the private sector provides a matching investment to boost rural health care infrastructure. However, so far the private sector has been unwilling to invest in the rural sector considering the returns are poor. But, they need to as the future market is there.

Information Technology (IT) can play a big role with IT applications being used for social-sector schemes on a large scale to improve access to healthcare in rural parts. Hospitals empanelled under the government insurance scheme are IT-enabled and connected to servers in districts. Beneficiaries can use a smart card that allows them to access health services in any empanelled hospital. For that, more private hospitals are needed in the rural areas.

Ayushman Bharat: Rural Healthcare Redefined

Under the Rashtriya Swasthya Suraksha Yojana, although all poor families are covered, but they are not getting real benefit as healthcare facilities in rural areas are not up to the mark, forcing them to travel to urban areas. This year, however, the government has increased the annual limit per family increased from Rs 30,000 to Rs 1,00,000, with an additional "top-up" of Rs 30,000 for senior citizens. Officials estimates that enrolling all BPL families in the country in health-insurance programmes would cost anywhere from Rs 2,460 crore to Rs 3,350 crore.

However, an unanticipated unplanned healthcare emergency is one of the topmost causes of financial ruin in India. The country has one of the lowest per capita healthcare expenditures in the world. Government contribution to insurance stands at roughly 32 per cent, as opposed to 83.5 per cent in the UK. The high out-of-pocket expenses in India stem from the fact that 76 per cent of Indians are yet to get health insurance.

Karnataka, Tamil Nadu and Andhra Pradesh governments have good government run cashless health insurances schemes for all benefitting rural

Ayushman Bharat

Ayushman Bharat to be the world's largest health insurance initiative



Rs. 5,00,000

It will provide comprehensive health coverage upto Rs. 5,00,000 per family per year to around 50 crore people



1,50,000 Sub Centres

1,50,000 Sub Centres & Primary Health Centres being transformed as Health & Wellness Centres (HWCs) to provide comprehensive primary healthcare services

population to a large extent. North states are, however, lacking in providing comparative healthcare facilities. Delhi government last year announced a new scheme that provides comprehensive health insurance cover.

The situation may dramatically change soon as the government is introducing universal health protection scheme called Ayushman Bharat. Twenty five states have already signed with the Union Health Ministry till end of June to start the scheme.

Union Health Minister further said that Ayushman Bharat will provide comprehensive healthcare to the people as 1,50,000 sub-centres will be converted into Health and Wellness Centres (HWCs). "The H&WC would provide preventive, promotive, and curative care for non-communicable diseases, dental, mental, geriatric care, palliative care, etc, he said. "It will be cashless and paperless access to services and will be available for the beneficiary families at the point of service in both public and private empanelled hospitals across India," He further said that the beneficiaries under the scheme can avail services anywhere in India and it is expected to bring a visible relief to the target families by mitigating the financial risk arising out of catastrophic health episodes.

The scheme will cover over 10 crore poor and vulnerable families (approximately 50 crore beneficiaries) providing coverage upto 5 lakh rupees per family per year for secondary and tertiary care hospitalization. Ayushman Bharat - National Health

Protection Mission will subsume the on-going centrally sponsored schemes - Rashtriya Swasthya Bima Yojana (RSBY) and the Senior Citizen Health Insurance Scheme (SCHIS).

At the national level to manage, an Ayushman Bharat National Health Protection Mission Agency (AB-NHPMA) would be put in place. States/ UTs would be advised to implement the scheme by a dedicated entity called State Health Agency (SHA). They can either use an existing Trust/ Society/ Not for Profit Company/ State Nodal Agency (SNA) or set up a new entity to implement the scheme. States/ UTs can decide to implement the scheme through an insurance company or directly through the Trust/ Society or use an integrated model.

According to officials of Health Ministry, the expenditure incurred in premium payment will be shared between Central and State Governments in specified ratio as per Ministry of Finance guidelines in vogue. The total expenditure will depend on actual market determined premium paid in States/ UTs where Ayushman Bharat - National Health Protection Mission will be implemented through insurance companies. In States/ UTs where the scheme will be implemented in Trust/ Society mode, the central share of funds will be provided based on actual expenditure or premium ceiling (whichever is lower) in the pre-determined ratio. The mission will target about 10.74 crore poor, deprived rural families and identified occupational category of urban workers' families as per the latest Socio-Economic Caste Census (SECC) data covering both rural and urban. The scheme is designed to be dynamic and aspirational and it would take into account any future changes in the exclusion/ inclusion/ deprivation/ occupational criteria in the SECC data.

Conclusion:

Healthcare delivery in rural India is now uniquely poised to undergo a change at all its stages — prevention, diagnosis, and treatment, as the government focus on the sector has increased a lot in the recent past. The real change will come when public and private sectors come together to fill in the gaps and ensure that medical personnel are deployed in adequate numbers in rural India. The sector can evolve with the use of innovation to bridge intent and execution. The future ahead appears promising.

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Ayushman Bharat-National Health Protection Mission (NHPM) Salient Features:

Impact:

- Major step towards universal health coverage.
- Poised to be the largest public funded health insurance scheme in the world.
- In synergy with Comprehensive Primary Health Care (through the 1.5 lakh Health & Wellness Centres), will strengthen the public health infrastructure.
- Substantial reduction in out-of-pocket expenditure on healthcare services.
- Will contribute immensely to ease of living and will enable beneficiaries to health facilities from any part of the country.
- Will cater to the unmet needs of the population which remained hidden due to lack of financial resources.
- Will lead to:
 - a. timely treatments;
 - b. improvements in health outcomes;
 - c. patient satisfaction;
 - d. improvement in productivity and efficiency, and;
 - e. job creation thus leading to improvement in quality of life.

Salient features:

- Aimed to protect the poorest from catastrophic healthcare spending.
 - a. will protect about 50 crore people (from more than 10 crore families).
 - b. these people belong to the poor and vulnerable sections, identified through Socio Economic Caste Census (SECC) data.
- This will give underprivileged families the financial support required when faced with illnesses requiring hospitalization.
- Proposed benefit coverage: Rs. 5,00,000/- per family, per year.
- Increased benefit cover to nearly 40% of the population, covering almost all secondary and many tertiary hospitalizations
- No family size:
 - a. ensuring all members of designated families specifically girl child & senior citizens get coverage. Suggested to preferably make woman as the head of family.
- Services shall be:
 - a. cashless & paperless.
 - b. at point of service.
 - c. in both public and empanelled private facilities.
 - d. portability anywhere in the country.
- Provision for providing e-card to all enrolled families.
- AB-NHPM will subsume the on-going centrally sponsored scheme "Rashtriya Swasthya Bima Yojana" (RSBY) and Senior Citizen Health Insurance Scheme (SCHIS).
- AB-NHPM will leverage on Comprehensive Primary Health Care through the 1.5 lakh Health and Wellness Centres for preventive, promotive and curative care and will ensure seamless continuum of care. This will avoid overcrowding and improve quality of care at secondary and tertiary facilities, and provide universal health coverage and make services equitable, affordable and accessible.
- Proposed to do away with smart card based identification system as under RSBY and move to SECC database & Aadhaar based identification system. However, no person will be denied benefits in the absence of Aadhaar.
- States will be free to choose the modalities for implementation.
- They can implement through insurance company or directly through Trust/ Society or use mixed mode.
- Strengthening of Public Health Care System - Public hospitals will get additional funds through claims received from insurance companies/ Trust for treatment given to beneficiaries.
- A well-defined Complaint & Public Grievance Redressal Mechanism, actively utilising electronic, mobile platform, internet as well as social media, is proposed to be put in place.
- AB-NHPM would create robust safeguards to prevent misuse/ fraud/ abuse by providers and users.
- Pre-Authorisation will be made mandatory for procedures with moral hazard.

TRANSFORMING DRINKING WATER INFRASTRUCTURE

Dr. P. Siva Ram, Vishnu PartheepTej P

Ministry of Drinking Water & Sanitation has launched Swajal Scheme in 115 Aspirational districts of India to provide villages with sustained piped water supply powered by solar energy. In this community owned Drinking water Scheme, the management of this operation is in the hands of local villagers. The scheme trains hundreds of rural technicians for operation and maintenance of Swajal units. Under the scheme, 90 per cent of this project is funded by the Government and 10 per cent is funded by the beneficiary communities.

Development in India is distributed unevenly. The conditions of living in many districts lags far behind compared to progressing districts. Even in better off states, there are pockets of backward areas, which need special interventions by the Governments. To quickly and effectively transform these districts by 2022 in line with the Government's vision of creating a 'New India', NITI Ayog has recently launched the Aspirational Districts Programme. In this context, 115 districts have been selected by NITI Ayog from 28 states based on six socio-economic parameters, pertaining to health and nutrition, education, financial inclusion and skill development, agriculture and water resources, and basic infrastructure including drinking water is one of the core dimensions. For this, the Government promotes Public-Private Partnerships (PPPs), aided by technology to bring radical transformation of these aspirational districts. Besides, 35 districts that face Left Wing Extremism (LWE) violence and 15 districts from Jammu and Kashmir have also been included.

A direct relationship exists between drinking water, health and overall well-being. Consumption of contaminated drinking water along with lack of personal hygiene and improper disposal of waste has been the major causes of many diseases in rural areas of India. High rates of infant mortality, severe wasting and stunting among children, high rates of morbidity among the populace and overall low life expectancy can be largely attributed to unsafe drinking water. In the early years of independence, people relied largely on traditional wells, rivers, hand pumps, etc for their daily drinking water needs. It was in this context that the NRDWP was launched in 2009 with the aim to provide every rural person with adequate safe water for drinking, cooking and other basic needs on a sustainable

basis, with water quality standards, which should be conveniently accessible at all times and in all situations. The NRDWP emphasizes on community contributions and community management for providing safe drinking water at grassroots level through institutions like Panchayati Raj Institutions (PRIs) and Village Water and Sanitation Sub committees (VWSSCs). There is significant improvement in water availability in the present times due to National Rural Drinking Water Programme (NRDWP). This is mainly due to the focus of NRDWP shifting towards providing piped water supply, a change brought in by the 12th Five Year Plan.

The recently announced Swajal schemes in 115 aspirational districts of the country will involve an outlay of Rs 700 crores through flexi-funds under the existing NRDWP budget. These schemes aim to provide villages with piped water supply powered by solar energy. The scheme trains hundreds of rural technicians for operation and maintenance of Swajal units. This scheme is launched by the Government for sustained water supply in rural areas. 90 per cent of this project is funded by the Government and 10 per cent is funded by the beneficiary communities. The management of



this operation is in the hands of local villagers and hundreds of technicians would be trained under this scheme to maintain and operate the units. All the villages will get water supplied through fitted pipes. This will ensure that the water is not contaminated. The maintenance of these pipes would be taken care of by the technicians.

Steps involved in Swajal Pilot Project:

Swajal Pilot Project follows the steps mentioned below. Monitoring and Evaluation would be part of all these steps.

- (a) Preparatory Steps:** This includes dissemination of the Swajal Pilot Project details and principles in the state and compilation of existing water sources database, and institutional mobilization to implement the program.
- (b) Scheme Selection:** Schemes to be covered under various categories are identified and prefeasibility studies to collect basic data of the schemes is conducted.
- (c) Implementation of the Project Cycle:** Planning and Implementation of the schemes, following a set of defined principles and activities and involving the community.
- (d) Post-Implementation Support:** Support to the GPs post-implementation to undertake operation and maintenance and monitor sustainability

Community Contribution:

- a) Contribution from stakeholders against capital cost of water supply schemes:**

The Government of India and the State Government share will be as per the existing NRDWP guidelines applicable to various states. The concerned Gram Panchayat will contribute in cash 5% capital. General category users will contribute INR 2000 whereas SC/ST will contribute INR 1000 towards partial capital cost sharing.

- b) Contribution from stakeholders against operation and maintenance of schemes:**

GP will contribute 15% of Annual devolved fund from Finance Commission towards O&M expenses. The scheme will also be covered initially for two years through insurance coverage by partial (50%) cost sharing by the concerned Gram Panchayat and partial (50%) from Project cost. In case of emergencies, the State Govt. will restore the defunct schemes and will also take up replacement and expansion of the schemes after expiry of the insurance period.

Institutional setup:

- **State level:**
- **State Water and Sanitation Mission (SWSM):** SWSM of the State is the highest policy-making body for Swajal Pilot Project.
- **Department of Drinking Water & Sanitation:** DDWS or the department responsible for implementation of rural drinking water supply is the nodal agency for this Pilot Project and implement the project by coordinating



with the sector stakeholders such as health, education departments, etc

- **District level:**

- **District Water and Sanitation Mission:** It reviews the implementation of the Swajal Pilot Project; (ii) guide the District Water and Sanitation Committee (DWSC) in planning, designing, implementation and O&M of water supply scheme; (iii) approve the annual budget related to the scheme; (iv) channel funds to GP and VWSSC; (v) assist GP/VWSSC in procurement and construction of schemes; and (vi) provide dispute resolution mechanism for GPs.

- **District Water and Sanitation Committee:** The DWSC is being established in pilot districts, if not already available, for appraising the schemes up to a certain prescribed limit (as per decisions taken by the respective State Government), being responsible for the selection of GPs, SOs, and carrying out M&E. The committee is given technical support by the DWSM.

- **District Level Implementing Agency:** For implementation of works of the Pilot Project, the implementing agencies district-level officers provide technical guidance and assistance to the VWSSCs according to the Swajal Pilot principles and will report to the DWSMs.

- **Village Level:**

- **Gram Panchayat (GP):** The GP mobilizes and support the formation of VWSSC to ensure participatory approach. It empowers and provides capacity support to the VWSSC,

ensure O&M and cost recovery of the scheme, and be responsible for fund flows, scheme approval, accounts management, auditing, M&E, and conflict resolution.

- **Village Water Supply and Sanitation Sub Committee (VWSSC):** VWSSC is formed for each water supply scheme and for each village in the case of multi village scheme, consisting of beneficiaries of the scheme. The VWSSC is responsible for scheme planning, designing, procurement, construction, O&M, tariff fixation and revision, community contributions (capital and O&M), accounts management, and auditing. The VWSSC is also responsible for procurement and construction of scheme

Roles and responsibilities of VWSSC:

- i. The Village Water and Sanitation Sub-Committee/Sub-Committees collects voluntary contribution (cash or labour) from the village community for capital cost of construction works of the schemes and also for operation and maintenance of the schemes. The Sub-Committees will make efforts for spreading awareness regarding sanitation and hygiene among the villagers. This Sub-Committee deliberates on technical alternatives of construction works and adopt the same so that the schemes being constructed are according to the expectations of the villagers.
- ii. To plan, design, implement, operate and maintain water supply and sanitation schemes.
- iii. To collect user charges from the users of the drinking water schemes for maintenance of the schemes and to take appropriate action in case of non-payment of charges.
- iv. To procure construction material as per rules and to ensure quality of the material procured.
- v. To receive capital investment amount from Gram Panchayat and to deposit the same in the capital cost account of the Village Water and Sanitation Sub-Committee and to incur expenditure as per planning of the scheme.
- vi. To maintain details of capital cost investment.
- vii. To fix user charges for operation and maintenance of water supply and sanitation schemes.



viii. To furnish monthly financial progress report to Implementing Agency.

Maintenance of accounts by VWSSC:

- i. Village Water and Sanitation Sub-Committees shall open two separate accounts. The Sub-Committee will maintain separate accounts for “Capital Cost” and “Operation and Maintenance”. The audit of these accounts will be carried out by the Village Water and Sanitation Sub-Committee/ Gram Panchayat.
- ii. These accounts of Village Water and Sanitation Sub-Committee will be operated and maintained by the Chairman and Treasurer of the said Sub-Committee. The Community Accountant at Gram Panchayat level provided by the implementing agency shall also assist the VWSSC in the maintenance of the accounts and auditing.
- iii. The planning, implementation, operation and maintenance of drinking water and sanitation schemes will be done by Village Water and Sanitation Sub-Committee and the same will be approved by Gram Panchayat in its open meeting.

Roles & Responsibilities of Gram Panchayats:

- i. To approve the schemes prepared by Village Water and Sanitation Sub-Committees and submitted through Jal Prabandhan Committee.
- ii. The Gram Panchayat will receive the funds from the Implementing Agency and manage the funds received for drinking water schemes and will transfer the amount received in Gram Nidhi by cheque to the Village Water and Sanitation Sub-Committees within 15 days. Separate ledgers will be maintained for different projects.
- iii. The maintenance of accounts of the funds received for drinking water scheme will be done at the level of Gram Panchayat according to the proforma/formats prescribed by the Accountant General.
- iv. The Gram Panchayat will ensure auditing of Gram Nidhi account and the Village Water and Sanitation Sub-Committees will ensure auditing of the account of the Sub-committee.

- v. An account for drinking water works will be opened at Gram Panchayat level and will be operated by Gram Pradhan and Secretary of Gram Panchayat. However, if Gram Panchayat Secretary is not available, in that situation, the Project may nominate a worker as Co-Secretary. A Community Accountant shall be made available for maintenance of such accounts by the project.
- vi. Gram Panchayat will make efforts for resolving disputes relating to drinking water at Gram Panchayat level.

Conclusion:

The demonstrated success of reform in rural water supply and sanitation sector based on demand driven approaches has contributed a lot leading to the formulation of a central government level program for mainstreaming Swajal principles countrywide. The lessons learnt from earlier models based on demand driven and community centred principles include partnership between village communities, NGOs and the government as the facilitator and co-financing has worked successfully. The possibility of misappropriating and misusing the funds becomes minimal if transparency at each stage is adhered and monitored by stakeholders. Empowerment of PRIs is a viable and sustainable option for scaling up the decentralized service delivery model. The change from a supply based model to demand based model requires a new mind set and investment at different levels for acceptance of the new model. Good facilitation and appropriate techniques have to be put in place in community management model. Some form of external support to communities is imperative to ensure long term sustainability.

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Ministry of Drinking Water and Sanitation launches Swachh Survekshan -Grameen 2018

The Ministry of Drinking Water and Sanitation launched the Swachh Survekshan Grameen 2018 (SSG 2018). An independent survey agency will conduct the survey in all districts from 1st to 31st August 2018, and the results will be announced in the form of a ranking of all districts and states on the basis of quantitative and qualitative sanitation (Swachhata) parameters. The top performing states and districts are expected to be awarded on 2nd October 2018.

The audio-visual communication campaign, featuring prominent celebrities including Swachh Bharat ambassadors including Shri Amitabh Bachchan and Shri Sachin Tendulkar, was also launched. Also, the SSG 2018 logo and the SSG 2018 brochure detailing essential facts about the initiative was also released.

The objective of SSG 2018 is to undertake a ranking of states and districts on the basis of their performance attained on key quantitative and qualitative SBM-G parameters. In the process, through a countrywide communication campaign, rural communities will be engaged in the improvement of the sanitation and cleanliness of their surrounding areas.

As part of Swachh Survekshan Grameen, 6,980 villages in 698 districts across India will be covered. Total 34,000 public places namely schools, anganwadis, public health centres, haat/bazaars/religious places in these villages will be visited for survey. Citizens' feedback will be collected from over 50 lakh citizens on SBM related issues through direct interaction as well as online feedback. During the process, 65% weightage has been assigned to the findings and outcome from the survey and 35% to the service level parameters to be obtained from the IMIS of the MDWS. The weights to different elements of the SSG would be as below:

- Direct Observation of sanitation in public places: 30%
- Citizen's Feedback on sanitation parameters: 35%
- Service Level Progress on sanitation progress in the country as per SBMG-MIS: 35%

The Secretary shared the progress figures of SBM(G) in rural India. Over 7.7 crore toilets have been built in rural India under the Swachh Bharat Mission (Grameen) since its launch in October 2014, with a usage of 93% as per an independent third-party survey conducted in 2017-18 across all States/UTs. Nearly 4 lakh villages, over 400 districts and 19 States and Union Territories have declared themselves free from open defecation.



The Secretary, Ministry of Drinking Water and Sanitation, Shri Parameswaran Iyer at the National launch of the "Swachh Survekshan Grameen-2018", in New Delhi on July 13, 2018.

Ten new Swachh Iconic Places Launched under Swachh Bharat Mission

Ten new iconic sites have been taken up under Phase III of the flagship project Swachh Iconic Places (SIP) of the Swachh Bharat Mission. SIP is a collaborative project with three other central Ministries: Ministry of Housing and Urban Affairs, M/o Culture, and M/o Tourism. It also involves local administrations in the concerned States and Public Sector and Private Companies as sponsoring partners. The project envisioned by the Prime Minister is being coordinated by Ministry of Drinking Water and Sanitation with the support of State governments and local administration. These new sites have joined the 20 iconic places under Phase I & II where special Sanitation work is already underway.

The project was launched in 2016 and iconic places under Phase I were: Ajmer Sharif Dargah, CST Mumbai, Golden Temple, Kamakhya Temple, Manikarnika Ghat, Meenakshi Temple, Shri Mata Vaishno Devi, Shree Jagannath Temple, The Taj Mahal and Tirupati Temple.

Phase II of Swachh Iconic Places was launched in November 2017, and included Gangotri, Yamunotri, Mahakaleshwar Temple, Charminar, Convent and Church of St. Francis of Assisi, Kalady, Gommateswara, Baidyanath Dham, Gaya Tirth and Somnath temple.

The third phase of SIP was launched at Mana village which is situated close to the Badrinath temple in Uttarakhand. The village, which now becomes a Swachh Iconic Place, is visited by tourists and pilgrims as it houses places of mythological interest. The places under Phase III are: Raghavendra Swamy Temple (Kurnool, Andhra Pradesh); Hazardwari Palace (Murshidabad, West Bengal); Brahma Sarovar Temple (Kurukshetra, Haryana); VidurKuti (Bijnor, Uttar Pradesh); Mana village (Chamoli, Uttarakhand); Pangong Lake (Leh-Ladakh, J&K); Nagvasuki Temple (Allahabad, Uttar Pradesh); ImaKeithal/market (Imphal, Manipur); Sabarimala Temple (Kerala); and Kanvashram (Uttarakhand)



Secretary, Ministry of Drinking Water and Sanitation, Shri Parameswaran Iyer, said that Phase I iconic sites

Ministry of Drinking Water and Sanitation Secretary Parameswaran Iyer and MDWS Director General (Special Projects) Akshay Rout visited Charminar and inspected Charminar Pedestrianisation Project works.

have seen notable initiatives taken up, like improved sewage infrastructure, drainage facilities, installation of Sewage Treatment Plant (STP), improved sanitation facilities, water vending machines (Water ATMs), Solid and Liquid Waste Management (SLWM) set-up, structure restoration, roads maintenance, lighting arrangements, beautification of parks, better transport facilities in approach and access areas besides at the main sites. The annual review of Phase I & II iconic sites for assessing the progress was done at iconic site, Charminar, Hyderabad.

Community Sanitary Complexes, SLWM, and Toilets for New HHs

Having been declared ODF in March 2018, Mizoram has a host of practices in place to sustain its ODF status. From mandatory construction of toilets for new households, to community sanitary complexes with sufficient running water, the district also has an efficient solid waste management mechanism.



Monitoring of toilet usage is carried out by

committees at village, block, district and state levels. Headed by the District SBM Committee under the chairmanship of the District Collector, these committees have representation from all line departments such as PHED, DRDA, Health, Education, Social Welfare, Information and Public Relations as well as several NGOs who were involved in the toilet construction campaign (with the

help of MGNREGA funding) from the early stages. The VWSC which has been involved in survey and selection of beneficiaries for toilet construction will now identify new households for whom toilets have to be constructed. Community sanitary complexes have been located near market places, community halls or places that see large gatherings. Sufficient water has been assured in those complexes to ensure usage and proper maintenance. Maintenance of these complexes is the responsibility of either the village authority or a local NGO.



In certain places, the sanitation

complex will have room for a small shop which is given free of rent. In turn, the shop keeper would maintain the washroom which will be operated as a pay-and-use facility that would suffice for water charges, etc.

As far as solid waste is concerned, it is collected in a trolley vehicle operated by the village council or sanitation committee, and paid for from the sanitation fee collected from households. In addition, sanitation related days/weeks such as 'Swachhta Hi Seva', 'Global Hand washing Day', etc are observed to build awareness among students and communities.

SWACHH BHARAT MISSION: SUCCESS STORIES

How Sikkim is Ensuring ODF-S, ODF-Q

The north-eastern state of Sikkim was the first state to be declared open defecation free (ODF) on 27th May, 2016. To sustain the ODF status, the state has been issuing notifications from time to time that make it mandatory for every household to have a sanitary toilet for the use of the family while coming down hard on plastic and propagating reduction in waste creation.

“Sanitation is a State subject and it is incumbent upon us to maintain the Open Defecation Free (ODF) status. This also being an obligatory duty of the local bodies, it is hereby requested to all the PRI members, Districts, Blocks and GPUs level officials/functionaries to make a collective effort towards sustaining the ODF status. Slipbacks, if any should be invariably corrected solely utilizing the resources available with the PRIs,” a circular issued by the Rural Management and Development Department of the Government of Sikkim, Gangtok, said on 1st June 2016.

Further, a notification was attached to the circular, with various amendments to the Sikkim Panchayat (Amendment) Act, 2005. Pertinent to the Swachh Bharat Mission Gramin was an amendment to Section 16 of the Act, with the insertion of “if he does not possess a hygienic sanitary latrine for use of his family.” This makes it mandatory for every home to have a toilet.

The state government has also been initiating various measures to manage waste and maintain a clean environment.

Having found huge quantities of disposable Styrofoam and other disposable items in municipal waste both in bazaars and rural areas, it has issued a notification pointing out that such products are environmental hazardous and occupy much space in their landfill. It also said that it was not healthy to eat very hot items in the Styrofoam containers.

“Therefore, the government is pleased to ban the sale and use of disposable items, such as cups, plates, spoons, containers, etc., made from Styrofoam throughout the state with immediate effect,” the order in the name of Governor of Sikkim on 19th May, 2016 said.

Another notification issued by the Government of Sikkim on 19th May, 2016 related to the rampant use of packaged drinking water during departmental meetings and functions, which not only created a huge quantity of garbage but added to the burden of the landfill.

“In order to reduce creation of garbage in the form of used drinking water plastic bottles, it is notified that the packaged drinking water bottles may not be used during any government meetings or functions,” the notification said.

As an alternative, it suggested and encouraged all departments to use filtered water or water from large reusable water dispensers or to use reusable water bottles in government functions.

Yet another notification was issued way back in February 2015 with the objective of ensuring that all households had access to toilets, whether constructed with government funding or on their own. “...it is compulsory for a household to have a functional sanitary toilet for availing any kind of grants/benefits from the government,” it said. As per this clause, any person wanting to avail a government grant or benefit had to produce a certificate from the concerned Gram Vikas Adhikari, indicating that he/she has a functional sanitary toilet in their home.



YOUTH AS AGENTS OF CHANGE

Dr Ranjeet Mehta and Ankita Rani

According to government of India data, 63.5 million people in 20-35 age group have entered the workforce in the last five years. With 55 per cent of the Indian population below the age of 25, India can boast of the largest youth population in the world — a trend that is likely to continue for at least the next two decades. This is called a demographic dividend—a large number of young workers can propel the economy to higher growth for a long time. This generation has the opportunity to bring about lasting change. Such a demographic distribution gives us an indication of the energy, enthusiasm and idealism that is available for harnessing, provided there are suitable avenues that can attract young Indians.

Young people are a crucial segment of society; they are the basis for future development. Young people are social actors of change and when young people rise up, amazing things can happen. They are the most enthusiastic group of our civilization sparkling with flame of passion. And their potential can be used fully during their youth. If this enthusiasm and ideas are regulated and utilized in a proper way, then the youth can create a revolution which will shape the India in a positive way. The youth of India have great creative energy with the positive potential to take them to greater heights. If human creativity is a special quality, then the “Never say die!” spirit is its apex. Demographically, today’s India is at its youngest best and has the power to meet any challenge with the collective consciousness and effort of all people, especially young people.

There are 1.2 billion people between the ages of 15-24 worldwide, making this the largest

youth population the world has ever seen. According to government of India data, 63.5 million people in 20-35 age group have entered the workforce in the last five years. With 55 per cent of the Indian population below the age of 25, India can boast of the largest youth population in the world — a trend that is likely to continue for at least the next two decades. This is called a demographic dividend—a large number of young workers can propel the economy to higher growth for a long time. This generation has the opportunity to bring about lasting change. Such a demographic distribution gives us an indication of the energy, enthusiasm and idealism that is available for harnessing, provided there are suitable avenues that can attract young Indians. During the independence movement, charismatic leaders were able to inspire the people with their vision and convert the struggle into a mass movement.



India growth story and the Role of Youth:

India as a young Nation, after conceding its position as the fastest growing major economy to China for a year in 2017, is likely to reclaim the position in 2018, with growth expected to accelerate to over 7.3% in the year as per the World Bank's Global Economic Prospects report. The report projected China's economic growth to slow to 6.4% in 2018 from 6.8% in 2017. The World Bank also revised India's growth estimate for 2017 to 6.7% from 7% projected in October, blaming short-term disruptions caused by the newly introduced goods and services tax (GST) and a softer-than-envisioned recovery in private investment. Global growth is projected to edge up to 3.1% in 2018, as growth in advanced economies is projected to slow while growth in emerging economies is expected to accelerate. In all likelihood, India is going to register higher growth rate than other major emerging market economies in the next decade. Private investment is expected to revive as the corporate sector adjusts to the GST; infrastructure spending increases, partly to improve public services and internet connectivity; and private sector balance sheet weaknesses are mitigated with the help of the efforts of the government and the Reserve Bank of India.



India jumped 30 spots to rank 100 in the Ease of Doing Business list brought out by World Bank. While the improvement brought laurels for the government, there are various sectors which still need the government's attention to further accelerate the speed at which businesses are done in India. While India saw an improvement in six out of ten indicators of ease of doing business, the country still didn't see improvement in trading across borders, something that the government has been gunning for at various international forums like World Economic Forum. However, the Indian government is considering the same by introducing reforms. Construction permits where the time frame for approvals during the construction cycle of a building has been brought down to 60 days, they have also recognized the procedure for corporate debtors through insolvency ecosystem.

To ensure that tax compliances have the taxpayer as a priority, the government has also introduced 'RAPID-revenue, accountability, probity, information and digitalization' for administrating the tax reforms. To improve trade across borders, online message exchange system for import clearances of agricultural commodities has been established along with the Import Data Processing and Management System (IDPMS) for data processing for payment.

The Goods and Services Tax (GST) came into effect across India from July 1, 2017. GST has turned all 36 states and union territories of India into one common market. By curbing cascading taxes, GST has also reduced the cost of local production. GST is expected to bring more businesses from the unorganised to the organised sector, thereby increasing efficiency and productivity and attracting more foreign direct investment.

To have achieved this, in a large and complex federal system of multiparty democracy, with a widely divergent interests via a constitutional amendment requiring broad political consensus, affecting potentially 7.5 million tax entities, and marshalling the latest technology to use and improve tax implementation capability, is perhaps breathtakingly unprecedented in modern global tax history. It was possible because huge of our population consists of young people who are ready to accept the change. Paying taxes has become easier in India because of factors like the introduction of GST and digitization of processes.



A fact that is captured succinctly in the World Bank Doing Business Report 2018. India improved its ranking on the Paying Taxes indicator in the report by 53 places.

A social revolution is brewing in India under the Jan Dhan Yojana for financial inclusion, Aadhaar biometric identification and mobile telecommunications, where young people have played a critical role by adopting the latest technologies. The Prime Minister's Jan Dhan Yojana (PMJDY) is a financial inclusion programme that makes services like banking, remittance and insurance available to every Indian at affordable cost. Beneficiaries can open a zero-balance account. As of August 16, 2017, 295 million new bank accounts had been opened under the PMJDY. More than 176 million of these accounts are in rural India, and around 145 million are operated by women. Aadhaar is an ambitious biometric identification system. As of 2017, the Unique Identification Authority of India had issued a unique 12-digit Aadhaar number to more than 1.19 billion Indians, covering 99.9% adults in the country. Mobile-phone adoption has been impressive in India by any standards. Already there are more than 1 billion mobile phone subscribers in India. Plans are underway to deploy 5G services for consumers as early as 2020.

Through Bharat net project more than 100,000 Gram Panchayats or Village Councils now have access to high-speed broadband. BharatNet

is probably the world's largest rural broadband project. As on December 31, 2017, 254,895 km of optical fibre cable had been laid across 109,926 Gram Panchayats as part of the project. BharatNet is expected to make digital delivery of services for health, education, livelihood, skills training, e-agriculture and e-commerce available to the rural poor, in addition to generating massive employment opportunities. Apart from BharatNet, India has more than 1 billion mobile phone subscriptions and 462 million Internet users. India improved its ranking on the Technology Readiness Pillar of the World Economic Forum's Global Competitiveness Index 2017 by three places.

India has achieved a significant progress in terms of power generation, especially in renewable energy sector. Currently, India stands fifth in terms of renewable energy capacity with an installed capacity of 70 GW while another 40 GW is under tendering or construction. The Government of India has set an ambitious revised target to install 225 GW renewable power capacity by the end of 2022.

With all these developments taking place in India, there are several challenges the country is confronting with today such as rapid urbanization, corruption, healthcare, education pollution, poverty, women safety, infrastructure gap, unemployment etc. These are the areas where youth can play a major role to make a difference in the lives of people and contribute immensely to the growth of

nation. The problems are huge but our youth has the spirit and capacity to take on any challenge. We have identified two major problems where youth in India can play a significant role at every level such as National level, state level, city level, district level, panchayat level and village level. We believe that if India needs to progress rapidly these issues are to be taken on war footing level:-

1. Clean Environment and Pollution Control
2. Education

Clean Environment and Pollution Control:

Pollution and environment protection is of the most pressing problems before humanity. It's a question of our survival. A recent report from the World Health Organization, drawing on measurements and calculations as of 2016 from air monitoring stations in 4,300 cities, establishes clearly that air pollution is a global problem. A whopping nine in 10 people on Earth breathe highly polluted air, and more than 80 percent of urban dwellers have to endure outdoor pollution that exceeds health standards, according to the WHO's World Global Ambient Air Quality Database.¹¹ of the 12 cities with the highest levels are located in India. Pollution threatens us all, but the poorest and most marginalized people bear the brunt of the burden. Cookstoves, heating fuel, and kerosene lighting are all common

sources of pollution in big cities in developing countries.

Controlling this kind of pollution requires coordinating across city and provincial boundaries over a geographic basin, but rural and urban politicians in India have vastly different constituencies, making it difficult for urbanites to convince farmers to use less polluting practices or for rural people to ask city dwellers to drive less or use clean energy.

There is concrete evidence that air pollution leads to low birth-weight, tuberculosis, ischemic heart disease, cataracts, asthma and nasopharyngeal and laryngeal cancers. New research has found that air pollution might also affect cognitive development. PM2.5 are so small that when inhaled they can enter the bloodstream, and recent medical research indicates that it can cause the degeneration of blood-brain barriers, leading to oxidative stress, neuro-inflammation and damage of neural tissue.

Youth have both special concerns and special responsibilities in relation to the environment. A number of environmental risks and hazards disproportionately affect young people, who have to live for an extended period with the deteriorating environment bequeathed to them by earlier generations. Young people will be compelled to engage in new forms of action and



activism that will generate effective responses to ecological challenges.

Youth can change their lifestyle and how it affects the environment. They can make their homes, schools and youth organizations more environmentally friendly by adopting environmentally friendly practices, recycling of different materials as well as preserving resources such as water and electricity. Engaging youth in environmental protection not only creates direct impact on changing youth behaviors and attitudes, but possibly influence their parents, relatives and families. Youth in India can be a very active voice for climate change.

Education:

Literacy and level of education are basic indicators of the level of development achieved by a society or a Nation. Spread of literacy is generally associated with important traits of modern civilization such as modernization, urbanization, industrialization, communication and commerce. Literacy forms an important input in overall development of individuals enabling them to comprehend their social, political and cultural environment better and respond to it appropriately. Higher levels of education and literacy lead to a greater awareness and also contribute in improvement of economic and social conditions. It acts as a catalyst for social upliftment enhancing the returns on investment made in almost every aspect of development effort, be it population control, health, hygiene, environmental degradation control, employment of weaker sections of the society.

Education is the key to eliminating gender inequality, to reducing poverty, to creating a sustainable planet, to preventing needless deaths and illness, and to fostering peace. And in a knowledge economy, education is the new currency by which nations maintain economic competitiveness and global prosperity. A nation's progress and development depends on the availability of this basic civil right of education to all its citizens. It was for education that a Pakistani schoolgirl, Malala Yousafzai, defied threats from the Taliban to campaign for the right to education. She survived after being shot in the head by the Taliban and has since become a global advocate for human rights, women's rights and the right to education.

An amazing transformation has occurred in the course of a generation. Young men and women in rural India are far surpassing their parents' levels of education. Two generations ago, people in remote villages were largely unlettered: there were hardly any schools in remote areas. And it is still common to find low educational levels among village residents who are 40 years old and older. But the early-morning image of a rugged but illiterate peasant pulling a plow fades before the newer reality of village children walking to schools in the hundreds. As late as 2001, only a little over 25% of all rural 18-year-olds were attending schools, the rest having dropped out earlier. By 2016, the share of 18-year-olds in schools and colleges had gone up to 70%. There is a rapidly rising trend of education in rural India.

Conclusion:

In a world where one in every four persons is a youth, every democratic system needs to absorb the aspirations of this vibrant group, especially as, across the globe, youth acquire the right to franchise at an average age of 18. The significant number of youth population in India have acted as a stimulator for nation's growth and youth form the vanguard of the nation, which when properly channelized shall be instrumental for the development of the country. This assumes significance when civil societies who are a necessary 'change agents' are run by youth or have active youth involved.

Swami Vivekananda believed that working for any social change required massive energy and spirit. Hence, he requested the youth to amplify both their mental energies and physical fitness. What Vivekananda wanted from the youth were 'muscles of iron' and 'nerves of steel'. Today, the youth are exceptionally responsive and they just need to be encouraged in their quest for justice for common benefit. Swami Vivekananda was and is not only the medium; he is himself the message as well for the youth of India. We believe that Young people of our Nation are proactive and responsible; they will bring transformational change in India.

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National Generic Document Registration System adopted in Punjab and Andaman & Nicobar Islands

The Union Minister for Rural Development, Panchayati Raj and Mines Shri Narendra Singh Tomar inaugurated the National Generic Document Registration System (NGDRS) in all sub-registrar offices in Andaman & Nicobar Islands from New Delhi through a Video-Conferencing. To aptly address the diversity and variations prevailing across the States on account of languages, processes, formulae and formats, the Department of Land Resources has developed a National Generic Document Registration System (NGDRS) through the National Informatics Centre (NIC) to include the requirements of all the States. This generic customizable software, when universally adopted in the country, will enable 'anywhere access' to data and information to both the common man and the enforcement and regulatory agencies. The transparency will be promoted due to registration through digital means and people will get the benefits in a hassle-free manner.

The NGDRS system has been piloted in 3 States (Punjab, Rajasthan, Maharashtra). 6 more states and UTs (Goa, A&N Islands, Bihar, Jharkhand, Manipur, Mizoram) are moving towards this system. The guidance and technical demos has been given to them by NIC. The Department is presently focussing on implementation of NGDRS in these 14 States, to optimally use the available funds in a cost-effective, productive and time-bound manner.

National Generic Document Registration System (NGDRS) for rural and urban areas:

Computerization of sub-registrar offices is being given focussed attention. Out of total 5083 sub-registrar offices in the Country, 4509 have been computerized and 2769 have been connected with tehsils.



The Union Minister for Rural Development, Panchayati Raj and Mines, Shri Narendra Singh Tomar inaugurating the National Generic Document Registration System (NGDRS) for Andaman Nicobar through video conferencing, in New Delhi on June 28, 2018. The Minister of State for Rural Development, Shri Ram Kripal Yadav and other dignitaries are also seen.

CONNECTING THE UNCONNECTED

Dr Ashrafuzzaman Chowdhury

The construction of roads brings various socio economic benefits to the rural areas and result in forming a strong backbone for the agro-based economy. Pradhan Mantri Gram Sadak Yojana (PMGSY) mainly focuses on development of rural roads. PMGSY was launched on 25th December, 2000 as a centrally sponsored scheme to provide road connectivity in rural areas of the country. PMGSY is designed to support Government of India's agenda to provide basic services that can improve the quality of life of the rural poor.

Rural connectivity is a key component of rural development in India. Rural roads provide basic inputs for all round socio-economic development of the rural areas. The construction of roads brings various socio economic benefits to the rural areas and result in forming a strong backbone for the agro-based economy. Pradhan Mantri Gram Sadak Yojana (PMGSY) mainly focuses on development of rural roads. PMGSY was launched on 25th December, 2000 as a centrally sponsored scheme to provide road connectivity in rural areas of the country. PMGSY is designed to support Government of India's agenda to provide basic services that can improve the quality of life of the rural poor.

Pradhan Mantri Gram Sadak Yojana (PMGSY):

PMGSY was launched in the year 2000, as a centrally sponsored programme and a one-time

special intervention. The primary objective of the programme was to provide connectivity by way of all-weather roads to unconnected habitations with population of 1000 and above by 2003 and those with population of 500 and above by 2007 in rural areas. In respect of hilly/deserted/tribal areas, the objective is to link habitations with a population of 250 and above. Upgradation of selected rural roads to provide full farm to market connectivity is also an objective of the scheme. The country now has a network of about 3,99,979 km of such roads. The works are executed by the state governments and monitored by the Ministry of Rural development through National Rural Road Development Agency (NRRDA) set up for the purpose. At the commencement of PMGSY in 2000 it was estimated that about 33,000 out of its 82,500 villages and habitations were without any all-weather road access.





works completed in the year 2008-09. It is seen that in the year 2017-18 (upto Dec 2017) 6,342 number of habitations are connected and the total length constructed is 24,673 km.

In Table-2 top five states in terms of habitations connected and road length completed under PMGSY are shown. In Madhya Pradesh total habitations connected is 14332 (12.32 per cent)

Performance of PMGSY:

Since the launch of PMGSY the state governments and the Centre have been working to achieve complete connectivity in India. Over the years, the efforts to connect rural areas have increased. The pace of road construction stood at 134 km per day under PMGSY in 2017-18.

The year-wise achievement in respect of Length of Road Works completed and Habitations connected is shown in table 1. It shows that the number of habitations connected in 2005-06 was 8,202 and the road length completed in km was 22,891 km. This was increased to 14,475 numbers of habitations and 52,405 km of road

whereas the length completed is 64839.46 km (13.71 percent) followed by Rajasthan which has 13676 (11.76 percent) habitations connected and 58701.75 km (12.41 percent) road completed respectively. In West Bengal 12304 (10.58 percent) habitations connected and 20389.95 km (4.31 per cent) of roads completed. In Uttar Pradesh and Odisha the number of habitations connected and road completed respectively is 11228 (9.65 percent) and 48348.85 km (10.23 percent) and 10137 (8.7 percent) and 36167.80 km (7.65 percent).

In May this year, the Government and the World Bank signed a \$500 million loan agreement to provide additional financing for the Pradhan

Table 1:
Year-wise Achievements in respect of Length and Habitations

(2005-2017)

Year	Achievements	
	No. of Habitations connected	Length of road works completed in (km)
2005-06	8,202	22,891
2006-07	10,801	30,710
2007-08	11,336	41,231
2008-09	14,475	52,405
2009-10	7,877	60,117
2010-11	7,584	45,109
2011-12	6,537	30,995
2012-13	6,864	24,161
2013-14	6,560	25,316
2014-15	10,799	36,337
2015-16	7,658	36,449
2016-17	11,691	47,447
2017-18 (up to Dec 17)	6,342	24,673

(Source: Annual Report, Ministry of Rural Development, Government of India)

Mantri Gram Sadak Yojana (PMGSY) Rural Roads Project, implemented by Ministry of Rural Development, which will build 7,000 km of climate resilient roads, out of which 3,500 km will be constructed using green technologies.

The World Bank has supported PMGSY since its inception in 2004. So far it has invested over \$1.8 billion in loans and credits mostly in the economically weaker and hill states across North India-Bihar, Himachal Pradesh, Jharkhand, Meghalaya, Rajasthan, Uttarakhand, and Uttar Pradesh. It has built and improved about 35,000 km of rural roads and benefited about eight million people with access to all-weather roads.

Adequate maintenance of the existing 4.6 million km of road network is emerging as a major challenge. Many parts of the existing road network are either vulnerable to or have already suffered damage from climate induced events such as floods, high rainfall, sudden cloud bursts and land-slides.

The PMGSY and the Bank's involvement under this additional financing, will emphasize on managing the rural road network through green and climate-resilient construction using green, low-carbon designs and new technologies – far beyond merely funding civil works. This will be done through the following measures:



- Climate vulnerability assessment during the design process to identify the critical locations affected by floods, water-logging, submergence, cloud bursts, storms, landslides, poor drainage, excessive erosion, high rainfall, and high temperatures.
- Special treatment for flood-affected areas through adequate waterways and submersible roads to allow easy passage of water, use of concrete block pavements, and improved drainage;
- Use of environmentally optimized road designs and new technologies which uses local and marginal materials and industrial by-products such as sand, local soils, fly ash, brick kiln wastes, and other similar materials in place of crushed rocks;
- Innovative bridges and culverts through use of pre-fabricated/pre-cast units for roads and bridges having better ability to withstand

Table 2:
Habitations connected and length completed under PMGSY (Top five states)

States	Habitations connected upto March 2016	Length completed upto March 2016
Madhya Pradesh	14332	64839.46
Rajasthan	13676	58701.75
West Bengal	12304	20389.95
Uttar Pradesh	11228	48348.85
Odisha	10137	36167.80

(Source: Annual Report NRRDA, Ministry of Rural Development, Government of India)

earthquakes and water forces such as continuous beams, bearing free construction, and river training works;

- Use of hill cutting material in hill roads ensuring its productive use and resolving its disposal problem, use of bio-engineering measures, improved drainage and other treatments for landslide prone areas and providing adequate slope protection.

The Additional Financing will also fill the gender gap by creating employment opportunities for women in construction and maintenance. The earlier project had piloted community-based maintenance contracts through women self-help groups (SHGs) for routine maintenance of 200 km of PMGSY roads in Uttarakhand, Meghalaya and Himachal Pradesh. SHG-run maintenance contracts will now be extended to about 500 km roads over 5 states.

The \$500 million loan, from the International Bank for Reconstruction and Development (IBRD), has a 3-year grace period, and a maturity of 10 years.

Impact of PMGSY:

In agriculture sector, the scheme has opened avenues for increase in usage of fertilizers and improved seeds, affected change in cropping patterns, facilitated increase in use of motorized agriculture vehicles and equipments, triggered increase in production of dairy, poultry and allied activities besides increase in accessibility to markets for selling agricultural produce. It has led to increase in employment opportunities in agriculture sector and increase in employment opportunities outside the village due to greater mobility. There is improvement in access to raw material for local industries, improvement in access to market for finished goods. The all weather roads have provided better access to Health Centres, better Availability of vehicles to reach hospitals. PMGSY has to some extent contributed to increase in attendance and enrolment of Primary & Middle Schools. The other benefits of PMGSY include a diversified livelihoods' portfolio, and improved quality of life for rural communities.

PMGSY Bottlenecks:

- Wide variations in unit costs among the states.

- Maintenance of road network i.e generating funds for road maintenance through appropriate local mechanisms
- Delays in execution due to adverse weather condition e.g monsoon , landslides etc.
- Delays in acquiring land and in forest clearance
- Law and order problems
- Non-availability of labour and material
- Lack of technically trained staff to execute and monitor road works.
- Providing public transport services.

The Way Forward:

Overall, PMGSY has been successful as a policy with an objective to expand the all-weather road network. The primary issue associated with PMGSY is the maintenance of this huge network of roads. This aspect has been taken care of in PMGSY-II. For reducing cost of rural road construction the nontraditional but durable and less expensive materials such as iron and steel slag, fly ash and lime that are locally and easily available may be adopted for road maintenance. Work should be scheduled after monsoons to avoid cost overruns due to delays. Build-Operate-Transfer (BOT)(Annuity model) should be adopted for developing rural roads. State governments should provide adequate financial support in building roads. Gram panchayats should be entrusted to monitor road construction and undertake minor road maintenance.

Conclusion:

Rural roads provide connectivity in rural areas. Rural roads are not only important for movement of agricultural and allied products from rural to urban areas but it is equally important for growth of rural economy. After the construction of PMGSY roads an improvement in the employment situation in terms of more job opportunities, more avenues for self employment etc will take place. PMGSY has achieved a great success in the field of road construction. Finally rural roads under PMGSY will help to attain overall development of the country and its citizens.

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PMGSY-1 SET TO ACHIEVE TARGET IN MARCH 2019

The target date for completion of PMGSY-I has been preponed from 2022 to 2019 considering the importance and urgency of rural roads for national development. Sanctions have been given to 1,66,012 habitations (93%) against the target of 1,78,184 eligible habitations. Less than 1% eligible habitations now remain to be sanctioned for new connectivity under PMGSY and the remaining 6% habitations are either not-feasible, or sanctioned by the States from their own resources. Under the program, 5,50,533 kms of road length has been constructed.

The pace of construction of PMGSY roads reached an 8 year high of 134 kms per day in 2017-18 as against an average of 73 kms during the period 2011 to 2014. A total of 48,751 kms of PMGSY roads, connecting 11,499 eligible habitations have been constructed in 2017-18 at an average rate of 134 kms per day.

PMGSY II was launched in 2012-13. So far, 13 states have moved to stage II of the programme. As against a target of 50,000 km, 32,024 km have been sanctioned and 17,705 km road length has been upgraded. Other states are likely to move to PMGSY II in FY 2018-19.

A special project for Road Connectivity Project for Left Wing Extremist Areas (RCPLWE) was approved by Cabinet in December 2016. Out of 340 roads of 5,411.81 kms and 126 bridges approved by the Cabinet 268 roads of 4,134.69 km and 181 bridges were also sanctioned in 2017-18. Works in these areas are likely to be completed by 2020. This is over and above the special provision for 100-249 population villages in 267 LWE Blocks, where work is likely to be completed by 2020.

Transparency: As a measure of Transparency and Accountability, the Citizen Feedback system has put in place through the MeriSadakApp. In addition to Hindi and English, the App is available in 10 regional languages also. This provides a direct interface with the citizens and this G2C platform enables citizens to provide real time feedback on the implementation of the PMGSY programme. Out of 25,414, complaints/ final replies have been sent in 24,791(97%) cases.

Green Roads: Use of non-conventional, locally available construction materials (waste plastic, cold mix, fly ash, jute and coir geo-textiles, iron and copper slag, cell filled concrete, paneled cement concrete etc.) and “Green Technologies” have been encouraged for climate resilient roads in PMGSY. Rajasthan, Odisha, Madhya Pradesh, Tamil Nadu, Uttar Pradesh, West Bengal and Jharkhand are using this in building green PMGSY roads.

Key Priorities for PMGSY for Financial Year 2018-19: All eligible habitations under PMGSY-I are targeted to be completed by March 2019. Accordingly, the Ministry has set a target of construction of 61,000 kms road length by providing connectivity to 19,725 habitations during the financial year 2018-19. Similarly, a target of about 12,000 kms has been set for construction of roads using green technologies.

Community Contracting initiative in Rural Roads: Maintenance of roads assets created under PMGSY is a big focus for the Ministry and through various advocacy workshops etc. Rural Road Maintenance policies have been framed for 23 States. Uttarakhand Rural Roads Development Agency (URRDA) under the guidance of National Rural Roads Development Agency (NRRDA) initiated Community Contracting for “Off-Carriageway Maintenance” in rural roads through the registered all Women Mahila Mangal Dal (MMD).

Use of IT: Satellite imagery is being used to verify the completion of road length being reported by States on the programme software. The work of GIS has commenced in all the Districts in the 28 States and GIS has been completed in 19 States.



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LIGHTING A BILLION LIVES

Dr Siddhartha P Saikia

The government schemes such as Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) launched in 2015 and Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya) unveiled in 2017 are flagships schemes that helped all villages in India to get access to electricity. The implementation of DDUGJY shall ensure the improvement in agricultural productivity and electrification of all the households. Under Saubhagya, free electricity connections to all households (both APL and poor families) in rural areas and poor families in urban areas are being provided.

"28th April 2018 will be remembered as a historic day in the development journey of India. Yesterday, we fulfilled a commitment due to which the lives of several Indians will be transformed forever! I am delighted that every single village of India now has access to electricity," Prime Minister Narendra Modi had tweeted a day after Leisang, a village in central Manipur's Senapati district received electricity as the last village on 28th April 2018.

Rural electrification is the backbone of rural economy and a basic input for rapid rural development. It is also the main infrastructure for ensuring speedy growth of the agriculture sector and agro based industrial structure in rural areas. Viable and reliable electricity services result in increased productivity in agriculture and labour, improvement in the delivery of health and education, access to communications, improved lighting after sunset, facilitating the use of time and energy-saving mills, motors, and pumps, and increasing public safety through outdoor lighting.

Rural electrification at a household level provides the very minimum services such as lighting and communications and can increasingly meet the aspirations of the rural populations to own other household appliances. Household electrification also increases the likelihood that women will read and earn income.

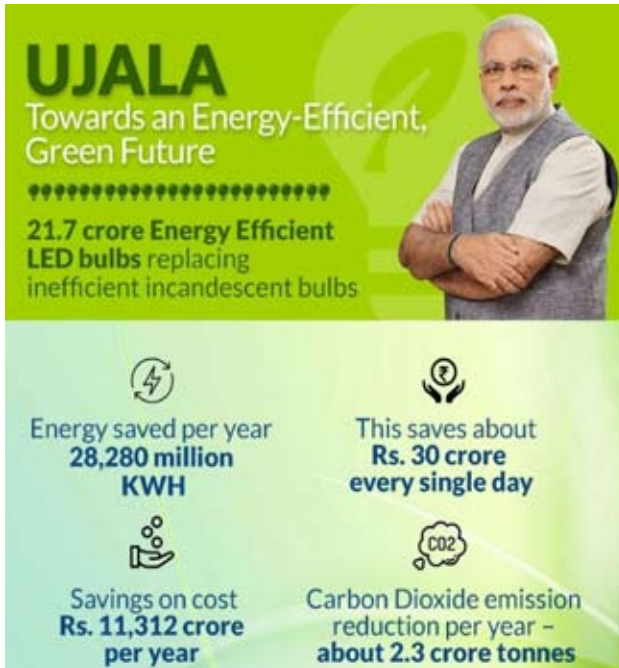
In 2014, when the new Government led by Prime Minister Modi took charges, more than 18,400 villages were without electricity. Currently, all nearly all 5,97,464 villages (officially recorded) in India have

Enhancing quality of life, giving wings to dreams of the poor

Powering a billion aspirations

- No village in India is now in darkness. DDUGJY ensured every village is electrified
- SAUBHAGYA ensuring every household is electrified, targeting 4 crore un-electrified households





living standards for which augmentation of rural infrastructure needs to be regularly undertaken. The investment in the distribution network is low due to bad financial health of the distribution companies. Therefore in order to augment the reliability and quality of supply, the distribution network needs to be strengthened. To improve the commercial viability of power distribution, there is need for metering of all categories of the consumers.

Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya):

The Pradhan Mantri Sahaj Bijli Har Ghar Yojana or commonly known as Saubhagya is another scheme launched by the Prime Modi on September 25, 2017. Under Saubhagya free electricity connections to all households (both APL and poor families) in rural areas and poor families in urban areas are being provided.

Rural Electrification Corporation (REC) has been designated as its nodal agency for the Saubhagya scheme. Under the Saubhagya scheme, DISCOMs or the state electricity distribution utilities organize camps in villages or cluster of villages to facilitate on-the-spot filling up of application forms including release of electricity connections to households. They also adopt innovative mechanism through dedicated web-portal and mobile app for collection and consolidation of application form in electronic mode and also capturing process of release of electricity connections.

Salient Features:

All DISCOMs including the private sector DISCOMs, State Power Departments and RE

transformers); Micro grid and off grid distribution network & Rural electrification- already sanctioned projects under RGGVY to be completed.

The Scheme has an outlay of Rs 76,000 crore for implementation of the projects under which Government of India shall provide grant of Rs 63,000 crore. Under this scheme, an agriculture intensive state would benefit from works of feeder separation. Thousands of kilometres of new lines have been laid and hundreds of new substations have been planned. The implementation of this scheme shall ensure the improvement in agricultural productivity and electrification of all the households.

The rural agricultural and non-Agriculture consumers (domestic and non-domestic load) of the country are generally serviced through the local distribution network. Many rural areas of the country face insufficient electricity supply, consequently the distribution utilities are forced to resort to load shedding, thus affecting the power supply to both Agriculture and non-Agriculture consumers.

The demand of power in rural areas is increasing day by day due to changing consumer base, improving





energy a priority. It has set ambitious target to achieve 175 GW energy through renewable sources of energy, which include 100 GW of solar energy.

The Government has focused on holistic and long term structural improvements in the sector, with a focus on achieving 24X7 power for all. The health of the power sector is borne out by the growth numbers.

Cooperative Societies are eligible for financial assistance under the scheme in line with DDUGJY.

The prospective beneficiary households for free electricity connections under the scheme would be identified using SECC 2011 data. However, un-electrified households not covered under SECC data are also provided electricity connections under the scheme on payment of Rs 500, which shall be recovered by DISCOMs in 10 installments through electricity bill.

The electricity connections to un-electrified households include provision of service line cable, energy meter including pre-paid or smart meter, single point wiring. LED lamps and associated accessories in line with technical specifications and construction standard.

In case of un-electrified households located in remote and inaccessible areas, power packs of 200 to 300 Wp(with battery bank) with a maximum of 5 LED lights, 1 DC Fan, 1 DC power plug etc. are provided along with the provision of repair and maintenance for five years.

The Way Forward:

India, despite the unprecedented pace of addition in the generation capacity over the years, continues to have very low levels of energy consumption. The per capita energy consumption in India remains well below the world averages. This low level of energy availability and consumption tends to affect the poorest the most. According to PM website, while working hard to provide electricity to all, the Government has made clean

A capacity addition of 22,566 MW was achieved in the last year which is the highest ever. The peak shortage has reduced from 11.9% in 2008-09 to 3.2%, the lowest ever. Energy deficit during the current year has also reduced from 11.1% in 2008-09 to 2.3%, the lowest ever in the history of India.

On transmission front, there used to be a lot of constraints in supplying power from surplus states to deficit states. Efforts were made to expeditiously synchronize the Southern Grid leading to 'One Nation, One grid, One Frequency'. The Available transfer Capacity (ATC) during 2013-14 was only 3,450 MW which has been increased by 71% to 5,900 MW this month.

Areas like energy efficiency have seen a dynamic growth with more than 75% reduction in LED bulb prices and distribution of more than 4 crore bulbs in less than one year. The target of replacing every single bulb with an LED bulb is on track with 77 crore bulbs to be distributed by 2018. The domestic and streetlight LED bulb programmes will help reduce the peak-load demand by nearly 22 GW, save 11,400 crore units of electricity annually and bring about a reduction of 8.5 crore tons in carbon dioxide emissions every year. Setting up 22 GW capacity may have been hailed as a monumental achievement but it takes a different perspective to appreciate the avoidance of such investments while preserving the environment.

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Boost to Farmers' Income: Cabinet approves hike in MSP for Kharif Crops for 2018-19 Season

The increase in the Minimum Support Prices (MSPs) for all kharif crops for 2018-19 Season was approved by the Cabinet Committee on Economic Affairs chaired by Prime Minister giving a major boost for the farmers' income. This historic decision redeems the promise of the pre-determined principle of fixing the MSPs at a level of at least 150 per cent of the cost of production announced in the Union Budget for 2018-19. The Commission for Agricultural Costs and Prices (CACP) has recommended MSPs for all kharif crops broadly in line with the announced principle.

The Budget for 2018-19 had indicated that a paradigm shift in the agricultural policies was needed to achieve the objective of doubling farmers' income by 2022 through greater emphasis on generating higher incomes of farmers. The increase in the MSPs of Nigerseed at Rs.1827 per quintal, moong by Rs.1400 per quintal, sunflower seed by Rs.1288 per quintal and cotton by Rs. 1130 per quintal is unprecedented in that regard.

Amongst cereals and nutri cereals, in terms of absolute increase, MSP of paddy (common) has been raised by Rs 200 per quintal, jowar (hybrid) by Rs 730 per quintal and ragi by Rs 997 per quintal. The highest percentage increase in MSP over the previous year is for ragi (52.47 %) followed by jowar hybrid (42.94%). For pulses, apart from Moong, MSP of arhar (tur) has been raised by Rs 225 per quintal yielding a return over cost by 65.36 per cent and urad by Rs 200 per quintal with a return over cost by 62.89 per cent in order to maintain inter-crop-price parity. Similarly, the MSP of Bajra has been raised by Rs.525 per quintal yielding a return of 96.97 per cent over cost.



Unprecedented Support to Farmers with Hike in MSP & Record Procurement



Farmers to get **1.5 times** of the production cost as MSP for Kharif crops



Extent of buffer stock of Pulses increased from 1.5 lakh tonnes to **20 lakh tonnes**



About **16.24 lakh** metric tonnes of pulses procured (as on 22.3.2018)

Promoting cultivation of pulses can help India overcome nutrition insecurity, improve soil fertility by nitrogen fixation and provide income support to farmers. Thus, increased MSPs for pulses will give a price signal to farmers to increase acreage. Further, enhanced MSPs would boost production of oilseeds and encourage investment in its productivity and help reduce India's import bill. Increase in MSPs of nutri-cereals will improve nutritional security and allow farmers to get higher prices.