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Since 1956 A DEVELOPMENT MONTHLY

Let noble thoughts come to us from all sides
Rig Veda

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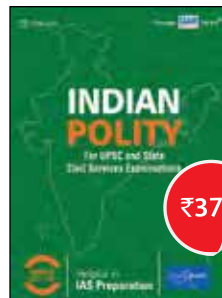
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YE-961/2/2018



Transforming India

What does a person look for when he wants to settle down in a city or town? He checks to see whether he can find a house he can afford, electricity connection, sanitation facilities, connectivity by way of roads and highways for daily movement, rail and airport connectivity for outstation movement; nearby schools and hospitals for any medical emergencies etc.

Infrastructure development, can, therefore, be considered the key to the life of the common man. It is also a crucial factor in the economic development of the nation. Therefore, infrastructure development has been the priority of the Government and it has taken numerous initiatives towards better infrastructure creation.

Creating housing infrastructure is one of the key priorities of the Government. A roof over one's head is the dream of every person and the Government's Pradhan Mantri Awas Yojana was introduced to realize this dream. The PMAY aims at 'Housing for All' by 2022.

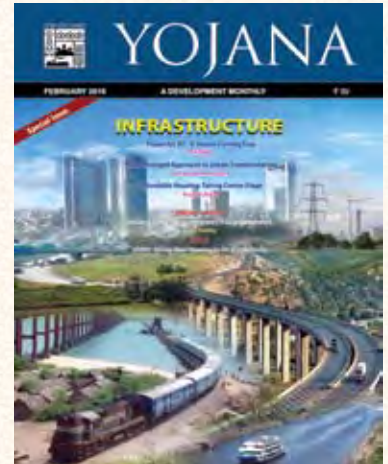
Ensuring electricity connectivity to the remotest villages is another important programme of the Government. The Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) and Pradhan Mantri Sahaj Bijli Har Ghar Yojana - Saubhagya schemes are transforming the lives of people in rural India.

Creation of Smart Cities is yet another major project of the Government. The basic idea behind the Smart Cities project is not only to create cities with better civic amenities or improved infrastructure but also help create inclusive and collaborative cities, with the aim of transforming the lives of the people living there.

Creation of infrastructure in various fields such as education, health etc. has also been the focus of the Government.

Roads are the lifeline of any country and connectivity is a critical aspect of infrastructure for the common man. Good roads and highways help to reach places faster. Therefore, Government aims at creating improved road and highway infrastructure under the Bharatmala scheme. Similarly, Government has given a big push to transformational changes in rail infrastructure as well as development of inland waterway routes. Through the UDAN scheme, the Government seeks to make air travel affordable for the common man in small cities.

Thus, creating facilities for the common man through improved infrastructure has been the priority of the Government. The various Government schemes and programmes will go a long way in the process of transforming the life of the citizens and ensuring all round progress of the nation.



Geography/GS

Neetu Singh

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Power for All – A Dream Coming True

R K Singh

Electricity is a key element in modern day life. Right from powering industrial units and running irrigation pumps to charging your mobile phone – electricity does it all. Access to reliable and affordable energy increases the ease of living and generates employment. It powers the development of the country. It is a prerequisite to digital connectivity in rural India, thereby opening new vistas for the people hitherto unconnected to the outer world.

In the past four and a half years the Government has brought about a transformational change in the Power Sector.

The past four and a half years, have seen unprecedented pace of infrastructure creation in every segment – be it power generation, transmission or distribution. Regulatory framework is being reformed with a new Tariff Policy and amendments to the Electricity Act. In sum, the Indian power sector has undergone a paradigm change.

The first – the primary requirement was availability. Right since independence the country had to live with shortages. In the past four and a half years, we have added more than one lakh megawatts of new generation capacity. Energy deficit has been brought down from 4.2 per cent to almost zero. India has

The past four and a half years, have seen unprecedented pace of infrastructure creation in every segment – be it power generation, transmission or distribution. Regulatory framework is being reformed with a new Tariff Policy and amendments to the Electricity Act. In sum, the Indian power sector has undergone a paradigm change.

become an exporter of electricity – exporting electricity to Nepal and Bangladesh.

In the past four years we have added almost one lakh circuit kilometers to the inter-state transmission capacity



The author is Union Minister of State (I/C) for Power and New & Renewable Energy.



activities etc. and transportation of material/equipment and mobilisation of manpower for execution of works required determination and perseverance. The difficulty level kept on increasing as the work progressed further. About 350 villages located in remote and difficult terrains in Arunachal Pradesh, J&K, Meghalaya and Manipur required head loading of materials and trekking up to 10 days. Materials in some villages of J&K and Arunachal Pradesh had to be transported by helicopter. In 2762 villages, extending grid network was not feasible due to remote and inaccessible locations, solar based standalone systems were provided. Enormous challenges were confronted in electrification of 7614 Left Wing Extremism affected villages in Bihar, Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha.

– connecting the entire nation to one grid. Now, for the first time we have One Nation- One Grid- the entire network operating on one frequency. Power can be transferred seamlessly from one corner of the country to another. Power generated in Himachal Pradesh can be transmitted to Tamil Nadu and power generated in Assam can be transferred to Maharashtra or vice versa.

Our Government decided to connect every village where electricity had not reached. The Prime Minister announced from the ramparts of the Red Fort on 15th August, 2015 that every village which did not have access to electricity will be connected

within a thousand days. The States reported that power had not reached in 18452 villages even seven decades after independence. We connected these villages in less than 1000 days. A major landmark to universal access to electricity was crossed when our country achieved 100 per cent village electrification on 28th April, 2018.

The challenges involved in completing this task were huge – these challenges had stood as a barrier to extending electricity to these villages for such a long period. Most of these villages were located in remote inaccessible areas with difficult terrain in hilly areas, forest areas, areas severely affected with LWE

To achieve this feat, extensive infrastructure was created under DDUGJY (as shown in Table -1). Special focus was on feeder separation (rural households and agricultural) and strengthening of sub-transmission and distribution infrastructure including metering at all levels in rural areas. Hundreds of thousand kilometres of new lines were laid and lakhs of distribution transformers were installed.

The electrification of these

The next step was to light up every household. The Prime Minister launched the 'Pradhan Mantri Sahaj Bijli Har Ghar Yojana' – Saubhagya in Sept. 2017 with the aim to achieve universal household electrification. Achievement of this within targeted timeline of 31st March 2019 is the challenge we have given to ourselves. As the name of the scheme itself suggests, it has inherent features of 'Sahaj' i.e. Simple / Easy / Effortless and 'Har Ghar' i.e. inclusive universal household electrification.

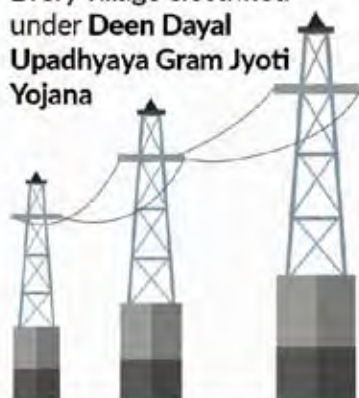


Speed and Scale of Transformation

Powering a Billion Aspirations



Every village electrified under Deen Dayal Upadhyaya Gram Jyoti Yojana



SAUBHAGYA to ensure universal household electrification by 31st March 2019

remaining villages has paved the path for their socio-economic growth. This program has also set an example of effective cooperative federalism wherein Union Government, State Governments, Distribution Companies and administration synergised their efforts for common goal.

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Table 1- Progress in Rural Electrification under DDUGJY (includes additional infrastructure for Saubhagya & subsumed Rural Electrification component)

Sl No.	Progress in Rural Electrification	From May 2014 to Dec 2018	From May 2009 to May 2014
1.	Total project cost sanctioned (Cr)	54,672	33,091
2.	Grant released to States (Cr)	35,437	16,058
3.	Intensive electrification of Villages (Nos.)	3,05,229	2,27,487
4.	No. of distribution transformers	3,60,840	2,23,563
5.	HT lines (Feeder Segregation & 11 KV included) (kms)	2,92,023	1,11,677
6.	New Substations (Nos.)	1,001	553
7.	Augmentation of existing Substations (Nos.)	2109	368

At its peak, we were lighting up an average of a hundred thousand houses every day. Even the International Energy Agency called India's electrification journey as one of the greatest success stories of the Year -2018.

Hardly 4 lakh odd households are now remaining and within next few weeks, every household of the country will have an electricity connection. No country has witnessed anything on such a scale in such a short span of time. The happiness on the face of the people when their houses are lighted up is something to be seen.

challenge we have given to ourselves. As the name of the scheme itself suggests, it has inherent features of 'Sahaj' i.e. Simple / Easy / Effortless and 'Har Ghar' i.e. inclusive universal household electrification. A targeted program of such a scale has never been attempted in the world. The progress is again exemplary in terms of speed and innovation.

More than 2.50 crore households have already been electrified under Saubhagya! That is more than two South Africa put together.... and India has electrified these many households in a record time of just 15 months. This pace and scale of transition is such as has not been witnessed anywhere in the world. At its peak, we were lighting up an average of a hundred thousand houses every day. The International Energy Agency called India's electrification journey as one of the greatest success stories of the Year -2018.

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Table 2 –Progress under IPDS

Sl No.	Parameter	Progress in last 4.5 years
1.	Total outlay	32,612 Cr
2.	Grant release to States	7,149 Cr
3.	No. of towns IT enabled	869
4.	No. of towns under progress (IT enablement)	1958
5.	No. of towns that reported reduction in AT&C losses	1070
6.	New Substations (no.)	1028
7.	Augmentation of existing Substations (no.)	441
8.	HT lines (km)	35,061
9.	LT lines (km)	18,125
10.	No. of distribution transformers	55,679
11.	No. of energy meters	86,13,063

Table 3 – One Nation – One grid

Sl No.	Parameter	Progress during last 4.5 years
1.	Addition of transmission lines (220 kV & above)	1,14,607 Km
2.	Addition of Transformation Capacity (220 kV & above)	3,44,367 MVA
3.	Inter-regional Transmission capacity addition	56,900 MW

houses are lighted up is something to be seen.

In addition to providing last mile connectivity in rural areas, the Government launched Integrated Power Development Scheme (IPDS) with an aim to strengthen power infrastructure in urban areas. The focus areas of IPDS are-

- Strengthening of sub-transmission and distribution network in the urban areas
- Metering of distribution transformers /feeders/consumers in the urban areas
- IT enablement and automation of distribution sector

The infrastructure created under IPDS during the last four and a half years (Table 2) is equally important to ensure supply of adequate power with desired quality and reliability.

The huge addition in the consumer base at the rate of one lakh households per day, coupled with growth in the economy has meant that our electricity demand has been growing at the rate of more than 10 per cent in the past months.

Renewable Energy

While India needs to develop, it has to do so in a responsible way. We owe our future generations a green and clean planet. This is the reason India is in the process of changing its energy mix. To make our electricity clean and green, we have developed a roadmap to achieve 175 GW capacity in the renewable energy sector by 2022, which includes 100 GW of solar power and 60 GW of wind power. The overall installed capacity of Renewable Energy has been more than doubled in the last four and a half years – from 34,000 MW to 75,000 MW, solar capacity increased 8 times in last 4 years. Today, India stands at 5th position in the world in installed solar capacity, at 4th position in installed wind capacity and at 5th position in over all renewable energy (installed capacity). We are on the way to achieve our commitments.

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Table 4 –Energy efficiency brought in by UJALA & SLNP

Sl No.	Parameters	UJALA	SLNP
1.	No. of LED bulbs distributed/Streetlights installed	31.80 crore LED bulbs	77.33 lakh LED Streetlights
2.	Estimated energy saved per year	41.30 billion units	5.19 billion units
3.	Avoided peak demand/avoided capacity	8,269 MW	866 MW
4.	Green House Gas emission reductions per year	33.45 million ton CO ₂	3.57 million ton CO ₂

Energy Efficiency

While we continue to increase our capabilities for power generation, we recognize the need to explore avenues that promote energy efficiency. A number of innovative and visionary policy measures have been taken in this field. Household LED bulb distribution program UJALA and SLNP (Streetlight National Project) for replacing conventional streetlights with smart and energy efficient LED street lights have saved billions of unit electricity per year (Table -4).

In addition to these, Star Labeling program, Energy Conservation Building Code and energy efficiency measures through Perform, Achieve and Trade (PAT) are also important initiatives in the field of energy efficiency. The first cycle of the PAT for industry achieved savings of more than 8.6 million tonnes of oil equivalent which is almost 1.23 percent of primary energy supply of India. The second cycle is estimated to achieve even higher savings.

Way Forward

A new Tariff Policy is being finalized. It contains several consumer friendly provisions to ensure reliable and 24x7 supply of power. This policy makes it mandatory to provide reliable and 24x7 power supply for all from 1st April, 2019. If a power outage occurs without a valid reason (e.g. for scheduled maintenance or disruption due to natural calamity), the concerned power distribution company (DISCOM) will face penalties. This would effectively put an end to gratuitous load shedding by DISCOMs.

Another futuristic area we are working on is – Smart Electricity Meters. We have chalked out a strategy to replace all electricity meters in the country with Smart Meters within a period of 3 years. A beginning has already been made with the installation of over 50 thousands Smart Meters in NDMC area. This will revolutionise the power sector by way of reduced AT&C losses, better health of DISCOMs, incentivisation

of energy conservation and ease of bill payments etc. Further, it will generate skilled employment for the youth.

Electrical vehicles (EVs) are another major emerging area we are focusing on. The Government has launched the National E–Mobility programme to promote electric vehicles in a big way. Creation of extensive charging infrastructure is a prerequisite for large scale adoption of EVs. The Ministry of Power is creating an enabling regulatory framework for rapid expansion of charging and storage infrastructure.

Our country jumped to 24th rank in 2018 on World Bank’s Ease of Getting Electricity in the world as against 111th rank in 2014. This is a quantum leap and shows the result oriented approach of the Government. Still we have more to do but our vision is clear and our determination is firm. We are committed to an energized India – a prosperous India. □

(E-mail: pibpower@gmail.com)

PM Launches Several Infrastructure Projects

PM Launches Gangajal Project to Provide Better and More Assured Water Supply to Agra

Giving a major push to develop and enhance tourism infrastructure in Agra, the Prime Minister launched a series of development projects worth Rs. 2900 crores for the Agra city and the adjoining areas on 9th January 2019. The Prime Minister dedicated to the nation, Gangajal project, which will provide Agra with better and more assured water supply, at an estimated cost of Rs.2880 crores. Gangajal project aims to bring 140 cusecs of Ganga water to Agra. This will help meet the drinking water demands in the city.

The Prime Minister also laid the foundation stone of Integrated Command and Control Centre for Agra Smart City. In this project CCTVs will be installed throughout Agra City for monitoring and surveillance for the purpose of safety and security. This will help to develop Agra as a modern world class smart city, befitting its stature as a premium tourist destination, at a total cost of Rs.285 crores.

Under Ayushman Bharat Yojana, the Prime Minister laid the foundation stone of the upgradation of SN Medical College in Agra. It will result in creation of a 100 bed maternity wing in the Women's hospital, at an estimated cost of Rs.200 crore and add to the health and maternity care for the weaker sections of the society. The Prime Minister further laid the foundation stone of a sewerage network project for the western part of Agra under AMRUT scheme. The project will lead to improved sanitation facility in over 50000 houses.

PM Launches Infrastructure Development Projects in Odisha

The Prime Minister launched several development projects worth Rs. 1500 crores and laid foundation stones of various projects in Balangir in Odisha on 14 January, 2019. He dedicated Multi-Modal Logistics Park (MMLP) Jharsuguda to the Nation. Giving a boost to rail projects, the PM inaugurated the Balangir-Bichhupali railway line built at an estimated cost of Rs. 115 crores. The PM also dedicated to the nation, the new bridge over Nagavali River, doubling of railway lines between Barpali-Dungaripali and Balangir-Deogaon and electrification of 813 km of Jharsuguda-Vizinagaram and Sambalpur-Angul lines. He also laid the foundation stone of Kendriya Vidyalaya in Sonepur at an estimated cost of Rs.15.81crore. The Multi-Modal Logistics Park (MMLP) at Jharsuguda is built at a cost of Rs 100 crores and will facilitate EXIM and domestic cargo including private freight traffic. Many important industries like steel, cement, paper etc are located around the facility and will benefit from it. The Multi-Modal Logistics Park will establish Jharsuguda as a prime logistics hub in Odisha and boost ease of doing business in the State.

The 15 km Balangir-Bichhupali New Railway Line would connect coastal Odisha with western Odisha synchronising development across the State. It will reduce travel time from Bhubaneswar and Puri to major cities like New Delhi and Mumbai. The line would benefit many MSME and cottage industries in Odisha and open up opportunities for the mining sector in Odisha.

Speaking on the occasion and highlighting the importance of connectivity and education, he said, "Education leads to human resource development. But, it is connectivity that transforms such resources into opportunity. Inauguration of 6 railway projects is an effort of our endeavour to enhance connectivity. It will facilitate movement of people, make mineral resources more accessible to industry and help farmers to take their produce to far-off markets, furthering 'Ease of Living' for Odisha's citizens".

PM Dedicates Kollam Bypass on NH-66 to the Nation

The Prime Minister dedicated the 13 km, 2-lane Kollam bypass on NH-66 to the nation on 15 January 2019. Addressing a gathering, Prime Minister said that infrastructure development has been the priority of his Government and the Kollam bypass is an example. Kollam Bypass will reduce travel time between Alappuzha and Thiruvananthapuram and decongest the traffic in Kollam town.

The Prime Minister said that the government is committed to ensure timely completion of all the projects. He said that through PRAGATI, more than 250 projects worth Rs.12 lakh crores have been reviewed at his end.

Highlighting the progress in road connectivity, the PM expressed hope that the government will reach the target of 100 per cent rural road connectivity soon. Regional air connectivity and expansion of railway lines have shown marked improvement resulting in creation of job opportunities. The Prime Minister said, "When we construct roads and bridges, we do not only connect towns and villages. We also connect aspirations with achievements, optimism with opportunities and hope with happiness."



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Multi-Pronged Approach to Urban Transformation

Durga Shanker Mishra

India's urban population was over 31 per cent in 2011 census. This is expected to rise to 40 per cent by 2030 and 50 per cent by 2050, i.e. it will cross 800 million. As per 2011 census, urban India contributed 63 percent to the GDP; it is projected to grow over 75 per cent by 2030.

Due to high densities of people and assets, cities' vulnerability to the impacts of climate change, disasters

and conflicts increases manifold. However, when planned and managed well, cities become engines of growth and sustained development.

Challenges to Urban India

The Prime Minister saw the challenges of urbanization as opportunities to drive the economy forward—investments in infrastructure will create jobs, improve ease of living and employ citizens to best of their abilities in the service of the nation.

Therefore, a three-level strategy, as highlighted in diagram-1 has been envisaged:

- a) At the first level, poverty alleviation, affordable housing and sanitation were the three biggest challenges. Deen Dayal Antyodaya Yojana-National Urban Livelihood Mission (DAY-NULM), Pradhan Mantri Awas Yojana-Urban (PMAY-U) and Swachh Bharat Mission-Urban (SBM-U) implemented



Kochi City

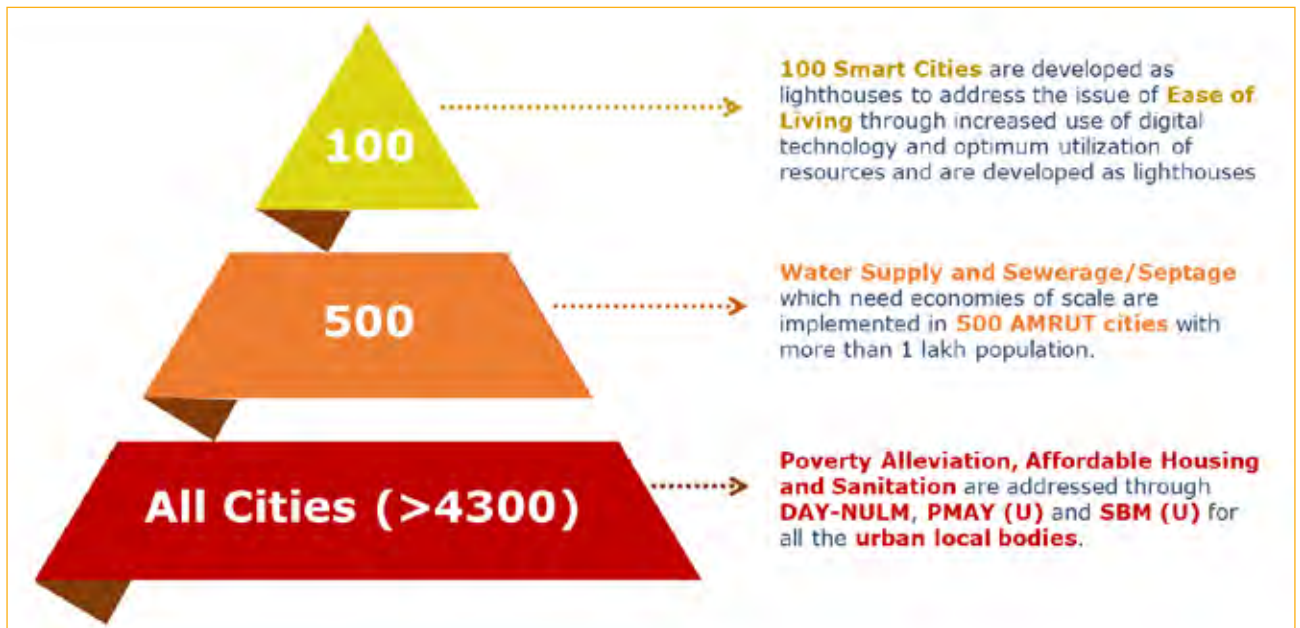


Diagram 1. Development Hierarchy

in all the urban local bodies (ULBs).

- b) At the second level, basic infrastructure like water supply,



sewerage/septage projects and green parks became the focus. These sectors required economies of scale and are being implemented in 500 cities, with 1,00,000 and above population through Atal Mission for Rejuvenation and Urban Transformation (AMRUT). This covers over 60 per cent of urban population.

- c) Finally at the third level, 100 cities are being developed under Smart Cities Mission (SCM) to address the issue of ease of living by evolving new paradigms of urban governance with communities at the core and increased use of digital technology to improve the urban infrastructure, services and utilisation of resources.

What do we mean by Smart Cities?

Smart Cities Mission was launched on June 25, 2015 by the Prime Minister of India.

Smart cities in common parlance are understood to be cities that use appropriate technologies for improving quality of lives of their

Box 1:

It is for the first time that certain areas in cities will be comprehensively developed in a systematic and qualitative way.

It is for the first time that there has been such extensive citizen consultation.

It is for the first time that allocation of funds in a government scheme is done not by decisions of Ministers or officers but on the basis of competition

Shri Narendra Modi
Prime Minister of India
At the Economic Times Global Business Meet, 30 January, 2016

citizens. However, there is no fixed definition of a smart city. Our Smart Cities are woven around the following principles:

1. Citizen at the Core: Citizens and the communities are at the centre of development; **2. More from Less:** Being conscious of resource constraints, they have to generate more impact/outcomes from use of less resources- energy, finance and others; **3. Cooperative and Competitive Federalism:** Cities are selected through competition in two

The author is Secretary, Ministry of Housing & Urban Affairs, Government of India.

Smart Cities are the incubators of the New Urban India that is the aspiration of over 1.25 billion citizens of our country. These are the sites where the 'urban renaissance' of India will be collectively envisioned and executed. It is envisaged that by 2022, the 75th year of its Independence, India's cities should have scientifically planned and aesthetically designed settlements and public spaces, providing spacious, safe and secure environments to live, work, play and recreate

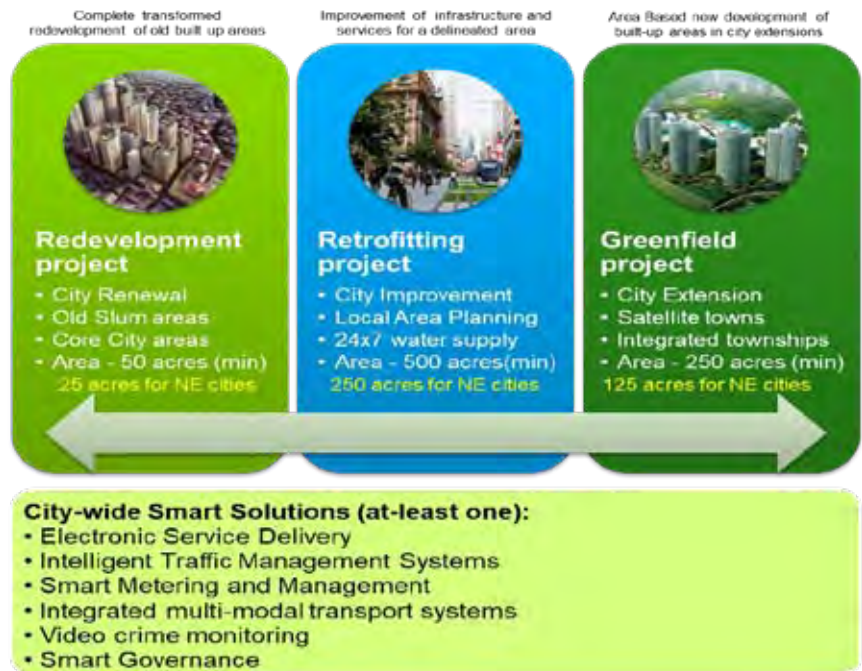


Diagram 2. Models of Development

stage challenges at State and Central levels; **4. Integration, Innovation, Sustainability:** It is not merely about the use of technology, but creation of integrated infrastructure and services. **5. Technology is the Means, and Not the Goal:** Careful selection of technologies, relevant to the context of particular cities, built around specific needs of their communities is important for the cities to work out solutions; and **6. Inclusiveness is a Guiding Philosophy:** Cities are for the people and hence they have to be built around the principles of inclusiveness. Broadly, Smart Cities address three core issues: **Live-ability, Economic-ability and Sustain-ability.**

A comprehensive exercise of citizen engagement laid the foundation for preparing the Smart City Proposals (SCPs) for participating in national level Challenge. The major issues which confront urban areas as expressed by most citizens were: urban mobility, affordable housing, water and waste-water management, sanitation, safety and security, health and education, and energy security. These aspects are linked to how citizens rate the quality of life in the cities.

The power of cities to drive economic growth has been well researched and accepted. Creating a

Box 2:
 ...this mission aims to provide the lower, lower middle and middle class with better civic amenities, and make their lives simpler.
 Shri Narendra Modi
 Prime Minister of India
 At Lucknow on 28 July 2018

a better investment climate, enabling creation of jobs as per needs of available talent, attracting more investment and talent, breeding innovation, reducing levels of unemployment are some of the important aspirations of smart cities.

While cities invest in infrastructure, products and services for providing a better quality of life to their citizens and create robust economies for sustained growth, they have to be conscious of sustainability. Such development is not in a fixed state of harmony, but requires a dynamic equilibrium in which everyday decisions on technology, infrastructure, processes, and investments are taken in a manner which balances both present and future concerns of the society. Smart cities

Four rounds of competition					
	Round 1	Round 2	Round 3	Round 4	Total
No. of Selected Cities	20	40	30	10*	100
Period of selection	Jan 2016	May to Sep 2016	Jun 2017	Jan 2018	
Total no. of Projects	829	1,959	1,891	472	5,151
Investment (in ₹ Crores)	48,064	83,698	57,393	15,863	2,05,018
Avg. SCP Size (in ₹ Crores)	2,403	2,092	1,913	1,586	2,050

*Shilong selected as 100th Smart City in June 2018

Diagram 3. Four rounds of Smart City Challenge



Smart City Plans capture aspirations of youngest citizens

promote sustainable development through different initiatives.

Smart Cities Mission Strategy

Broadly, the Mission tries to meet the major goals highlighted earlier through a two-fold strategy: **1. Area Based Development**, which focuses on development of world class localities within cities to act as replicable models through redevelopment, retrofitting or green development; and **2. Pan City development**, wherein cities identify few key areas of intervention with use of digital technologies to create impacts on basic infrastructure and services with an intent to improve

quality of life for their citizens. This two-fold approach is depicted in diagram 2:

Smart Cities Mission Evolution

100 Smart Cities have been selected across all States and Union Territories of India. The selection of these 100 cities was done in four different rounds, as illustrated in diagram 3:

These smart cities have proposed to execute 5,151 projects worth Rs 2,05,018 crores in 5 years from their respective dates of selection. Financial innovation is built in the design of their capital investment

plans. The distribution of funding envisaged from different sources is as follows: Central and State government: Rs. 93,553 cr (45 per cent), Convergence funding from other missions, programs of the Central/State Governments and/or ULBs: Rs. 42,088 cr (21 per cent), Funds from PPP Rs. 41,022 cr (21 per cent), Loans/Debt Rs. 9,843 cr (4 per cent), Own Sources Rs. 2,644 cr (1 per cent), Other Sources: Rs. 15,930 cr (8 per cent). Projects under the Mission fall under multiple sectors. Some of the key sectors and their proportion within the overall project portfolio is as diagram 4:

Technology as a Means, and not the End

Technology as mentioned earlier, is a means to an end. This is quite evident from the experience of Smart Cities Mission. Every Smart City under the Mission will have a Smart City Centre (also referred to as Integrated Command and Control Centre). This is and will be the city's brain and nervous system where digital technologies are integrated to social, physical and environmental aspects of the city to provide centralised monitoring and decision making. In a very short

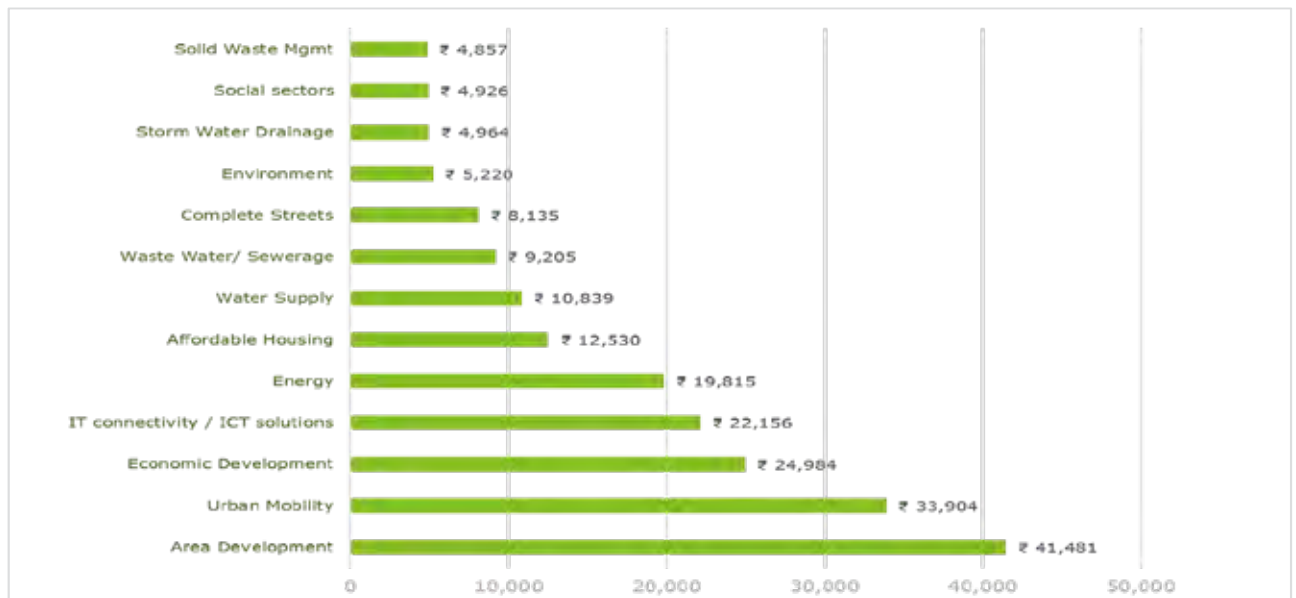


Diagram 4. Proposed investments across different sectors in Smart City Plans

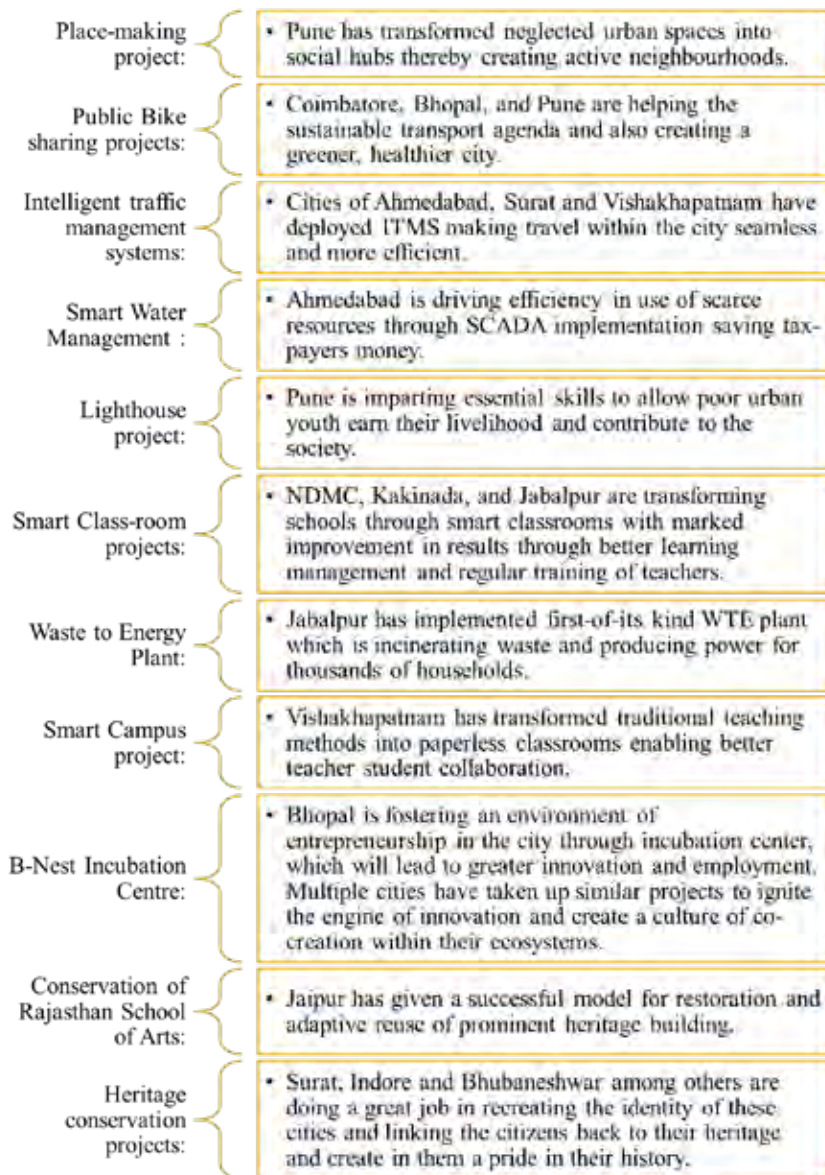


Diagram 5. Illustration of Smart Cities Impacts



Social Hubs in Pune

period, the results are encouraging. Rajkot recorded an increase in on-line issuance of birth/death certificates; and through surveillance, crime rate has gone down. There is an improvement in traffic challans in Ahmedabad. Pune has installed flood sensors at key points around the city which feed data to the Smart city centre thereby enabling timely warning and response mechanism. In Vishakhapatnam, CCTV and GPS enabled buses are being tracked online through the Smart City Centre. Bhopal has seen a rise in its property tax collections and is able to track its transport services online.

Box 3:

Smart Cities Mission is not only about improving infrastructure in cities. It is the Mission that gives new identity to the nation, the epitome of the Young India, the New India.

Shri Narendra Modi
Hon'ble Prime Minister of India
At Varanasi on 14 July 2018

Quality of Life and Economy: Impact

Smart cities' projects are not only promoting sustainable development but also helping create vibrant, inclusive, healthy and collaborative cities, thus enhancing quality of life. Some of them are mentioned in diagram 5.

The Mission promotes mixed land-use in area-based developments as proximity and density reduce the per capita costs of providing and maintaining infrastructure and services, while creating knowledge spill-overs and specialisation that hugely enhance the urban productivity. Smart Cities are implementing projects with a strong focus on economic returns. The primary focus of initiatives relating to local economic development is on commercial and retail activities, with a strong focus on market redevelopment projects and the new construction of offices, homes and

allied institutions such as convention centres, etc., as part of mixed-use development. Few other project interventions being implemented by Smart Cities include setting up of skill development centres, incubation centres and vending zones.

Innovation as Key Driver

The Smart Cities Mission aspires to build the right partnerships and networks, create enabling environments for engagement, and put in place an ecosystem which breeds innovation. Recognising the role of Start-ups, the Smart Cities Mission will work

Recognising the role of Start-ups, the Smart Cities Mission will work to create an innovation eco-system in Smart Cities through SPIRIT--Smart Cities Promoting Innovation Research and Incubation in Technology. It is an initiative in collaboration with Atal Innovation Mission (AIM) and Start-up India program harnessing the strengths of the three initiatives.

to create an innovation eco-system in Smart Cities through SPIRIT--Smart Cities Promoting Innovation Research and Incubation in Technology. It is an initiative in collaboration with Atal Innovation Mission (AIM) and Start-up India program harnessing the strengths of the three initiatives. This will foster creation of an eco-system for innovations in Smart Cities, enabling local area development, harnessing technology and providing boost to the economy. Another important area of transformation is the digital payments space.

Impact on Sustainability

Smart Cities have proposed investments to ensure assured electricity supply with at least 10 per cent of the Smart City's energy requirement coming from Solar Energy. Diu has become the first city to completely



Universally Accessible Smart Streets, Pune



Diagram 6. Progress of tendered projects



Integrated Command and Control Center at Vadodra

switch over to solar power during the day-time. Many other cities have executed projects on renewable energy including solar and wind energy. Smart Cities have identified initiatives to strengthen their distribution systems through Smart Metering. Promotion

of energy efficient green buildings and green transport options to reduce need for electricity are some other initiatives taken up by Smart Cities

Key Enablers

Smart Governance, improved



Diagram 7. Progress of grounded projects



Diagram 8. Progress of completed projects



City Operation Center, Visakhapatnam Smart City

urban finance, capacity building and technology driven innovation are key enablers in the performance of the smart cities. These are discussed in following paras.

Smart Governance

Smart Cities leverage ICT based technologies and digitalisation to make governance citizen-friendly and cost effective; bring about accountability and transparency; provide services without having to go to municipal offices; form e-groups to listen to people and obtain feedback; and use online monitoring of programs and activities with the aid of online tools. By now, 13 Smart Cities have operationalised ICCCs; and work is in progress in another 49.

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Smart Cities Mission aims to address barriers in data driven governance through 'Data Smart Cities', an evolving policy framework on data for smart cities, which aims to be a catalyst for the entire eco-system comprising of people, processes and technology. Cities like Pune and Surat have started publishing data sets through City Data Portals <http://opendata.pmc.gov.in> and <https://surat.data.gov.in>. Smart Cities Mission intends to unlock civic data for all 100 cities.

Making ULBs financially self-sufficient is very important for sustainable development. The



Dedicated cycle tracks, Bhopal



Conservation of Built Heritage (Rajwada), Indore



Figure1. Bhopal Integrated Area Based Development project

Ministry started credit rating of cities, which has been completed in 465 cities. The Ministry has incentivized ULBs through cash incentive of Rs.13 crore for every Rs.100 crore of municipal bonds issued, equivalent to 2 per cent interest subvention. So far, Smart Cities of Pune (Rs.200 crore) and Indore (Rs.140 crore), Bhopal (Rs.175 crore), Amaravati (Rs.2,000 crore), Hyderabad (Rs. 395 crore) and Visakhapatnam (Rs. 80 crore) have raised significant amount of money through Municipal Bonds. Cities are implementing projects in PPP mode for Housing, Waste-to-Energy, Solar Rooftop, Public Bike Sharing, Parking Management, Smart Cards and Transport Hubs.

The Ministry has launched the Cities Investment To Innovate, Integrate and Sustain (CITIIS) Challenge in collaboration with the French Development Bank (AFD). AFD will provide investment support of EUR100 million to selected cities in key sectors of Sustainable Mobility, Public Open Spaces, Urban Governance & ICT and Social & Organization Innovation in Low-Income Settlements.

Capacity Building and Knowledge Management:

The Ministry has launched the **Cities Investment To Innovate, Integrate and Sustain (CITIIS) Challenge** in collaboration with the French Development Bank (AFD). AFD will provide investment support of EUR100 million to selected cities in key sectors of Sustainable Mobility, Public Open Spaces, Urban Governance & ICT and Social & Organization Innovation in Low-Income Settlements. The Mission would select at least 15 projects through CITIIS Challenge.

India Smart Cities Fellowship & Internship Program has been



Urban Waterfronts facilitate local economic development as well as promote social interactions



Solar Rooftop on Municipal Parking Lots at Visakhapatnam



Solar PV Installation, Diu Smart City

launched to engage brilliant youth with the Mission. This will promote knowledge management within the Mission and provide young professionals with an opportunity to experience various aspects of urban planning and governance.

SmartNet is an initiative to support the development of cities across India and to create a resource-rich ecosystem of learning, sharing and disseminating for city managers and primary stakeholders in the urban transformation of India.

National Urban Innovation Hub

A new entity titled the ‘National Urban Innovation Hub’ (NUIH) – is being proposed at the national level to consolidate existing resources and to expand the footprint of innovation development and capacity building for the urban sector. NUIH would catalyse the creation of an enabling ecosystem for transformation of the urban sector through a culture of continuous and comprehensive innovation. NUIH will anchor the **National Smart Cities Capacity Building Program** to produce empowered functionaries and stronger institutions.

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NUIH will be powered by the **National Urban Innovation Stack (NUIS)**. The NUIS is envisaged to provide the foundational components that are required across various urban



City Surveillance leveraging Integrated Command and Control Centers (ICCC)



Jabalpur Waste-to-Energy Plant on PPP mode



Public Open Spaces for all age groups

programs. NUIS is a nationally-shared digital infrastructure usable by the Governments, both at Centre and States and across public and private sectors.

Mission Progress

Over the last 3 years, following the launch of Smart Cities' Mission guidelines, by the Prime Minister on 25th June 2015, all 100 cities have been selected through Challenge process, all of them have established the Special Purpose Vehicles (SPVs) to support implementation of the Mission. All of them have hired Project Management Consultants (PMCs) to design and develop projects for implementation in multiple sectors covering smart roads, water supply, heritage and place making, smart IT and communication, app based citizen service delivery system etc.

As on 31stDecember,2018, total 2,563 projects worth Rs 1,02,027 crore have been tendered; out of this 1,842 projects worth about Rs.59,336 crores are under implementation. Most of them will be completed in the next 18 months. Work has been completed in 587 projects worth over Rs 10,817 crore. In October, 2017, the number of projects tendered was worth Rs 21,760 crore, which has increased by more than 300 per cent, Work Order had been issued for projects worth Rs.11,460 in October, 2017; this has increased by around 400 per cent. As more and more projects get implemented, we will notice increased impact on the lives of the citizens.

Way Forward

At the start of the mission, one of the biggest challenges was to create an institutional framework at city level. It is for the first time that city level SPVs have been created for comprehensive urban development in India. Now, these cities have to build capacity at city level to take up innovative technology solutions.



Diagram 9. VCF Tools

A major challenge is to build urban finance capacities in order for cities to be able to leverage grants being provided by the governments. Innovative financing models like issuance of municipal bonds, developing PPP projects and formulating land value capture finance (VCF) policies are

required. The cities have taken the first step by leveraging the government grant by 2 - 2 ½ times (average) in their Smart City Proposals (SCPs).

The importance of standardization in the context of development of Smart Cities cannot be ignored. Lack

of standards results in **problems** of vendor lock-in and solution silos. The Mission is closely working with Bureau of Indian Standards (BIS) in an effort to come up with smart ICT infrastructure standards and they are hopeful that they should be able to release the first version of these standards around mid-2019.

Smart Cities are the incubators of the New Urban India that is the aspiration of over 1.25 billion citizens of our country. These are the sites where the ‘urban renaissance’ of India will be collectively envisioned and executed. It is envisaged that by 2022, the 75th year of its Independence, India’s cities should have scientifically planned and aesthetically designed settlements and public spaces, providing spacious, safe and secure environments to live, work, play and recreate. In the new-urban India, every Indian should find fruitful occupation, livelihood and self-fulfilment. This can be the model of sustainable urbanism that India can offer to the world. □

(E-mail: secyurban@nic.in)

Pradhan Mantri Ujjwala Yojana achieves 6 crore mark

The Government had launched “Pradhan Mantri Ujjwala Yojana”(PMUY) scheme to provide 5 crore LPG connections to Below Poverty Line (BPL) families. The initial target of 5 crore connections was achieved well before the target date i.e.31st March, 2019. Recently, the Vice President handed over the 6 crore LPG connection under Pradhan Mantri Ujjwala Yojana (PMUY) to Smt Jasmina Khatoon from Shivpark, Khanpur, Delhi.

Implementation of PMUY has resulted in significant increase in national LPG coverage, in general and Eastern States, in particular. The scheme has resulted in mass coverage of rural poor households and 48 per cent of the beneficiaries are SC/STs. While 74 per cent beneficiaries under the scheme, who could not afford to make upfront payment for purchase of gas stove and first refill, were provided loan facility by the OMCs. It is significant to mention that under the PMUY the average per capita consumption is 3.28. This should be seen as a positive change in the lives of these households which were long dependent on the traditional cooking fuels and methods.

LPG Panchayats are being observed to promote learning through peer group interaction - Kuch Seekhein, Kuch Sikhayein, where apart from experience sharing, it also aims at safe and sustained usage of LPG. OMCs as on date have conducted 59,960 nos. of LPG Panchayats and safety clinics for education and awareness programs among PMUY beneficiaries. To make LPG affordable to poor families, OMCs have introduced 5 Kg refill option to Ujjwala beneficiaries wherein the Ujjwala beneficiary can swap 14.2 Kg cylinder with 5 Kg refill and vice versa. 1,33,869 nos. of beneficiaries have taken advantage of this scheme as on 31.12.2018.

PMUY implementation has been appreciated by the World Health Organization (WHO) who have termed it as a decisive intervention to check the indoor health pollution being faced by the women of the country.

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National Water Ways: Integrated Transport Network

Pravir Pandey

The Government of India is aggressively pushing for the development of inland waterway routes as part of an integrated transport network strategy.

On November 12, 2018, the Prime Minister dedicated India's first riverine multimodal terminal on river Ganga (National Waterway-1) at Varanasi to

the nation. On the same day, he also received the country's first container cargo that travelled on river Ganga (National Waterway-1) from Kolkata to Varanasi.

The twin events not only marked watershed moments in the development of Inland Water Transport (IWT) in India but also broke grounds for a spurt in business activities on National Waterway (NW-1) as is evident with

a slew of cargo owners like PepsiCo, Emami Agrotech, IFFCO Fertilizers, Dabur India that have come on board inland waterways.

106 new national waterways were announced under the National Waterways Act, 2016. With the five existing National Waterways (NW), the addition of the new ones takes the total number to 111 in the country. Out of the newly announced waterways,

A developed IWT will not only augment the overall transport capacity of the country, but will also help correct the transport modal mix that impose huge logistics costs on the Indian economy.

The author is Vice Chairman, Inland Waterways Authority of India, Government of India.



NH-2, constitute the Eastern Transport Corridor of India connecting the National Capital Region (NCR) with the eastern and North-eastern states and will function as a link to Bangladesh, Myanmar, Thailand, Nepal and other east and Southeast Asian countries through the Kolkata Port and Indo-Bangladesh Protocol Route.

In fact, on October 1, 2018, completing a month-long voyage from Bihar to Assam through waterways, 1233 tonnes of fly ash reached Pandu, Guwahati, marking one of the longest hauls in Inland Water Sector (IWT) movement in the country. 1233 tonnes of bagged flyash (by product from National Thermal Power Corporation's (NTPC) Kahalgaon power plant, Bihar) bound for Pandu Inland Port in Assam had sailed on September 30, 2018 to cover a distance of 2085 KMs.

This was an integrated movement through three Waterways (NW-1, river Ganga), the Indo Bangladesh Protocol (IBP) route and (NW -2, river Brahmaputra).

The movement has evinced confidence and interest in the inland waterways industry and vessel operators as more than 15 such pilot movements have been successfully completed lately on various stretches of NWs. In July, IWAI launched a dedicated portal 'FOCAL' to connect cargo owners and shippers with real time data on availability of vessels.

A developed IWT will not only augment the overall transport capacity of the country, but will also help correct the transport modal mix that impose huge logistics costs on the Indian economy. The costs of logistics in

development work is in full swing on eight of them.

The Union Finance Minister, in his Budget Speech for 2014-15, delivered on July 10, 2014, had announced Jal Marg Vikas Project (JMVP) on National Waterway-1 (NW-1) to enable commercial navigation on Varanasi-Haldia stretch of river Ganga. Soon after, began the capacity augmentation on NW-1 under the JMVP, with the technical assistance and investment support of the World Bank at an estimated cost of ₹ 5369 crore. In four years, close to ₹ 2000 crores worth of work is already on ground on National Waterway-1. Of the three multimodal

terminals being built on river Ganga under JMVP, the one at Varanasi is already operational and second in Sahibganj (Jharkhand) will be ready by mid-2019.

Jal Marg Vikas Project (National Waterway-1, River Ganga)

On NW-1, Jal Marg Vikas Project (JMVP) is being implemented for capacity augmentation on Haldia-Varanasi stretch for a distance of 1,390 km, with technical and financial assistance from the World Bank.

NW-1, along with the proposed Eastern Dedicated Freight Corridor and

Table 1: Monetization of Benefits of Inland Waterways

Factor(s) Considered	Rates Considered (Rs./TKm)			Sources
	Waterways	Road	Rail	
Air Pollution	0.03	0.202	0.0366	Planning Commission : TTS Study
Noise Pollution	Negligible	0.0032	0.0012	Permanent International Association of Navigation Congresses (PIANC)
Soil & Water Pollution	Negligible	0.005	NIL	PIANC
Emission of GHGs	0.0006	0.0031	0.0006	12 th Five Year Plan

India, at 15 per cent of GDP, is about twice those in the United States. The logistic share of waterways in the USA is 8.3 per cent, in Europe (7 per cent), in China (8.7 per cent), while in India it is only about 1.5 per cent. India has 14,500 kilometres of navigable inland waterways.

Inland Waterways Authority of India (IWAI), the nodal agency under the Ministry of Shipping is mandated to make National Waterways commercially navigable. IWAI aims to increase the cargo transportation through IWT on National Waterways in the country from 55 million tonnes currently to 150 million tonnes by 2023.

According to a World Bank economic analysis, approximately 1.5 lakh direct and indirect employment opportunities will be created due to interventions under the Jal Marg Vikas Project.

JMVP is a wholly inclusive, economic and environment friendly game changer intervention on river Ganga. Along with giving a fillip to trade and commerce, it will help rejuvenate the river. The project not only creates an alternative, cost effective mode of transport but will create 'Room for River' which has proved to be an effective flood mitigating and river conservancy measure internationally, especially in low lying Netherlands.



Vessel Design

In August, 2018, IWAI made public 13 standardised state-of-the-art ship designs suitable for large barge haulage on river Ganga (National Waterway-1).

This marked attaining of a critical milestone in the growth of the country's Inland Water Transport (IWT) sector as it will help overcome the unique

navigation challenges river Ganga throws up due to its complex river morphology, hydraulics, acute bends, shifting channels, meanders and currents. It will serve as an enabler for the domestic shipbuilding industry working on inland vessels and open huge possibilities for cargo and passenger movement on National Waterway-1.

The specially designed vessels will navigate on low drafts with high carrying capacity which are at the same time, environment friendly. For the shipbuilding industry, the new designs will translate into a savings of Rs 30-50 lakhs in the building of a vessel. Available free on the IWAI website, the designs will remove ambiguity on the class and type of vessels that can sail on river Ganga with efficient manoeuvrability. They will help shipyards build vessels of standardised dimensions and capacity and make them available off the shelf besides developing the 'sale and purchase' market for inland vessels.



vessels namely CL Kasturba and SL Kamla will be deployed for pilgrim movement.

Fairway with navigational aids will be maintained between Prayagraj and Varanasi with targeted least available depth (LAD) of 1 m. Five temporary jetties at Chatnag, Sirsa, Sitamarhi, Vindhyachal and Chunar have also been set up for embarkment and disembarkment of passengers.

As part of the development of NW-1 (Prayagraj to Haldia) IWAI is making substantial interventions to make navigable the Prayagraj -Varanasi

The designs will lead to reduced fuel costs and in turn lesser logistics costs.

These vessels will sail even in depths of about two metres carrying about 350 cars on a five deck car carrier. Some of the designs would enable movement of bulk cargo carriers with capacity of 2500 tonnes at three metres depth, thereby removing almost 150 truckloads of pressure from the road or one full rail rake with the plying of just one such vessel.

The new designs for various categories of dry and liquid bulk carrier, Ro-Ro vessels, car carrier, container carrier, LNG carrier, Tug Barge flotilla (Table 1) have been made by M/s DST, Germany which specialises in low draft and high carrying capacity vessels. The model testing of these designs were done at Duisburg, Germany. The new designs will obviate the dependence of Indian ship builders on foreign ship designs for IWT and prove to be a boost to the 'Make in India' initiative of the Government.

IWAI at Social Congregations

Inland Waterways Authority of India (IWAI) has been working hard towards facilitating safe passenger movements at Kumbh-Mela, 2019.

Kumbh-Mela is scheduled to be held at Sangam, Prayagraj from January 15 to March 15, 2019. IWAI has set up four floating terminals, one each at, Kilaghat, Saraswati Ghat, Naini Bridge and Sujawan Ghat. Further, two IWAI

Benefits of Inland Water Transport

IWT provides supplementary mode of transport which is cost effective, fuel efficient and environment friendly

1. Low emissions - CO₂ equivalent greenhouse gases emission per tonne-km of cargo transportation is 15g by IWT, 28g by Rail and 64g by Road transport.
 2. Low energy consumption - 1 HP can carry 4000 kg load in Water, 500 kg by Rail and 150 kg on Road.
 3. Low fuel cost - 1 litre fuel can move 105 tonne-km by IWT, 85 tonne-km by Rail and 24 tonne-km of freight by Road.
- IWT can provide optimal modal mix by integrating river transport with other modes thereby reducing total logistics cost.
 - It eases congestion on Road and Rail networks.
 - IWT requires very little land acquisition as compared to Road and Rail modes.
 - Caters to the needs of the relatively under developed hinterland.

Business Opportunities

The development works being undertaken by IWAI provide business opportunities to players involved in waterways in the fields of:

- Cargo Movement
- Dredging Works
- Construction, Operation and Maintenance of Terminals
- Barge Construction and Operations
- Navigation Aids
- Hydrographic Surveys
- Manpower Supply for Vessels and Terminals. Training of Vessel Crews
- Stevedoring and Forwarding
- Cruise Operations
- Consultancy Services for Techno-Economic Feasibility, Environmental and Social Impact and Market Analysis Studies, Preparation of DPRs.
- Project Management Consultancy
- Construction Supervision
- Proof Checking of Design
- Model Studies.



Indo-Bangladesh Protocol Route

Day to day protocol permissions are issued by IWAI to barges to sail in the designated port of calls in India and Bangladesh. This Protocol is for mutually beneficial arrangement for the use of waterways for commerce and passage of goods between two places in one country through the territory of the other. The Protocol was first signed in 1972 and is presently valid up to 05th June 2020.

NW-3 has been fully developed for commercial navigation, while NW-4 and NW-5 are being developed with infrastructure of Inland Waterways.

Development of 8 new National Waterways taken up during 2017-18 as:

- Gandak River with a length of 277 km has been declared as National Waterway – 37. It is located from Bhaissalot Barrage near Triveni Ghat to Hajipur in Bihar and Uttar Pradesh.

stretch of river Ganga. This will ensure seamless and safe movement of vessels.

In the past, IWAI has provided similar facilities of ferrying pilgrims and channel marking at Ganga Sagar Mela in West Bengal and Prakash Parv at Patna.

Promoting River Tourism

International publication ‘Condé Nast Traveller’ listed Ganga cruise as one of the ‘six river cruises to take in 2017’

It placed the luxury cruise vessel Ganges Voyager II which sails on the Ganga from Kolkata to Varanasi, in the league of cruises on Mekong and Yangtze in China, Amazon in South America, Volga in Russia and Irrawaddy in Myanmar. Conde Nast’s endorsement of Ganga as a cruise destination is a shot in the arm for river tourism in the country.

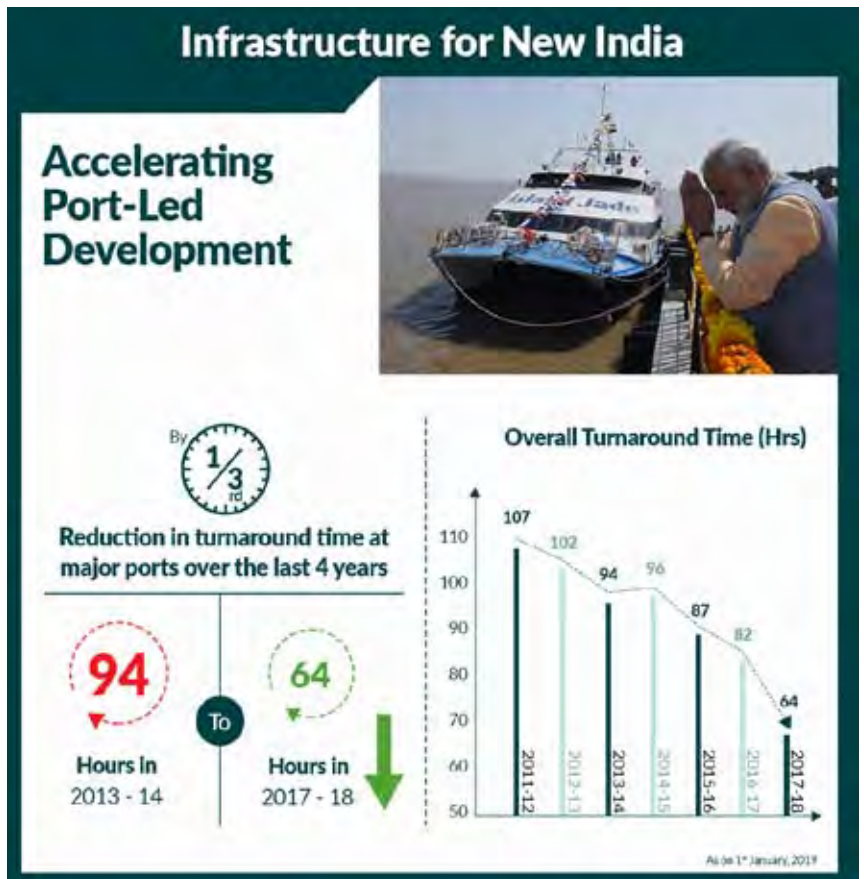
IWAI facilitates cruise operations on NW-1 (river Ganga) from Kolkata to Varanasi in collaboration with private cruise operators. The facilities provided by IWAI include navigation aids like night navigation facility, embarking and disembarking at designated locations, facilitating expeditious crossing of Farakka Navigation Lock, pilotage, and assistance in distress.

In addition to becoming one of the principal cargo movement routes in India, this stretch on NW-1 has good potential for river cruise tourism.

Other National Waterways:

National Waterway-2

River Brahmaputra from Bangladesh Border to Sadiya (891 km) was declared as National Waterway -2 in 1988. The waterway is being developed and operationalized with fairway, navigational aids, terminals with mechanized handling facilities for cargo vessels.



- Rupnarayan River with a length of 72 km has been declared as National Waterway – 86. It is located from Pratappur to Geonkhali in West Bengal.
- Alappuzha – Kottayam – Athirampuzha Canal with a length of 38 km has been declared as National Waterway – 9. It is located from Boat jetty, Alappuzha to Athirampuzha market in Kerala.
- Sundarbans Waterways with a length of 201 km has been declared as National Waterway – 97 in West Bengal.
- Key cargo commodities on Barak River NW 16 are Construction material, Rice, Coal, Paper and Goods. The project cost is INR 76.01 Cr.
- Cumberjua Canal (NW27) – 17 km: Confluence of Cumberjua and Zuari rivers near Cortalim ferry terminal to confluence of Cumberjua and Mandovi rivers near Sao Martias Vidhan Parishad.
- Mandovi River (NW68) – 41 km: Bridge at Usgaon to confluence of Mandovi River with Arabian Sea at Reis Magos.
- Zuari River (NW111) – 50 km: Sanvordem Bridge to Mormogao Port.

(E-mail:vc.iwai@nic.in)

Achievements of Major Ports

The Government is regularly monitoring the port projects for development/expansion of the major Ports. Some of the major policy and procedural steps and achievements in the recent past are:

- To bring the major ports at par with the International standards, a study on Benchmarking of efficiency and productivity of major ports was carried out. The study has identified 116 port-wise action points/initiatives, of which 91 initiatives have already been completed.
- A new Special Purpose Vehicle, namely Indian Port Rail Corporation Ltd. has been set up as a public limited company to undertake last mile rail connectivity projects in major ports so as to improve their handling capacities and efficiency.
- Average Turn-Round Time, which was 82.28 hrs during 2016-17, came down to 64.43 hrs.
- Average Output per Ship Berthday improved to 15333 tonnes during 2017-18.
- Major Ports handled 679.37 million tonnes cargo during 2017-18
- Around 92 MTPA capacity was added in major ports during 2017-18. Total capacity of major ports reached to the level of 1451.19 MTPA during 2017-18.
- Operating Surplus of major ports increased by Rs. 916.22 crores during 2017-18



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DO YOU KNOW?

Shyama Prasad Mukherjee Rurban Mission (SPMRM)

“Shyama Prasad Mukherjee Rurban Mission (SPMRM)” was launched by the Prime Minister on February 22, 2016, from Kurubhat in Rajnandgaon district of Chhattisgarh. The aim of the Mission was to develop rural growth clusters in all States and Union Territories (UTs) so that overall development in the region can be triggered. These clusters are to provide economic activities, developing skills and local entrepreneurship and providing infrastructure amenities.

As per information given by the Minister of State for Rural Development, Shri Ram Kripal Yadav in Lok Sabha on December 13, 2018, the SPMRM is under implementation across the country. Out of the mandated 300 clusters, 295 clusters have been identified and approved across 29 States and 6 Union Territories. With an outlay of Rs. 5142.08 crore, this unique programme is designed to deliver catalytic interventions to rural areas on the threshold of growth. There is a funding support of up to 30 per cent of the estimated investment for each Rurban cluster, given as Critical Gap Funding (CGF), while 70 per cent of the funds is mobilized by the States through convergence with synergic State and Central programmes as well as private investment and institutional funding. Upon being re-classified as a Centrally Sponsored Scheme, the CGF is now shared between the Centre and the State in a ratio of 60:40 for Plain area States and 90:10 for Himalayan and NE States.



Further, through intense engagements with the States, 232 Integrated Cluster Action Plans (ICAPs), which are the blue prints of investment for each cluster, have been approved. Rs1314 crore of Central Share of CGF, Rs. 627.91 crore as corresponding State Share and Rs. 103.25 crore of Administrative Funding, has been released to 29 States and 6 Union Territories over the last four financial years. In FY 2015-16, administrative funds of Rs.32.05 crore has been released. In FY 2016-17, the BE of Rs. 300 crore was doubled at the RE stage to reach 100 per cent expenditure, with a total release of Rs. 600 crore. In FY 2017-18, Rs. 553.26 crore was released to States/UTs against the revised estimate of Rs. 600 crore. In the current FY 2018-19, 236.90crore has been released, against a revised estimate (RE) of Rs. 551.03 crore.

Substantial part of the works identified for development in the clusters is focused on provision of basic and economic amenities. Provision of basic amenities in a cluster typically comprise; provision of 24/7 Water Supply to all households, Solid and Liquid Waste Management facilities at the household and cluster level, provision of Inter and Intra village roads within the cluster, adequate Street Lights and Public Transport facilities using green technologies. Provision of Economic Amenities in a cluster comprise various thematic areas in the sectors of Agri Services and Processing, Tourism, and Skill development to promote Small and Medium Scale Enterprises.

National Heritage City Development and Augmentation Yojana (HRIDAY)

The Ministry of Housing and Urban Affairs, Government of India, launched the National Heritage City Development and Augmentation Yojana (HRIDAY) scheme on January 21, 2015, with a focus on holistic development of heritage cities. The main objective of HRIDAY is to preserve character of the soul of heritage city and facilitate inclusive heritage linked urban development by



exploring various avenues including involving private sector. Specific objectives are given below:

- Planning, development and implementation of heritage sensitive infrastructure.
- Service delivery and infrastructure provisioning in historic city core areas.
- Preserve and revitalize heritage wherein tourists can connect directly with city's unique character.
- Develop and document a heritage asset inventory of cities – natural, cultural, living and built heritage as a basis for urban planning, growth and service provision and delivery.
- Implementation and enhancement of basic services delivery with focus on sanitation services like public conveniences, toilets, water taps, street lights with use of latest technologies in improving tourist facilities/amenities.
- Local capacity enhancement for inclusive heritage-based industry.
- Create effective linkages between tourism and cultural facilities and also the conservation of natural and built heritage.
- Urban heritage adaptive rehabilitation and maintenance, including appropriate technologies for historic buildings retrofitting.
- Establish and manage effective public private partnership for adaptive urban rehabilitation.
- Development and promotion of core tangible economic activities to enhance avenues of livelihoods amongst stakeholders. This would also include necessary skill development amongst them including making public spaces accessible and developing cultural spaces.
- Making cities informative with use of modern ICT tools and making cities secure with modern surveillance and security apparatus like CCTV etc.
- Increase accessibility i.e. physical access (roads as well as universal design) and intellectual access (i.e. digital heritage and GIS mapping of historical locations/ tourist maps and routes).

The scheme is implemented in 12 identified Cities namely, Ajmer, Amaravati, Amritsar, Badami, Dwarka, Gaya, Kanchipuram, Mathura, Puri, Varanasi, Velankanni and Warangal.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

The Government of India launched the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) with the aim of providing basic civic amenities like water supply, sewerage, urban transport, parks as to improve the quality of life for all especially the poor and the disadvantaged. The focus of the Mission is on infrastructure creation that has a direct link to provision of better services to the citizens.

The purpose of “AMRUT” mission is to (i) ensure that every household has access to a tap with assured supply of water and a sewerage connection (ii) increase the amenity value of cities by developing greenery and well maintained open spaces e.g. parks and (iii) reduce pollution by switching to public transport or constructing facilities for non-motorized transport e.g. walking and cycling. The Mission aimed to cover 500 cities that include all cities and towns with a population of over one lakh with notified Municipalities. Total outlay for AMRUT is Rs. 50,000 crores for five years from FY 2015-16 to FY 2019-20 and the Mission is being operated as a Central Sponsored Scheme. The project fund is divided among States/UTs in an equitable formula in which 50:50 weightage is being given to the urban population of each State/UT and number of statutory towns.



Mission Components

The components of the AMRUT consist of capacity building, reform implementation, water supply, sewerage and septage management, storm water drainage, urban transport and development of green spaces and parks. During the process of planning, the Urban Local Bodies (ULBs) strive to include some smart features in the physical infrastructure components. The details of the Mission components are given below:

Water Supply Water supply systems including augmentation of existing water supply, water treatment plants and universal metering. ii. Rehabilitation of old water supply systems, including treatment plants. iii. Rejuvenation of water bodies specifically for drinking water supply and recharging of ground water. iv. Special water supply arrangement for difficult areas, hill and coastal cities, including those having water quality problems (e.g. arsenic, fluoride)

Sewerage i. Decentralised, networked underground sewerage systems, including augmentation of existing sewerage systems and sewage treatment plants. ii. Rehabilitation of old sewerage system and treatment plants. iii. Recycling of water for beneficial purposes and reuse of waste water.

Septage i. Faecal Sludge Management- cleaning, transportation and treatment in a cost effective manner. ii. Mechanical and Biological cleaning of sewers and septic tanks and recovery of operational cost in full.

Storm Water Drainage i. Construction and improvement of drains and storm water drains in order to reduce and eliminate flooding.

Urban Transport i. Ferry vessels for inland waterways (excluding port/bay infrastructure) and buses. ii. Footpaths/ walkways, sidewalks, foot over-bridges and facilities for non-motorised transport (e.g. bicycles).

Source: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=186363>, <https://www.hridayindia.in/>, <http://mohua.gov.in/cms/amrut.php>

Water Resources and Ganga Rejuvenation-Recent Milestones

- **National Mission for Clean Ganga (NMCG):**

Ganga Rejuvenation:- Under Namami Gange programme, a total of 254 projects worth Rs.24,672 crore have been sanctioned for various activities such as sewage infrastructure, ghats & crematoria development, river front development, river surface cleaning, institutional development, biodiversity conservation, afforestation, rural sanitation, and public participation.

For River Front Development, works at 145 ghats and 53 crematoria are in progress and expected to be completed by March 2019.

On rural sanitation front, all 4465 villages on the bank of river Ganga have been made Open Defecation Free (ODF) and 10,83,688 Individual Household Toilets have been constructed by Ministry of Drinking Water and Sanitation (MoDWS). NMCG has released Rs. 829.0 crore to MoDWS for this.

Total 6 no. of projects on biodiversity conservation and restoration of aquatic biodiversity of river Ganga including Dolphin, Ghariyal, Otter, water birds and fish & fisheries have been taken up, out of which 2 projects have been completed. Rs. 190.3 crores has been sanctioned to the State Forest Departments of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West-Bengal for the year 2018-19, as a part of the afforestation program in the Ganga basin.

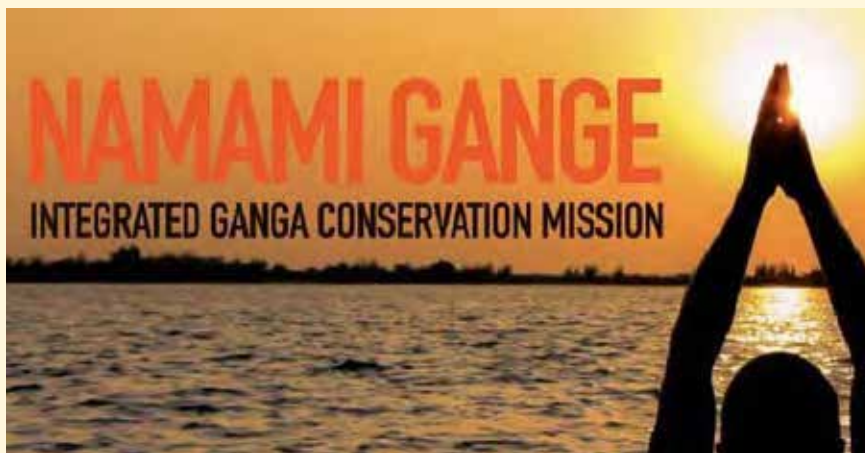
During the financial year 2018-19 (till 30.11.2018), National Mission for Clean Ganga has released Rs.1532.59 crore to the states, Central Public Sector Undertakings for the implementation of the programme, including expenditure incurred for establishment.

- **Dam Projects:-**

Shahpur Kandi Dam Project: An agreement was reached between Punjab and J&K states under the aegis of MoWR, RD&GR at New Delhi on 8th September, 2018 to resume works of Shahpur Kandi Dam project in Punjab on river Ravi. This project had been declared as a National Project. The Union Cabinet on 6th December, 2018 has approved the proposal of this Ministry for extending a Central Assistance of Rs. 485.38 crore (for irrigation component) for implementation of this project. The project would be completed by June 2022.



This project will help in creation of additional irrigation potential of 5000 ha in Punjab State and 32173 ha in J&K State and also efficient management of 1.18 Lac ha area under UBDC system in Punjab. Consequently, this project would help minimising some of the water of the River Ravi which at present is going waste through the Madhopur Headworks downstream.



Lakhwar Project: A Memorandum of Understanding was signed on 28th August 2018 between Shri Nitin Gadkari, Union Minister for Water Resources, River Development and Ganga Rejuvenation, Shipping and Road Transport & Highways and Chief Ministers of Uttar Pradesh, Rajasthan, Uttarakhand, Haryana, Delhi and Himachal Pradesh for the construction of Rs. 3966.51 crore Lakhwar Multi-Purpose project in the Upper Yamuna Basin. The Lakhwar project envisages construction of a 204 m high concrete dam across river Yamuna near Lohari village in Dehradun district of Uttarakhand with a live storage capacity of 330.66 MCM. This storage will provide irrigation for 33,780 hectares land and availability of 78.83 MCM water for domestic, drinking and industrial use in the six basin states. The project will also generate 300 MW of power. The project is to be executed by M/s Uttarakhand Jal Vidyut Nigam Limited (UJVNL).

Completion of balance works of North Koel Reservoir Project, Bihar and Jharkhand:

The Ministry of Water Resources, RD & GR has taken up the work on completion of balance works of North Koel Reservoir Project, Bihar and Jharkhand which was halted in 1993. The Union Cabinet in August 2017 has approved the proposal at an estimated cost of Rs 1622.27 crore during three financial years from the start of the project

The project aims to provide additional irrigation to 39,801 hectares of land annually in the drought prone areas of Aurangabad & Gaya districts of Bihar, Palamu & Garhwa districts of Jharkhand.

Dam Rehabilitation and Improvement Programme (DRIP):

In the year 2018-19 Dam Break Analysis were conducted on 38 Dams for preparation of Inundation maps. DHARMA, a web based dam inventory management software has been completed.

• Interlinking of Rivers (ILRs):

National Perspective Plan (NPP) proposals:

Detailed Project Reports (DPRs) of three priority links have been completed viz. Ken-Betwa link project (Phase-I&II), Damanganga-Pinjal link project and Par-Tapi-Narmada link project. and the project report is ready for implementation.

Intra-State link proposals:

DPRs of four intra-state link projects viz., Burhi Gandak-Noon-Baya-Ganga link and Kosi-Mechi link of Bihar State, Ponnaiyar-Palar link of Tamil Nadu and Wainganga (Gosikhurd)-Nalganga(Purna/Tapi) link project of Maharashtra have been completed and sent to respective States. Preparation of DPRs of Damanganga (Ekdare)-Godavari and Damanganga(Vagh/Val)-Vaitarna-Godavari (Kadva Dev) link projects of Maharashtra are under progress.



Proposal for Diversion of Godavari waters upto Cauvery basin:

As per the Planning of the Peninsular Component of the National Perspective Plan (NPP) about 20,796 MCM of water from Mahanadi and Godavari rivers is to be transferred through the nine link system namely (i) Mahanadi – Godavari link (ii) Inchampalli – Nagarjunasagar link (iii) Inchampalli – Pulichintala link (iv) Polavaram – Vijayawada link (implemented by Government of Andhra Pradesh) (v) Almatti – Pennar link (vi) Srisailem – Pennar Link (vii) Nagarjunasagar – Somasila link (viii) Somasila – Grand Anicut link and (ix) Cauvery – Vaigai – Gundar link to Krishna, Pennar, Cauvery, Vaigai and Gundar basins.



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UDAN – Giving New Meaning to Air Connectivity

Usha Padhee

It is about two years since UDAN was conceived. The Union Government's flagship regional connectivity scheme has, by now, become an important means for making low cost flying available to people in smaller Indian cities. In these two years, the scheme has brought first time air connectivity to people of 35 tier-II and tier-III cities (as on December 2018). As a new version of the scheme starts now to link tourist places and international destinations, it is time to look at the valuable lessons the scheme has thrown up for the civil aviation practitioners.

Since the last 10 years, air traffic has grown three folds in India and it has the potential to be among the global top three nations in terms of domestic and international passenger traffic. There is a need to promote the growth of the Indian aviation sector in a significant manner as the development of this sector has a multiplier effect on the economy. As per an International Civil Aviation Organization (ICAO) study, the output multiplier and employment multiplier are 3.25 and 6.10, respectively. In 2016 Government of India launched National Civil Aviation Policy (NCAP) to provide an ecosystem for the harmonized growth of various aviation subsectors like airlines, airports, cargo, etc. The policy envisions creating an eco-system to make flying affordable for the masses and to enable 30 crore domestic ticketing by 2022 and 50 crore by 2027, and international ticketing to increase to 20 crores by 2027.



Making Air Travel Convenient

UDAN (*Ude Desh Ka Aam Naagrik*) is a fulcrum under NCAP to make air travel convenient and affordable for the common man in small cities, and, through this, push regional growth. Currently, 70 per cent of air traffic in the country caters only to the metros. Since independence, India had only 67 airports with scheduled commercial operations till very recently. UDAN addresses the challenges relating to the issue of lack of infrastructure and affordability by upgrading the airports and cutting down on the cost of operations by extending various incentives to airlines and thus making air tickets affordable. The scheme is, therefore, crucial for ensuring that the Indian aviation sector's success story touches one and all and the tier-II and tier-III cities also join the aviation revolution.

Since the launching of UDAN in 2017, 61 new sectors have been

added till date enhancing the power of aviation network. More than a million passengers have travelled in these routes and the impact on the eco-system of aviation is tremendous by bringing first time flyers to the aviation market. New city pairs have been established by connecting smaller cities with metros jump starting the regional market.

UDAN works on an innovative model that cuts through the need to deploy huge resources and long gestation periods to make an airport operational. The scheme provides for revival and upgradation of existing airstrips in small cities where UDAN operations would happen. To reduce the costs of operations for airlines, concessions from Centre, States and airport operators are extended. This new approach not only makes air services available for limited population bases in smaller towns, it also makes the services affordable for them.

The author is Joint Secretary, Ministry of Civil Aviation, Government of India.

Since the launching of UDAN in 2017, 61 new sectors have been added till date enhancing the power of aviation network. More than a million passengers have travelled in these routes and the impact on the eco-system of aviation is tremendous by bringing first time flyers to the aviation market

Salient Features of RCS-UDAN

- The Regional Connectivity Scheme-UDAN intends to enable air operations on unserved routes connecting regional areas, promote balanced regional growth and make flying affordable for the masses.
- RCS-UDAN, which would be in operation for a period of 10 years, envisages providing connectivity through revival of existing air-strips and airports.
- Financial stimulus in the form of concessions from Central and State governments and airport operators and the Viability Gap Funding to the selected airlines to kick-off operations from Unserved/Underserved airports, so



that the passengers fares are kept affordable.

- RCS-UDAN is a demand driven scheme where the interested airlines and helicopter operators are selected through competitive bidding process.

- The selected airline operator of RCS-UDAN would have to provide a minimum of 9 and a maximum of 40 RCS seats on the RCS flight for operations through fixed wing aircraft. All seats upto 13 passengers for helicopters will be considered as RCS seats.

- The fare for one hour journey of approximately 500 km on a fixed wing aircraft or for a 30-minute journey on a helicopter would be approximately Rs.2,500, with proportionate pricing for routes of different stage length/flight duration.
- On RCS route, the minimum frequency would be three and maximum of seven departures per week in other than priority areas.

The scheme is, however, fraught with implementation challenges. The initial focus of the scheme was to select airline operators through a bidding process that would be transparent and fair. It was the key to generate confidence among the airlines.

In the first two rounds of UDAN, 56 airports and 31 heliports have

UDAN – A Win – Win For All Stakeholders

Citizens <ul style="list-style-type: none"> • Connectivity • Affordability • Jobs 	Airlines <ul style="list-style-type: none"> • Incumbents : creation of new feeder routes; bringing new passengers to aviation. • Start-ups : new opportunities to create scalable business models as regional airlines.
National Government <ul style="list-style-type: none"> • Jumpstarting the regional aviation market. • Metcalfe law : power of a network increases as new nodes are added. 	Airport Operator <ul style="list-style-type: none"> • Expansion opportunities. • More passengers for existing airports.
Regions <ul style="list-style-type: none"> • More trade and commerce. • Tourism circuits. • Development of remote areas. 	Original equipment manufacturers (OEMs) <ul style="list-style-type: none"> • India is expected to move from 450 to 1,200 aircrafts in a decade. • Growth of domestic manufacturers, India as an export hub.



State Governments are equally important. There are many actors who have to fulfill their responsibilities in tandem.

Implementation Mechanisms

Though most State Governments came forward and signed MoUs with Government of India, their limited capacities demanded hand holding support from professional organizations. Civil

airports like Nanded in Maharashtra and Vidyanagar in Karnataka have become shining examples under UDAN. Plans are already afoot to take the Regional Connectivity Scheme (RCS) for tourist destinations and expanding the scheme for international routes based on the requests from the State Governments. This initiative would open more challenges as well as opportunities which need to be dealt with prudently.

Implementation challenges not only involve monitoring and assisting for revival of airports but also facilitation for obtaining Air operator permits for selected airlines and helicopter operators under the scheme. Few small airline operators who have bid under UDAN are facing teething problems due to their limited capacities. It is imperative for UDAN to work with small airlines which have potential to take the regional scheme to remote areas. Availability of qualified crew is also a major challenge for airlines and significant efforts are needed to create a pool of skilled professionals..

A positive outcome of UDAN also includes the regulatory framework for 'no-frill' airports and 'aircraft-centric security' approach which has cut down the cost of infrastructure and operations that will help sustainability of air connectivity to smaller cities. Desirable changes in the scheme have to meet the increasing aspirations and challenges in future. UDAN is poised to offer wings to the common man to fly, literally. □

(E-mail: usha.padhee@nic.in)

been added to India's aviation map. The Scheme is moving towards third round of awarding routes to connect the iconic tourism sites and priority areas to contribute to the growth of tourism and commerce. Many awarded routes would connect remote areas of north-eastern States as well as the left wing extremism affected areas. Be it Guwahati to Passighat (Arunachal Pradesh) or Dehradun to Pithoragarh (Uttarakhand), travelling time would reduce so dramatically that it would transform the lives of the people in the region. Affordable airfare not only facilitates travelling for trade but also for tourism and medical facilities. However, awarding of routes under the scheme is only the beginning of the journey. Preparedness of airports, readiness of airlines and involvement of

aviation sector is highly regulated due to its sensitive nature. Licensing of airports is a tedious process. Safety and security are paramount and the operations have to comply with required regulations. To address these challenges, the implementation mechanism needs to be strengthened. Airport Authority of India (AAI) is providing necessary support to State Governments in developing the airports, documentation for licensing, procurement of security and fire tender equipment, etc. In some Defence airports, Standard Operating Procedures (SOPs) have been worked out in consultation with Ministry of Defence. Though it took considerable amount of time, UDAN has been successful in motivating private airports to participate and extend benefits to UDAN flights. Today,

Air Connectivity Reaches Sikkim

The Pakyong Airport was inaugurated by the Prime Minister in Sikkim recently. This is the first airport in the Himalayan State, and the 100th airport in the country. Pakyong Airport is expected to greatly ease connectivity to Sikkim. In order to ensure that it is useful to the common man, this airport has been made part of the UDAN scheme.

Addressing a large public gathering on the occasion, the Prime Minister described the day as a historic one for Sikkim, and an important one for India. He said that with Pakyong Airport, the country has hit a century of airports.

The Prime Minister said that emphasis is being given to enhance both infrastructural and emotional connectivity in the entire North Eastern region, at a rapid rate. The Prime Minister said that out of 100 airports in the country today, 35 have been operationalized in the last four years.



Bharatmala Pariyojana: The Biggest Revolution in Indian Highways

D. Dash

Roads are the lifeline for any country and the lifeline needs to be better and stronger to improve mobility, boost economy and generate jobs. Though the road network in India has increased from 3.99 lakh kilometers in 1951 to 56.03 lakh kilometers in 2016, a large share of them are less than two-lane while more than 70 per cent of the National Highways (NHs) in India are either two-lane or less.

The first major policy push to widen the NHs was made in 1998 during Atal Bihari Vajpayee government by launching the National Highways Development Programme (NHDP), which had two major components of 5,846 kilometers of Golden Quadrilateral (GQ) connecting the four metro cities of Delhi, Mumbai, Chennai and Kolkata and 7,142 kilometers' network connecting Srinagar to Kanyakumari and Silchar to Porbandar. These networks are known as North-South and East-West corridors.

The second big revolutionary decision to upgrade NHs was taken in October 2017 when the Central government approved the phase-I

The image is a graphic titled "Infrastructure for New India" with the subtitle "Paving the Roads of Development". It features a photograph of a modern highway interchange. Below the photo, there are two columns of text. The left column is titled "BHARATMALA PARIYOJANA: PHASE-I" and states "₹5, 35,000 crore for expanding highways sector with multi modal integration". The right column is titled "SETU BHARATAM PROJECT FOR SAFER ROADS" and states "Making all National Highways free of railway level crossings, by 2019, by building Railway Over Bridges/ Under Passes Total outlay of ₹20,800 Crore". At the bottom right, it says "As at 1st January 2018".

of Bharatmala Pariyojana covering 24,800 kilometers with an estimated expenditure of Rs 3.85 lakh crore. The government has set March 2022 target for National Highways Authority of India (NHAI) for completion of the programme.

The massive highway development programme has many firsts to its credit; starting from preparation of the plan to identifying the highway stretches and the new approach of building roads on new alignment. The Road Transport and Highways

The second big revolutionary decision to upgrade NHs was taken in October 2017 when the Central government approved the phase-I of Bharatmala Pariyojana covering 24,800 kilometers with an estimated expenditure of Rs 3.85 lakh crore....The massive highway development programme has many firsts to its credit; starting from preparation of the plan to identifying the highway stretches and the new approach of building roads on new alignment. The Road Transport and Highways Ministry has termed as “crow flight” alignments.

The author is a senior Delhi based journalist.

Speed and Scale of Transformation

Connecting India at Express Pace



Rural road connectivity increased from 56% in 2014 to 91% villages



Average speed of rural road construction



National Highway Network



Speed of highway construction



As on 31 January, 2019

Ministry has termed as “crow flight” alignments.

One of the main reasons behind the decision to go for a massive revamp of country’s NH network was that the NHDP rolled out in 1998 had reached a certain level of maturity. It was essential to redefine road development and have a macro approach while planning expansion of the national highways network.

The Process

The government undertook a detailed study of the goods (cargo) movement between the high-density corridors scientifically after identifying the Origin-Destination. Since one of the main aims of the programme was to improve cargo traffic flow, a considered strategy was formulated to develop new Economic Corridors. Improved logistics movement has a force multiplier effect on the economy. The Origin-Destination study also considered the integration of economic corridors with the ongoing projects under NHDP.

This study brought out interesting facts of how different stretches of some corridors have infrastructure asymmetry. For example, in the Mumbai-Kolkata corridor, a significant stretch passing through Odisha is two-laned and there are frequent lane changes as well. If this entire stretch is not upgraded to at-least uniform 4-lane facility, the traffic movement will not be smooth. This simply proved the point as to how and why there was a dire urgent need to address such asymmetry on corridors across the country.



Considering that in addition to development of new corridors and feeder routes, there was a need to improve the throughput of the road stretches already developed under the NHDP, the preparatory work focused on de-congesting stretches by building of bypasses, ring roads, developing multimodal logistics parks to enable freight aggregation and disaggregation and effective modal shifts.

Moreover, to cater to the need for infrastructure development in the border and coastal areas to India’s Export-Import (EXIM) trade, the highway development programme has provisioned for improving border roads based on strategic importance, particularly the ones connecting to trading points with India’s neighbours - Nepal, Bangladesh and Bhutan. The coastal road development and port-connectivity roads enhancement have been synergized with the Sagarmala programme.

Components

- **Economic Corridors:**

The origin-destination study which was commissioned with the aim of improving logistics efficiency identified 44 new Economic Corridors. Some of these are Mumbai–Agra, Mumbai–Kolkata, Chennai–Madurai, Bilaspur–Delhi, Pune–Vijayawada, Indore–Jaipur and Amritsar–Jamnagar. The Economic Corridors are expected to carry 25 per cent of freight in the coming years. As per the plan, these corridors along with national corridors (GQ and North South and East West)

would form India's new Highway Grid. As per estimates, the National and Economic Corridors along with their inter-corridor and feeder routes would be able to carry 80 per cent of our freight traffic.

- **Inter Corridor and Feeder Routes:**

The origin destination study also identified a network of shorter inter corridor routes connecting two existing corridors and feeder routes to the corridor network. These roads are expected to carry around 20 per cent of freight. The effectiveness of the corridors can be improved by development of the feeder routes.

- **Improvement in Efficiency of National Corridors:**

Currently, the NHs including the GQ and North South and East West corridor carry nearly 35 per cent of India's freight. All these stretches will be declared National Corridors. These stretches have shown high growth in traffic volumes by virtue of being the lifeline of India's highway network. The average traffic in the six national corridors is more than 30,000 passenger car units (PCU). Under the Bharatmala programme, all these stretches will be widened to 6-8 lanes. In the past few years, these National Corridors have also developed choke points impacting logistics efficiency. So, to decongest and do away with



these choke points, new Ring Roads and bypasses/ elevated corridors will be built. In addition, multimodal logistics parks will be developed at critical economic nodes along GQ and North South and East West corridors to enable efficient modal transfers, freight aggregation and disaggregation.

- **Development of Border and International Connectivity Roads:**

Around 3,300 kilometers of border roads have been identified to be built and widened along the international border for their strategic importance. Around 2,000 kilometers of roads are required for connecting India's major highway corridor to international trade points to facilitate EXIM trade with Nepal, Bhutan, Bangladesh and Myanmar.

- **Development of Coastal and Port Connectivity Roads:**

Under Bharatmala programme, about 2,100 kilometers of coastal roads have been identified to be built along the coast. These roads would boost both tourism and industrial development of the coastal region. These will also improve connectivity to ports to facilitate EXIM trade. A major focus will be to improve linkage to state government owned and private ports.

#	Component	Length (km)	Cost (in Rs cr)
1	Economic Corridors Development	9,000	120,000
2	Inter Corridor and Feeder Route Development	6,000	80,000
3	National Corridors Efficiency improvement (6-laning of GQ, NS-EW, removal of congestion points, development of logistics parks, etc.)	5,000	100,000
4	Border Roads and International Connectivity	2,000	25,000
5	Coastal Roads and Port Connectivity	2,000	20,000
6	Green field Expressways	800	40,000
Total		24,800	385,000
Existing Projects under implementation		10,000	150,000

Infrastructure for New India

Next Gen Infra for New India



India's Longest Road
Tunnel - the Chenani -
Nashri Tunnel in Jammu



Bridges over Narmada at
Bharuch and Chambal at Kota



India's Longest Bridge -
the 9.15 km long Dhola -
Sadiya Bridge over River
Brahmaputra in Assam.
24x7 with Eastern Arunachal Pradesh

Asia 1st January, 2019

• Development of Green-field Expressways:

Bharatmala programme also envisages building expressways close to the National and Economic Corridors where traffic has breached the 50,000 PCUs and there are multiple choke points. About 1,900 km of these stretches have been identified for development of green-field expressways. One such mega project connecting Delhi with Mumbai has started taking shape. Expressways have limited entry and exit points and there is no traffic signal or toll plaza on the main carriageway, which ensures seamless and faster traffic movement.

To ensure there is no procedural delay in approval and roll out of works, the government has empowered NHAI Board to take decision and approve projects. NHAI Board is an inter-ministerial entity, which has representation from Highways and Finance Ministries, Niti Aayog and the Highway Authority. The progress so far has been satisfactory.

Benefits:

Bharatmala Pariyojana once implemented, will enable improvement in efficiency of freight and passenger movement on NHs. The network, as identified under the Bharatmala network, will cater to 80 per cent of the inter-district freight movement in the country. Moreover, the network will connect 550 districts in the country accounting for nearly 90 per cent of the nation's GDP. Moreover, standardized wayside amenities on the corridors will come up, which will improve convenience of passenger movement significantly.

The development of economic corridors and the associated inter corridor and feeder routes will enable improvement in average speeds of vehicles by about 20–25 per cent. Initiatives of building access controlled expressways with features of “closed tolling” system will further improve the average speeds on highways. Improvement in average speed of the freight vehicles will,

in turn, have three major benefits: improved vehicle utilization resulting in faster breakeven and hence lower freight cost per tonne per kilometer; improvement in fuel efficiency of the vehicles due to lower idling time, resulting in lower freight cost and faster and reliable freight transit, leading to a reduction in average inventory carried in freight. The network once developed will enable a reduction of 5–6 per cent in the overall supply chain costs in the economy, the government has estimated.

In addition, upgradation of 24,800 km of NH network in the first phase is expected to generate roughly 10 crore man-days of employment during the construction phase and roughly 22 million permanent jobs driven by increased level of economic activities due to development of the Economic Corridor network.

Funding for Programme

The government has estimated a total expenditure of about Rs 6.92 lakh crore including Rs 3.85 lakh crore for Bharatmala to complete all ongoing works. About one-third of the fund i.e. Rs 2.37 lakh crore will come from fuel cess and another Rs 60,000 crore will come as budgetary support. The NHAI has started the programme of monetizing already completed projects and it targets to generate about Rs 34,000 crore. This scheme is known as Toll Operate Transfer (TOT), which means completed stretches are bid out to private players for collecting toll for certain years. The private players make upfront payment to NHAI to get these works. They are responsible for maintenance of the highway stretches as well.

The government expects it will pump in about Rs 46,000 crore in the programme from its total toll collection. NHAI will borrow another Rs 2.09 lakh crore from market borrowing and the private investment is pegged at Rs 1.06 lakh crore. □

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Transforming Connectivity: Indian Railways on the Go

Deepak Razdan

Indian Railways, the third largest railway network in the world, has, in the past few years, undergone transformational changes to expand its reach to every corner of the country at a remarkable speed, and to provide passenger and freight services with safety and punctuality.

The railways maintain a gigantic network of 63,000 kms and run 22,000 trains to transport 1.50 million passengers daily. This requires keeping infrastructure such as track, bridges,

signalling and telecommunications in fit condition. The Government under the Prime Minister's leadership enhanced investment in the railways, and gave it a big push so that it maintains existing services, and meets their ever growing demand. The allocation for Railways has increased to Rs 5.30 lakh crores in the past five years.

The Railways are now connecting India at a faster pace with a 59 per cent increase in the average speed of commissioning new lines from 4.1 km (2009-14) per day to 6.53

kms per day (2014-18). The annual capital expenditure during the first four years of the Government saw a quantum leap and was more than double that of the 2009-14 average.

Transformation is on from Kanyakumari in the South to the North East region. Doubling of tracks and electrification projects, which provide much relief to a system under stress, have been launched in the Kanyakumari-Nagercoil-Thiruvananthapuram section covering 349 kms at a cost of Rs.3618 crores.



The author is a senior Journalist, and at present Editorial Consultant, The Statesman, New Delhi.

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Connecting the Seven Sisters

In the North East, rail connectivity has come to all the Seven Sister States of Assam, Meghalaya, Nagaland, Tripura, Mizoram, Manipur and Arunachal Pradesh. Meghalaya came on the rail map with the flagging off of the first ever train from Guwahati to Mendipathar in Meghalaya on 29 November, 2014 by the Prime Minister. Tripura has been put on the broad gauge railway map. On July 31, 2016, the Agartala-New Delhi 'Tripura Sundari Express' was flagged off. The Agartala-New Delhi Rajdhani Express was launched on October 28, 2017. It trudges the longest route (2,422 km) for any Rajdhani Express in service.

Jiribam, the first railway station in Manipur was connected by broad gauge line. The Prime Minister flagged off the first passenger train service to Jiribam on May 27, 2016. The passenger train service to Bhairabi in Mizoram was also flagged off by him. The Lumding-Silchar Broad Gauge section was inaugurated after gauge conversion on November 20th, 2015, giving seamless broad gauge connectivity to Barak Valley of Assam. Broad gauge rail link is being extended to all eight North East state capitals.

The North-East is witnessing historic changes. The Bogibeel



The Bogibeel Bridge, the longest Rail-cum-Road Bridge of the country running 4.94 km in length across river Brahmaputra near Dibrugarh in Assam has been commissioned, connecting Assam and Arunachal Pradesh. Dedicated to the nation by the Prime Minister on 25th December, 2018 the bridge has double line track with three-lane road and 74 km of total railway track.

Bridge, the longest Rail-cum-Road Bridge of the country running 4.94 km in length across river Brahmaputra near Dibrugarh in Assam has been commissioned, connecting Assam and Arunachal Pradesh. Dedicated to the nation by the Prime Minister on 25th December, 2018 the bridge has double line track with three-lane road and 74 km of total railway track.

Sanctioned in 1997-98 at a cost of Rs.1000 crore, work on Bogibeel was commenced in April, 2002 by the late Shri Atal Bihari Vajpayee, then Prime Minister of India. The completion cost of the project is estimated at Rs.5820 crore.

India's tallest bridge with pier height of 141 m is being constructed on Irang River at Noney in Tamenglong district, Manipur as part of the Jiribam-Tupul-Imphal new line, a marvel of railway engineering. Its height will be almost equal to two Qutub Minars combined. There will be six tall bridges having pier height more than 70 m in the Bhairabi-Sairang 51.3 km new line project.

Among the remarkable changes in the North East were the completion of 970 km gauge conversion project in the region in the last four years. All metre gauge (MG) sections have been

converted to broad gauge (BG) and there is no MG operation in the entire North East Region. There has been addition of 353.15 km of New Lines, Gauge Conversion and Doubling commissioned per year during the period 2014-15 to 2017-18, as against the average of 110 km commissioning per year in the NE Region during 2009-2014. Fifteen new line projects of 1,397 km length having a total cost of Rs 47,695 crore are in different stages of planning, sanction or execution, which fall partly or fully in the NE states, to make the region a composite region.

Capacity Augmentation

Capacity augmentation was essential on the Indian Railways, and the railways launched two Dedicated Freight Corridor (DFCs) projects, Eastern and Western Dedicated Freight Corridors (EDFC and WDFC), for the purpose. The two projects have progressed full speed since 2014, culminating in successful trial of freight trains over Phulera-Atari section of the Western Dedicated Freight Corridor (WDFC) and Khurja-Bhadan section of Eastern Dedicated Freight Corridor (EDFC) in August and November 2018, respectively.

Speed and Scale of Transformation

Unprecedented Speed, Scale and Safety in Rail Development



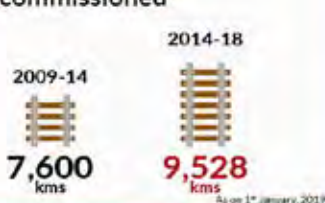
Consequential Train Accidents **reduced to 62%**



50% increase in track renewal



Broad Gauge line commissioned



The trials of freight trains will be completed on extended sections of Rewari-Madar section of the western corridor and the Khurja-Bhaupur section of eastern corridor by the end of the current financial year (2018-19).

The Dedicated Freight Corridors will be fully commissioned in phases by March 2020. Part sections of Western and Eastern DFCs viz 190 km Ateli-Phulera section of WDFC were opened on August 15, 2018 and 194 km New Khurja-New Bhadan section of EDFC were opened on November 23, 2018.

The commissioning of the two projects, spanning over 3376 route kms, will not only help the railways regain its market share of freight transport but guarantee, at the same time, an efficient, reliable, safe and cheaper system of goods movement for the country. When the two freight corridors operate, the railways' freight operations will see a fundamental change brought about by reduction in unit cost of transportation, smaller organization and management cost, with higher efficiency and lower energy consumption.

To overcome the problem of congestion and over-saturation of routes, doubling of tracks and laying

of additional lines has been going on. In the last four years, the railways made significant achievements and 2555 km of New Lines, 3396 km of Gauge Conversion and 3577 km of Doubling were commissioned. During 2017-18, 1862 km was commissioned including 409 km of New Lines, 454 km of Gauge Conversion and 999 km of Doubling.

As much as 14,480 km of track doubling, and third and fourth line works were included in the recent budgets. To expedite these capacity enhancement projects, funds have been arranged through institutional financing. Also, based on physical progress of projects, last mile connectivity projects and projects for decongesting the existing routes, sufficient funds are being allotted to each project.

Speeding up Electrification

To reduce dependence on imported diesel fuel and carbon emission, Indian Railways have

Infrastructure for New India

100% Electrification of Broad Gauge Routes of Indian Railways



₹ 12,134.50 Cr allocated to cover 13,675 route kilometres



Railways to save fuel bill up to ₹ 13,510 Cr per annum



To reduce fossil fuel consumption by 2.83 billion litre/annum



Generate direct employment of about 20.4 Cr mandays during construction

As on 1st January, 2019

embarked upon a major programme to speed up electrification of railway lines. Currently, around two thirds of freight and more than half of passenger traffic in Indian Railways moves on electric traction. Electric traction accounts for just 37 per cent of the total energy expenses of Indian Railways. Due to this advantage, through electrification, Indian Railways is likely to save Rs 13,510 crore per annum in fuel bills and the same will improve its finances. During the period of construction, the electrification projects will generate direct employment of crores of mandays.

The railways had 30,212 route kilometers (RKM) electrified on 1st April, 2018, and electrification work has been in progress on 33,658 route kilometers at a sanctioned cost of Rs 29,486 crore. Out of the balance route, a length of 13,675 route kilometers was sanctioned in September, 2018 at a cost of Rs.12,134.50 crore. During 2017-18, 4,087 RKM of broad gauge routes have been commissioned on electric traction against a target of 4,000 RKM. The previous year (2016-17), achievement on electrification was 1,646 RKM.

Electrification will reduce the use of imported fossil fuels thereby improving energy security to the nation. Consumption of high speed diesel oil will be reduced by about 2.83 billion litres per annum and a reduction in greenhouse gas emissions. This will also reduce environmental impact of Railways. Hundred per cent electrification will provide seamless train operation by eliminating detention of trains due to change in traction from diesel to electric and vice versa.

It will help Railways in enhancing line capacity due to higher speed and higher haulage capacity of electric locomotives. There will be improved signalling systems, which will lead to enhanced safety in train operations.

To achieve the ambitious target electrification of balance routes,

Infrastructure for New India

Mumbai-Ahmedabad High Speed Rail: First Ever Bullet Train in India

High Speed of the train will **reduce travel time** from approx. 8 hrs to 2 hrs

Generate employment for about **20,000 workers** during the construction phase

As on 1st January 2019

strategic policy decisions have been taken, like base of executing agencies have been broadened and projects covering 1735 RKM have already been entrusted to PSUs i.e. IRCON, RITES and PGCIL.

Ensuring Safety

To ensure connectivity with safety, the railways created the Rashtriya Rail Sanraksha Kosh (RRSK), a dedicated fund for safety projects during 2017-18



To ensure connectivity with safety, the railways created the Rashtriya Rail Sanraksha Kosh (RRSK), a dedicated fund for safety projects during 2017-18, with a corpus of Rs1 lakh crores over a period of five years, specially for clearing the backlog of critical safety related works.

Infrastructure for New India

**More Freight,
More Strength
to India's
Economy**





**HIGHEST EVER
FREIGHT LOADING IN INDIAN
RAILWAYS DURING 2017-18**

1,162 MT

As on 31 January 2019



It had been decided to completely stop the manufacture of ICF Coaches from 1st April, 2018 and shift to safer Linke Hofmann Busch (LHB) design coaches having anti-climbing features.

The railways signaling system is being completely modernized and included in the works programme of 2018-19 for the renewal programme on the complete 60,000 Route Kilometers (RKMs) of the Broad Gauge (BG) network of Indian Railways

Responding to the problem of accidents at unmanned level crossings, the Government has planned to remove or man all unmanned level crossings (UMLCs) on Broad Gauge (BG). As on 1st April, 2018, there were 5792 unmanned level crossings out of which 3479 were on Broad Gauge, 1135 on Meter Gauge and 1178 on Narrow Gauge.

Offering Better Services

To make the railways smart, for punctuality, instead of the station master recording the time, data loggers have been put at interchange points which would be computer generated.

18, with a corpus of Rs1 lakh crores over a period of five years, specially for clearing the backlog of critical safety related works. This includes track renewals and safety, strengthening of bridges, elimination of unmanned level crossings, upgradation of maintenance facilities, signaling improvement and complete switchover to shock-resistant LHB coaches with greater safety features, along with retro fitment of ICF coaches.

The total expenditure planned on safety activities including Rashtriya Rail Sanraksha Kosh (RRSK) was Rs. 68,725 cr in RE 2017-18 and Rs. 73,065 cr in BE 2018-19. The RRSK will comprise Rs. 5,000 cr from Capital (Budgetary Support), Rs. 10,000 cr from Railway Safety Fund received as Railways' share from Central Road fund and Rs. 5,000 cr from Railways' revenue. Apart from elimination of Unmanned Level Crossings on all busy routes and shift to production of safer LHB coaches, there is focus on track renewal with the highest outlay ever.

Safety has been accorded priority and consequential train accidents reduced to 62 per cent from 118 in

2013-14 to 73 in 2017-18. Addressing the issue of unsafe crossings on a war footing, 5,479 Unmanned Level Crossings have been eliminated in the last four years. Safety posts running into over a lakh are also being filled-up.

Infrastructure for New India

**Redefining
Safety Measures
in Railways**





**BEST EVER SAFETY
RECORD IN 2017-18**

Less than 100 accidents recorded in a year.

118

2013-14

→

73

2017-18



5,469 Unmanned Level Crossings eliminated. Average pace of elimination is 20% more than that of 2009-14 (April 2018)



All the 3479 Unmanned Level Crossings at Broad Gauge routes has eliminated, two years ahead of the target

As on 31 January 2019

The step has already improved punctuality to 73-74 per cent.

Indian Railways is working on putting a GPS device on every locomotive so that every train can be tracked on mobile phones knowing exactly where they are. Railways is reviewing to engage itself with artificial intelligence. The Railways believe that there is a lot which can be done with data being put to use with predictive maintenance, better monitoring and utilization of assets and better passenger service. Indian Railways has also planned to make 6,000 railway stations Wi-Fi enabled.

Railways is improving passenger services including a complete makeover of stations by installing modern facilities including escalators, lifts, free wifi etc. while instilling local art and culture in the design. Sixty-eight stations are slated for improvement by March 2019. Government has improved trains and coaches including launching the Tejas, Antyodaya and Humsafar trains. 'Make in India' has been given a boost by indigenous manufacturing of Semi High Speed (160 Kmph) self propelled Train 18. Work has started on Mumbai-Ahmedabad Bullet train project on Japanese model.

Catering to passengers' travel and comfort needs, 407 new train services have been launched in the last four years with 1.37 lakh services to meet festival demand. Catering has also been a focus area with compulsory printing of MRP on all food items started on more than 300 trains, and use of artificial intelligence to monitor food production in base kitchens for improving quality and hygiene. The railways will go for LHB coaches in a big way as they are fit to run at speeds from 130 kmph to 160 kmph.

To make rail transportation attractive to its customers, various initiatives were taken in 2017-18 which includes tariff rationalisation, classification of new commodities, expansion of freight basket through containerisation, new delivery models like RO-RO services, Long Term Tariff Contract policy with key customers, Station to Station rate, Double Stack Dwarf Container (DSDC), customer friendly rationalization of weightment policy, Electronic Registration for Demand of Wagons (e-RD) etc.

Decision has been taken to transport empty containers and empty flat wagons for private container rakes at a discount of 25 per cent. The move is likely to give a thrust to movement of empty containers by rail towards ports to return as loaded, thus profiting Indian Railway with higher container share. □

(E-mail: deepakrazdan50@gmail.com)

More than 664 Kms of Metro Rail Projects in 15 Cities

The Prime Minister unveiled several metro projects besides other important projects related to housing during his visit to Maharashtra in December 2018. The Prime Minister laid the Foundation Stone of two important metro corridors - the Thane-Bhiwandi-Kalyan Metro; and the Dahisar-Mira-Bhayander Metro. The two corridors, once completed, will greatly facilitate public transport in the area. In Pune, the Prime Minister laid the Foundation Stone of Pune Metro Phase-3.

Shri Hardeep S Puri, Minister of State (I/C) for Housing and Urban Affairs stated that more than 664 kms of Metro Rail projects in 15 cities are under various stages of implementation, while more than 515 kms of Metro Line are already operational in India. Interacting with the Members of the Consultative Committee attached to the Ministry of Housing and Urban Affairs on October 29, 2018, the Minister informed them about various initiatives taken by his Ministry on Urban Transport in the country in the recent past. The Minister said, in order to create an ecosystem for metro rail, the Ministry of Housing and Urban Affairs has notified the Metro Rail Policy, 2017. "The policy bridges the gap for ascertaining and enhancing the feasibility of metro rail projects from economic, social and environmental perspective. This aims to focus on systematic planning and implementation of metro rail systems and act as a guide to State Governments for preparing comprehensive proposals for metro rail projects", he emphasised.



Constitution (103rd) Amendment Act, 2019

The President has given his assent to the Constitution (One Hundred and Twenty Fourth Amendment) Bill, 2019. The Act providing 10 per cent reservation in government jobs and educational institutions to Economically Weaker Sections (EWS) among upper castes has come into effect. The Government notified 14th January as the date on which the provisions of Constitution (103rd) Amendment Act, 2019 will be effective. The Act amends Articles 15 and 16 of the Constitution by adding a clause which allows States to make special provision for the advancement of economically weaker sections in the general category.

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YE-953/2018

Connected North East: Building Pan India Ties

Namita Tewari

The vastly unexplored slice of paradise - North East, connected to the rest of the country through Siliguri Corridor, popularly known as the chicken neck area in North West Bengal flanked by Nepal and Bangladesh, is on a resurgent path as far as road connectivity is concerned.

The North Eastern Region (NER) consists of eight states, namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The region accounts for 3.78 per cent of India's population and covers 7.98 per cent of its total geographical area. Its contribution to national GDP is 2.5 per cent.

The region is strategically important for India both for its geographical location and its resources and shares about 5,437 km of international boundaries with Bangladesh, Bhutan, China, Myanmar and Nepal.

The Prime Minister has stressed that North East's links with Southeast Asia will accelerate its progress. "In turn, a connected Northeast will be a bridge to ASEAN-India ties of our dreams," he has said

Recognising the need to augment infrastructure in the region, the government of India has sanctioned about Rs 1,90,000 crore worth of projects for construction of road projects for over 12,000 kms.

Accelerating Infrastructure Development

The projects being executed by National Highways & Infrastructure Development Corporation (NHIDCL) are to the tune of Rs 1, 66,026 crore, covering 10,892 km of roads in all the eight NE states.

To accelerate the sluggish pace of implementation of infrastructure

projects in hilly and tough terrains like NER, NHIDCL was incorporated on July 18, 2014 as a public sector undertaking under the Ministry of Road Transport and Highways and has bolstered highways construction as a specialised agency.

Projects costing Rs 17,257 crore have been allotted to the respective State Public Work Departments (PWDs).

Further, projects costing Rs 7,000 crore are entrusted to the National Highways Authority of India (NHAI).

Infrastructure for New India

Connecting North-East, Connecting India

North East is fully integrated with rest of India with the entire network converted to Broad Gauge

Meghalaya, Tripura and Mizoram on India's rail map for the first time.

As on 31st January, 2019

The author is Assistant Editor, Press Trust of India, New Delhi.

Special Accelerated Road Development Programme for the North-Eastern region (SARDP-NE) - is another initiative of the government to fast-track infrastructure projects in the region.

Fast-Tracking Highway Projects

The government think tank NITI Aayog, advocating to develop the region by 2022-23 for enhanced trade, particularly for the export of products made in the NE, to the Association of Southeast Asian Nations (ASEAN) region and other neighbouring countries (Bangladesh, Bhutan and Nepal), has stressed the need to fast-track highway projects.

Identifying inadequate road connectivity as one of the major factors for untapped abundant resources and lack of tourism, the Aayog has stressed the need to “monitor closely on-going transport projects with focus on projects that boost inter-regional connectivity and help transform the region into a major trade hub with South East Asia.”

It said the projects like Kaladan Multi-Modal Transit Transport Project, the India-Myanmar-Thailand Trilateral Highway, the 5-km road stretch between the border city of Zokhawthar in Mizoram and Rih in Myanmar need to be expedited besides improving “about 4,099 km in the North-East”.

The region, no doubt has witnessed renewed government attention in recent years with the completion of as many as 43 National Highways projects in the ongoing fiscal 2018-19 by November 30, 2018.

As far as the land acquisition for the National Highways Projects is concerned in the region, barring Assam, which charges 10 per cent of the compensation amount of land acquisition, the rest levy nil charges for it.

Of the 1,15,435 km length of National Highways in the country, Arunachal Pradesh has 2,537 km, Assam 3,845 km, Manipur 1,746 km, Meghalaya 1,204 km, Mizoram 1,422



km, Nagaland 1,547 km, Sikkim 463 km and Tripura 854 km share.

New Roadway Projects

In December 2018, the Road Transport and Highways Minister laid foundation stones and inaugurated several big-ticket highway projects totalling Rs 9,533 crore in Arunachal Pradesh saying these will transform the picture of North East states by way of development, job creation, tourism and employment for the youth.

Prior to this, the Minister had inaugurated upgraded Jowai-Ratacherra (Meghalaya Assam border) section of the National Highway- 06 at Shillong and dedicated the 102 km road project to the nation, constructed at a cost of Rs 683 crore.

The 102 km long stretch of road is very important for the development of industries in Meghalaya as it passes through cement and coal belts of the State and reduces travel time from 4 hours to 2.5 hours. This facilitates trucks and heavy vehicles coming from Brahmaputra Valley to move smoothly in a record time frame to Silchar in Barak Valley, within Assam, thus providing connectivity to states like Manipur, Mizoram, Tripura and southern Assam.

Another shot in the arm will be Dhubri-Phulbari Bridge over Brahmaputra. As it is a 20 km long bridge project with navigational span of 12.625 km, a detailed investigation

of soil and hydrology of the area was required to be carried out before finalisation.

The project is being funded by Japan International Cooperation Agency (JICA) and loan agreement has been signed in October, 2018. Construction of the bridge is scheduled to be taken up during the financial year 2019-2020.

The Prime Minister has said that next generation transport infrastructure has grown in the last four years and the network was expanding to the north eastern parts of the country.

Indo Myanmar Connectivity

Recently a meeting between India and Myanmar reviewed the progress of the ongoing India-Myanmar Transport Connectivity projects.

The two sides discussed the status of the project for upgradation of the Kalewa-Yagyi stretch of the India-Myanmar-Thailand (IMT) Trilateral Highway and starting of Imphal-Mandalay bus service.

The upgradation of the Kalewa-Yagyi stretch of IMT is being executed by National Highways Authority of India. India and Myanmar are keen on bus service after operationalising the Land Border Crossing Agreement, which allows nationals from the two countries holding valid passport and visa to cross over without requiring special permission. Now both countries

have to select bus operators to run the service.

Bharatmala Project

The Government's focus on the North East could also be understood from the fact that it plans 28 Ring Roads under Bharatmala project in the region identifying 125 Choke Points and 66 Congestion Points to reduce congestion.

The major cities in the North Eastern states where such interventions have been planned are Guwahati, Imphal, Silchar, Shillong, Dibrugarh, Dimapur and Aizawl.

The Government, in October 2017, had approved a mega plan to build 83,677 km of highways in the country over the next five years at a cost of about Rs 6.92 lakh crore which includes the ambitious Bharatmala project, the biggest ever after National Highways Development Programme.

Bharatmala project, an umbrella programme for roads under which 34,800 km of highways will be constructed at a cost of Rs 5.35 lakh crore in the first phase includes a large number of projects for the North East.

These comprise 1,191 economic corridors, international connectivity projects, border roads feeder roads for Assam, 901 for Manipur, 493 for Meghalaya, 1,067 for Mizoram, 406 for Nagaland, 165 projects for Sikkim and 525 for Tripura.



Under Bharatmala Pariyojana, road stretches aggregating to about 5,301 km in NER have been approved for improvement. Out of this, 3,246 km road length has been approved for development of an Economic Corridor in the North East.

Besides, the Central Government has undertaken a decision to complete several highway projects in the State by March 2019 reviewing about 300 ongoing projects pan India.

In addition to other programmes, the Centre has approved a scheme named North East Special Infrastructure Development Scheme (NESIDS), a 100 per cent Central Sector Scheme to be implemented till March 2020. A sum of Rs 1,600 crore has been allocated for funding physical infrastructure.

The commitment to road connectivity to North East was visible with inauguration of India's longest rail-cum-road bridge in Assam by the Prime Minister in December 2018.

India's Longest Bridge

The 4.94-km-long double-decker bridge over the Brahmaputra river at Bogibeel near Dibrugarh in Assam, which begins at Dibrugarh and ends at Dhemaji districts of Assam, will remove communication bottlenecks to several districts of Arunachal Pradesh.

The bridge is part of the infrastructure projects planned by the government to improve logistics along the border in Arunachal Pradesh. The road distance from Dibrugarh to Itanagar will be reduced by 150 km and the railway travel distance between these two points will shorten by 705 km due to the bridge.

In May 2017, the Prime Minister had inaugurated the country's longest bridge over the Lohit river in Assam - the 9.15 km-long bridge, named after Dadasaheb Phalke awardee and legendary lyricist-singer Bhupen Hazarika who hailed from Sadiya.

The bridge, built at a cost of Rs 2,056 crore, is 3.55 km longer than the Bandra-Worli Sea link. The length of the bridge, including viaducts, is 9.15 km with 7.3 km approach road from the Dhola side and 12.5 km from side.

The Prime Minister has stressed that North East's links with Southeast Asia will accelerate its progress. "In turn, a connected Northeast will be a bridge to ASEAN-India ties of our dreams," he has said.

Braving challenges the Government is working hard to improve connectivity in the region and North East is set for giant strides. □

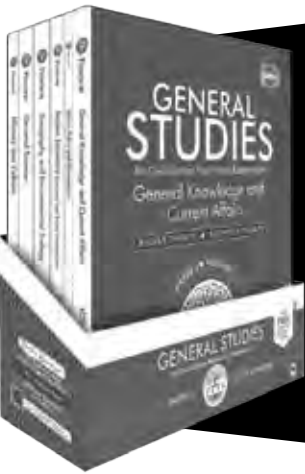
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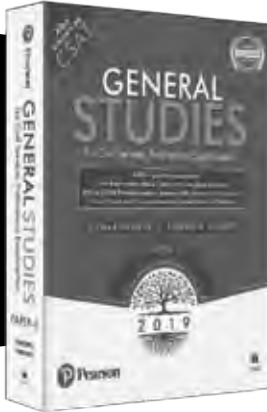
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YE-951/2/2018

Affordable Housing: Taking Centre Stage

Ranjeet Mehta

Infrastucture is a key driver for the Indian economy. The quality of a nation's infrastructure is a critical index of its economic vitality.

Reliable transportation, clean water, and safe deposit of wastes are basic elements of a civilized society and a productive economy. An estimated US\$1 trillion is being spent on infrastructure over the five years to 2017 and there is increased investment in industrial projects by the Government. The country of 1.3 billion people is set to undergo a boost in the construction sector. Infrastructure accounts for 49 percent, housing and real estate 42 percent and industrial projects 9 percent. The Indian real estate and construction industry is an integral part of the economy and is responsible for a considerable part of its development investment. The industry plays an important role in the development of the country's infrastructure base

and is one of the largest generators of economic activity. The construction sector has strong linkages with various industries such as cement, steel, chemicals, paints, tiles, fixtures and fittings, etc.

India's economy is big and getting bigger. It has been estimated that India will become the world's third largest economy by 2050. The importance of infrastructure for sustained economic development is well recognized. Physical infrastructure covering transportation, power and communication through its backward and forward linkages facilitates growth, while social infrastructure including water supply, sanitation, sewage disposal, education and health, which are in the nature of primary services have a direct impact on the quality of life. The performance of infrastructure is largely a reflection of the performance of the economy.

Liberalization of government regulations and a deliberate strategy

Affordable housing has taken a centre stage in the National Agenda of the present Government. The Government's commitment to have housing for all by 2022 is the vision which presents dramatically different opportunities and requirements for the stakeholders and realizing this dream can be a step towards building a brighter India.

on the part of the Indian Government to promote infrastructure spells huge opportunity for all. Nearly all of the infrastructure sectors present excellent opportunities, with roads and highways, ports and airports, railways, housing and power standing out as particular bright spots, with staggering sums of investment planned. Faster clearances and dispute resolution, last mile funding and easier exits for companies are among steps taken by the present Government to help the sector since it came to power in May 2014. With the Government permitting 100 per cent FDI in the road sector, several foreign companies have formed partnerships with Indian players to capitalize on the sector's growth. The Indian infrastructure sector offers massive investment opportunities to the tune of about Rs.28.2 trillion in coming years.

Population Growth & Housing

Housing has been a concern of individuals, families, groups and government since the dawn of urban



The author is Principal Director at PHD Chamber of Commerce and Industry (PHDCCI), New Delhi.

civilization. The phenomenon of urbanization in today's fast-paced world is inevitable, especially in emerging economies. As we have witnessed over the last few decades, due to massive urbanization, increasing income levels and changing demographics, there has been increasing pressure on transportation, housing, land and other urban services to accommodate the future population. Whilst the overall population growth has declined over the last decade, urban population growth continues to be almost twice the annual national population growth rate. Urban population in India may reach 600 million by 2031 (over 50 per cent of the total population), from 377 million in 2011 and the total number of cities is expected to rise to 87 (from 50 in 2011). Further, the urban share of the GDP is projected to increase to 75 per cent in 2031 from an estimated 62-63 per cent in 2009-2010. (The High Powered Expert Committee (HPEC), 2011) Consequently, there is a dire need to improve the quality of life in our cities and to address the current and anticipated future shortage of housing along with other infrastructure deficit prevalent in our urban centers.

Affordable housing has taken a centre stage in the National Agenda of the present Government. The Government's commitment to have housing for all by 2022 is the vision which presents dramatically different opportunities and requirements for the stakeholders and realizing this

dream can be a step towards building a brighter India. This transformational scheme of "Housing for All by 2022" was launched by Government of India on 17th June 2015 under Pradhan Mantri Awaas Yojana (PMAY) with an aim to provide affordable housing to urban poor.

Pradhan Mantri Awaas Yojana (PMAY)- Housing for All 2022

While efforts to provide low-cost housing have been made for many years, the PMAY launched in 2015 provides a fresh impetus. The PMAY-Urbane (PMAY-U) subsumes all the previous urban housing schemes and aims at 'Housing for All' to be achieved by the year 2022. Housing shortage of 20 million is envisaged to be addressed through the PMAY-U.

The mission has four components:

A- In-situ slum redevelopment (ISSR):

This uses land as a resource. The scheme aims to provide houses to eligible slum dwellers by redeveloping the existing slums on public/ private land. A grant of INR 1 lac per house is provided by the Central Government to the planning and implementing authorities of the States/UTs under this scheme.

B-Affordable housing in partnership (AHP):

This aims to provide financial assistance to private developers

to boost private participation in affordable housing projects; central assistance is provided at the rate of INR 1.5 lac per EWS house in private projects where at least 35 per cent of the houses are constructed for the EWS category.

C-Credit-linked subsidy scheme (CLSS):

This scheme facilitates easy institutional credit to EWS, LIG and MIG households for the purchase of homes with interest subsidy credited upfront to the borrower's account routed through primary lending institutions (PLIs). This effectively reduces housing loans and equated monthly instalments (EMI).

D-Beneficiary-led construction or enhancement (BLC):

This scheme involves central assistance of INR 1.5 lakh per family for new construction or extension of existing houses for the EWS/ LIG.

Urban Housing Initiatives

The Government envisages building affordable pucca houses with water facility, sanitation and electricity supply round-the-clock. Under PMAY, it is proposed to build 2 crore houses for urban poor including Economically Weaker Sections and Low Income Groups in urban areas by the year 2022 through a financial assistance of ₹2 trillion (US\$31 billion) from the central government. This scheme is converged with other



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As on 31st January, 2019

- Real estate developers to get tax relief on unsold stock as liability to pay capital gains will arise only in the year a project is completed
- Instead of Built up area of 30 and 60 sq meters, the carpet area of 30 and 60 sq meters will be applicable for affordable housing
- Holding period for capital gains tax for immovable property reduced from 3 years to 2 years
- Tax break of 1 year post receipt of the completion certificate, for the unsold stock
- Indra Awaas Yojana will be extended to 600 districts
- Indexation for capital gains shifted from 01-04-81 to 01-04-2001

Housing Finance

Apart from providing infrastructure status to affordable housing, there is another push to low cost housing through Pradhan Mantri Awas Yojana (PMAY). Under the scheme, government has announced that an interest rate of only 4 per cent would be charged on loans above Rs 9 lakh and 3 per cent on amount above Rs 12 lakh. The government has also extended the time of completion of such projects from 3 years to 5 years. Thus, more projects will now be eligible for profit-linked income

schemes to ensure houses have a toilet, Saubhagya Yojana electricity connection, Ujjwala Yojana LPG gas connection, access to drinking water and Jan Dhan banking facilities, etc.

The scheme is aimed for urban areas with following components/options to States/Union Territories and cities:-

- Slum rehabilitation of Slum Dwellers with participation of private developers using land as a resource;
- Promotion of affordable housing for weaker sections through credit linked subsidy;
- Affordable housing in partnership with Public and Private sectors and
- Subsidy for beneficiary-led individual house construction or enhancement.

Besides this, Government of India has been taking several initiatives through the budget to provide housing for all.

The Union Budget 2017-18 announced a number of measures to boost affordable housing:-

- Affordable Housing has been given Infrastructure status
- One crore rural houses will be created by 2019
- National Housing Bank to refinance Rs 20,000 crore loans
- Pradhan Mantri Awas Yojana to get Rs 23,000 crore



tax exemptions. So far, we have seen limited participation from private developers in the affordable housing segment despite high demand. Profit-linked exemption along with infrastructure status for affordable housing will push developers to undertake more affordable housing projects, thus increasing private player's participation in the sector.

The criteria for low cost / affordable housing has been changed from built-up area of 30 / 60 sqmtrs to carpet area of 30/60 sqmtrs, thus making the low cost – affordable housing segment more lucrative for the builders and also making the segment more attractive for the buyers. With the change in criteria from built-up area to carpet area, the purchasers get more spacious homes and the builder is able to market the property to a larger segment of buyers. The 30 sqm limit will apply only in case of municipal limits of 4 metropolitan cities while for the rest of the country including the peripheral areas of metros, limit of 60 sqm will apply.

India today has a huge demographic advantage in terms of the young population and it is of paramount importance that appropriate steps are taken to ensure that job creation keeps pace. Housing is a labour-intensive industry, with a long backward linkages tail, generating a large multiplier of economic activity in sectors while significantly aiding in job creation. This also plays very favourably with aspirations of India's youth, and will help in the realization of the demographic dividend of this segment.

Affordable housing finance is estimated to be a Rs. 6 lakh crore business opportunity by 2022, by when the Government seeks to achieve housing for all citizens. Due to the big push from PMAY to create housing for all, a new group of Affordable Housing Finance Companies has emerged, which is now serving low-income, urban informal customers using an innovation pioneered in India—field-based credit assessment. These companies have grown from a combined loan book of close to ₹1,000 crores (\$200 million) in March 2013 to over ₹27,000 crores, in December 2017, at an average loan ticket size of ₹9.3 lakhs and have facilitated the ownership of more than 230,000 affordable homes. Access to home ownership for low-income households has freed up existing rental stock in urban areas and created employment opportunities for informal and unskilled workers. Statistics show a sharp increase in loan disbursements and launching of new projects in the segment in 2016-17. The Credit linked subsidy scheme has proved to be quite effective in improving the affordability factor among the Economically Weaker Sections.

Finally, with all these initiatives of Government of India to give shelter to all by 2022, we hope there will be tremendous boost to GDP as the housing sector growth is directly related to around 265 other ancillary industries. □

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Swachh Survekshan 2019
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Narendra Modi, Prime Minister



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YE-1016/2018

The Sanitation Revolution - Creating Infrastructure

Creating a sanitation revolution has been high on the agenda of the government. The Swachh Bharat Mission (SBM) was launched on 2nd October, 2014 to accelerate the efforts to achieve universal sanitation coverage in India and promote access to safe sanitation in India. Over 9 crore toilets have been built to prevent open defecation and rural sanitation coverage has increased significantly.

SBM (G) at a glance	
8.95 IHHLs built (in crores) since 2 nd Oct 2014	58.18 per cent increase in sanitation coverage since 2 nd Oct 2014
534 No. of ODF Districts	4470 ODF villages in Namami Gange
25 ODF States/UTs	5,33,911 No. of ODF Villages

Swachh Iconic Places (SIP)

Under the inspiration of the Prime Minister, MDWS has undertaken a multi-stakeholder initiative focusing on cleanliness in 100 locations across the country, which are “iconic” due to their heritage, religious and/or cultural significance. So far, in the first

three phases, 30 iconic places have been identified.

NamamiGange

The Namami Gange Programme is an initiative of Ministry of Water Resources (MOWR). As an inter-ministerial initiative, making villages on the bank of river Ganga

ODF and interventions dealing with solid and liquid waste management (SLWM) are being implemented by MDWS.

All 4470 villages located across 52 districts of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal have been declared ODF with active help of state governments. Now the Ministry has taken up 25 villages on the bank of River Ganga to transform them as Ganga Grams in coordination with NMCG. MDWS has sanctioned Rs. 67 Crore to five Ganga States to take up tree plantation and related preparatory activities on the revenue land in Ganga Bank villages.

GOBARdhan scheme

MDWS launched the Galvanising Organic Bio-Agro Resource dhan or “GOBARdhan” scheme on 30th April 2018, at Karnal, Haryana. The scheme is aimed at keeping villages clean while increasing the income of farmers and cattle owners by promoting local entrepreneurs to convert cattle dung, and other organic resources, to biogas and organic manure.

Swajal

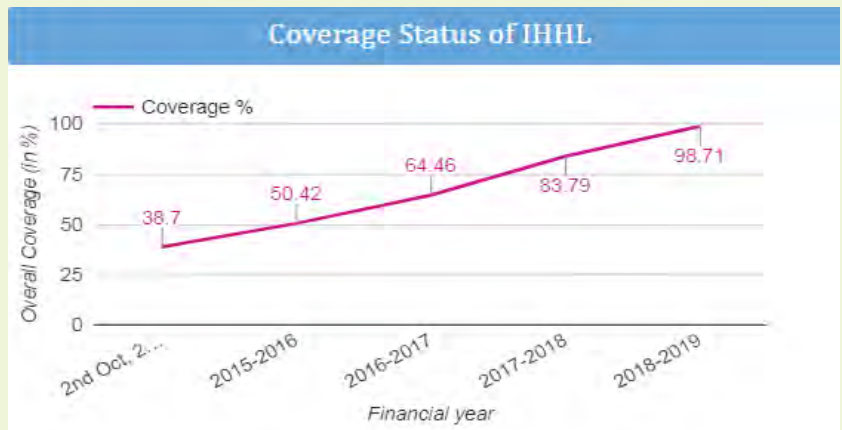
Ministry of Drinking Water and Sanitation launched *Swajal*,

Swachh Bharat Mission- Some Recent Milestones

a community demand driven, decentralized, single village, preferably solar powered, mini PWS programme for the 117 aspirational districts identified by NITI Aayog. The Hon'ble Vice President laid the foundation for the scheme at Jharkhand on 27.9.2018 and the first scheme was inaugurated at Hazaribagh, Jharkhand on World Toilet Day, 19th November, 2018.

SBM-G Achievements in 4 years:

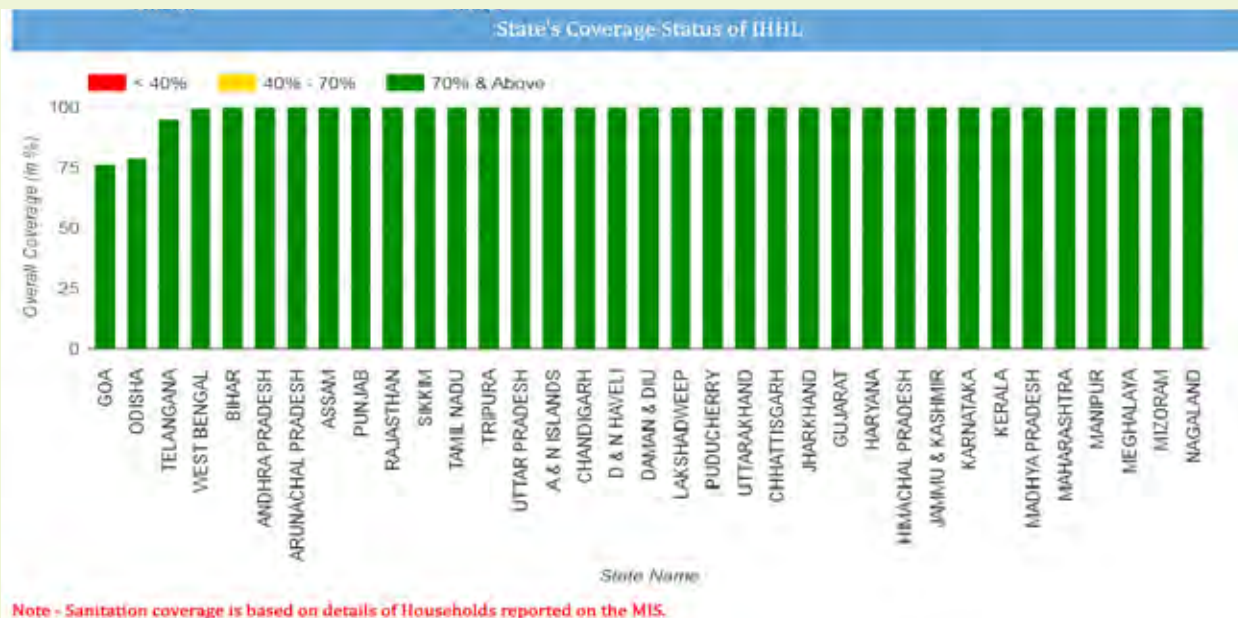
- Sanitation coverage increased from 39% to 93%
- 85 million toilets have been built by households
- 450,000 of 600,000 villages are now ODF
- Out of 699 districts 460 are ODF
- 450,000 grassroots motivators, swachhagrahis are stationed in villages



Source: SBM Website

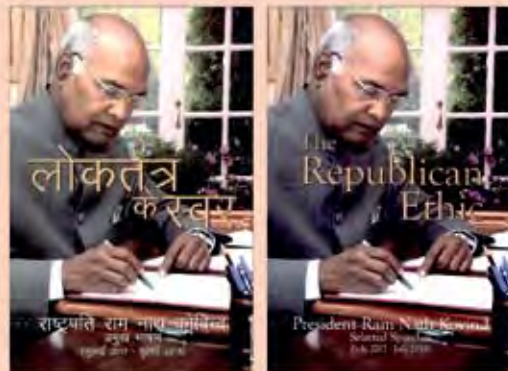


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There must be an integration of skills and education in our schools and colleges, providing for multi-point entry and exit from the formal education system to the vocational education system and job markets

Investing in Children: Investing in the Future

S S Mantha

Buildings, classrooms, laboratories, and equipment are education infrastructure which are crucial elements of learning environments in schools, colleges and universities. There is strong evidence that high-quality infrastructure facilitates better instruction, improves student outcomes, and reduces dropout rates, among other benefits. Though some private schools in the country are doing exceedingly well, and similarly CBSE schools too are doing well, the same cannot be said of the schools run by the State Governments.

In a country where education was not even accessible to all, an Act of Right to Free and Compulsory Education to all children in the age group of six to fourteen years was passed in 2009, a very progressive step indeed.

In a report released by the NCERT

in December 2017, that included a 700-district study, found that students are learning less as they move to higher classes. On an average, a class VIII student could barely answer 40 per cent of the questions in maths, science and social studies. The national average score for language was a little better at about 56 per cent.

Integrating schemes like Sarva Shiksha Abhiyan, Rashtriya Madhyamik Shiksha Abhiyan and teacher education must be done only if a gap analysis shows unfinished or undelivered agenda. Of the total education outlay, school education gets a lion share of Rs 50,000 crore and the rest Rs 35,010 crore has gone to the higher education sector. With institutions growing in number and size, this provision may have to be enhanced soon.

Integrating Skills Education

To counter roadblocks that could hamper progress, adoption of new

technology is the only solution. Skills and skill education, touted as the next big thing in the country that could reap demographic dividends, must be institutionalised in our schools and colleges.

There must be an integration of skills and education in our schools and colleges, providing for multi-point entry and exit from the formal education system to the vocational education system and job markets. Further, setting up a National Skills University to integrate all skills-based initiatives of the Government to optimise return on investments must be a stated goal.

Black board to Digital board is another concept that stands out. Digital technology can seamlessly transform even a small paddy field into a classroom, in less than few minutes. A digital Gurukul setup today could work wonders. Children in these new setups can easily learn while also

The author is Former Chairman, AICTE.



supporting their families and thus help create a perfect work-life balance at an early age. In order to create this wider channel of change, creating Wi-Fi belts in villages, using television, radio and computers as teaching aids while also assigning a bunch of tech enthusiasts to move around and set these up could definitely be a step towards success. The flipside however is, teaching should never be left out from the purview of a teacher, as character building and personality development are not digital outcomes.

The Central Government has taken several proactive steps to redeem school education. Under SSA, States and UTs have reported construction of 2.94 lakh primary and upper primary school buildings, 17.98 lakh additional classrooms and 9.95 lakh toilets and provision of 2.35 lakh drinking water facilities. Under RMSA till 31.12.2017, 12682 new secondary schools, 50,713 additional classrooms, 70,244 toilets and 11,854 drinking water facilities, have been sanctioned out of which 8211 new schools, 35,794 additional classrooms, 49,030 toilets have been constructed and 9,860 drinking water facilities have been provided by the States and UTs.

Further, the States/UTs are supported on several interventions to improve quality of education including regular in-service teachers' training, induction training for newly recruited teachers, recruitment of additional teachers for improving pupil teacher ratio, academic support for teachers through block and cluster resource centres. Section 23(2) of the RTE Act, 2009 has been amended to ensure that all untrained in-service teachers working in Government, Government aided, and Private un-aided schools should acquire minimum qualification as laid down by an academic authority,

authorized by the Central Government, by 31st March, 2019. It further includes reference on class-wise, subject-wise Learning Outcomes.

The Learning Outcomes for each class in Languages (Hindi, English and Urdu), Mathematics, Environmental Studies, Science and Social Science up to the elementary stage have, accordingly, been finalized and shared with all States and UTs. These would serve as a guideline for State and UTs to ensure that all children acquire appropriate learning levels. A National Achievement Survey (NAS) based on



learning outcomes has been conducted on 13th November, 2017 for class III, V and VIII with a sample frame up to district level to enable States/UTs to identify gaps in learning outcomes at district level and design strategies to address those gaps. District reports are available along with learning gaps for each district. Similarly, National Achievement Survey for Class X students has been conducted on 5th February, 2018.

School improvement and teachers' development is a multifaceted approach. Therefore, school reforms and initiatives need to be carefully planned and executed by involving all stakeholders. □

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National Youth Parliament Festival 2019 Launched

The National Youth Parliament Festival 2019 was launched on 12th January 2019 by the Minister of State (I/C) for Youth Affairs and Sports Col Rajyavardhan Rathore (Retd) thereby beginning the celebration of the National Youth Day 2019.

Honourable Prime Minister Shri Narendra Modi, in his Mann Ki Baat address on 31st December 2017, had shared his idea of organizing Youth Parliaments for young people in every district of the country. It is to provide a chance to the youth to brainstorm about new India and to find ways and chalk out plans to realize our resolves before 2022. He reiterated his idea to capture the voice of the youth in his address to the youth during the 22nd National Youth Festival on 12th January 2018.

Ministry of Youth Affairs and Sports proposes to take the Youth Festival to each district of the country and celebrate it as the "National Youth Parliament Festival". National Youth Parliament Festival 2019 is organised on the theme of "Be The Voice of New India" and "Find solutions and contribute to policy". Youth in the age bracket of 18-25 years are invited to participate in the District Youth Parliaments. The National Youth Parliament Festival will also encourage the youth to engage with public issues, understand the common man's point of view, form their opinion and express these in an articulate manner. It is expected that more than 50 thousand youth will participate through Youth Parliaments at all levels and the narrative will be strengthened and made more vibrant by their voices and ideas and suggestions.

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YE-746/11/2018

SPORTS INFRASTRUCTURE

FIRST CENTRAL UNIVERSITY IN INDIA, FOCUSING SOLELY ON SPORTS EDUCATION

Nelson Mandela, the Nobel laureate for peace and former president of South Africa, said in one of his speeches, “Sport has the power to change the world. It has the power to inspire. It has the power to unite people in a way that little else does. It speaks to youth in a language they understand. Sport can create hope where once there was only despair...” But to inspire the next generation, we need the right professionals to lead and coach them in sports.

It is with this as one of the missions that the National Sports University, Manipur, was set up in 2018. The University is presently functional from its temporary campus at the Khuman Lampak Sports Complex of Imphal. The Prime Minister laid the foundation stone for the University’s proposed 325 acre campus at Imphal West, on March 16, 2018.

University -with four schools:

- School of Sports Science and Sports Medicine
- School of Sports Management and Technology
- School of Sports Education
- School of Interdisciplinary Studies

The National Sports University will have the flexibility to open new schools/departments in consonance with the advances and developments in sports science, sports medicine, and allied areas. The University, once developed, will be the first one of its kind to promote sports

education in the areas of sports sciences, sports technology, sports management, and sports coaching. It will also function as the national training centre for selected sports disciplines by adopting the best international practices by signing Memoranda of Understanding (MoU) with international Universities. The Ministry of Youth Affairs and Sports has already signed MoUs with the Universities of Canberra and Victoria in April 2017.

National Sports University aims to become the pioneering university in country to prepare world-class athletes, sports scientists, sports managers, sports architects, sports journalists, physical educationists with the help of path-breaking research & diverse programs that inspire leadership, teamwork, and resilience among its students, thereby profoundly impacting our society in meaningful ways.

- To produce top athletes, sports scientists, competent physical educationists by offering programs that cultivate learning through competition, recreation, physical activity in addition to classroom learning.
- To mentor students by inculcating values & leadership skills in them by providing diverse opportunities that develop character to succeed in all facets of their lives.
- To study human potential holistically by conducting pioneering research in the field of sports science & use its findings to boost public health & enhance international performance of Indian athletes.
- To develop the entire sports eco-system including sports management, sports journalism, sports architecture, sports equipment manufacturing, etc.
- To contribute towards promoting international peace with the power of sports by helping build a society & country healthy in mind and body.



Source- <http://www.nsu.ac.in/about-nsu>

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YE-802/9/2018

FIRST SWADESH DARSHAN PROJECT IN MEGHALAYA INAUGURATED

The Chief Minister of Meghalaya, Shri. Conrad K Sangma, inaugurated the project “**Development of North East Circuit: Umiam (Lake View) - U Lum Sohpetbneng- Mawdiangdiang - Orchid Lake Resort**” implemented under Swadesh Darshan Scheme of Ministry of Tourism, Government of India This is the first Swadesh Darshan project of Union Tourism Ministry in the state of Meghalaya.

The project was sanctioned by the Ministry of Tourism in July 2016 for Rs. 99.13 Crores. Under this project the Ministry has developed facilities like Traditional Healing Centre, Tribal Rejuvenation Centre, Tourist Information Centre, Multipurpose Hall, Log Huts, Cafeteria, Sound and Light show, Souvenir Shops, Water Sports Zone, Zip Line, Canopy Walk, Trekking Routes, Cycling Track, Last Mile Connectivity, Caravan Parking, Public Toilets, and Solid Waste Management.

Swadesh Darshan scheme is one of the flagship schemes of the Ministry of Tourism for development of thematic circuits in the country in a planned and prioritised manner. Under this scheme the Government is focussing on development of quality infrastructure in the country with the objective of providing better experience and facilities to the visitors on the one hand and on other hand fostering economic growth. The scheme was launched in 2014 -15 and as on date the Ministry has sanctioned 74 projects worth Rs. 5932.05 Crore to 30 States and UTs. 30 projects / major components of these projects are expected to be completed this year. 9 projects have been inaugurated as on date under the scheme.

CABINET APPROVES ‘THE CONSTITUTION (SCHEDULED TRIBES) ORDER (AMENDMENT) BILL, 2018’ FOR REVISION IN LIST OF SCHEDULED TRIBES OF ARUNACHAL PRADESH

The Union Cabinet chaired by Prime Minister has approved the introduction of a Bill namely the Constitution (Scheduled Tribes) Order (Amendment) Bill, 2018 in the Parliament for certain amendments in the Constitution (Scheduled Tribes) Order, 1950 so as to modify the list of Scheduled Tribes (STs) of Arunachal Pradesh.

After the Bill becomes an Act, members of the communities newly listed in the revised list of Scheduled Tribes of Arunachal Pradesh will also be able to derive benefits meant for STs under the existing schemes of the Government. Some of the major schemes of this kind include Post Matric Scholarship, National Overseas Scholarship, National Fellowship, Top Class Education, Concessional Loans from National Scheduled Tribes Finance and Development Corporation, Hostels for ST boys and girls etc. In addition to the above, they will also be entitled to benefits of reservation in services and admission to educational institutions as per Government policy.

CABINET APPROVES HIGH LEVEL COMMITTEE TO IMPLEMENT CLAUSE 6 OF ASSAM ACCORD; SEVERAL LONG STANDING DEMANDS OF BODOS ALSO APPROVED

The Union Cabinet chaired by Prime Minister approved the setting up of a High Level Committee for implementation of Clause 6 of the Assam Accord and measures envisaged in the Memorandum of Settlement, 2003 and other issues related to Bodo community.

The Committee shall examine the effectiveness of actions since 1985 to implement Clause 6 of the Assam Accord. The Committee will hold discussions with all stakeholders and assess the required quantum of reservation of seats in Assam Legislative Assembly and local bodies for Assamese people. The Committee will also assess the requirement of measures to be taken to protect Assamese and other indigenous languages of Assam, quantum of reservation in employment under Government of Assam and other measures to protect, preserve and promote cultural, social, linguistic identity and heritage of Assamese people.

The Cabinet approved the establishment of a Bodo Museum-cum-language and cultural study center, modernization of existing All India Radio Station and Doordarshan Kendra at Kokrajhar and naming a Superfast Train passing through BTAD as ARONAI Express. The State Government will also take necessary measures related to appropriate land policy and land laws, besides setting up of Institutions for Research and Documentation of Customs, Traditions and Languages of indigenous communities.



Creating Adequate Infrastructure in Health Care

Sanjeev Kumar

Health infrastructure is an important indicator for understanding the health care policy and welfare mechanism in a country.

It signifies the investment priority with regard to the creation of health care facilities. Infrastructure has been described as the basic support for the delivery of public health activities. India has systematically improved health conditions. Life expectancy has doubled from 32 years in 1947 to 66.8 years at present; Infant Mortality Rate (IMR) has fallen to 50 per thousand live births. Further, it is estimated that public funding accounts for only 22 per cent of the expenses on healthcare in India. Most of the remaining 78 per cent of private expenditure is out-of-pocket expense. The share of the richest 20 per cent of the population in total

public sector subsidies is nearly 31 per cent, almost three times the share of the poorest 20 per cent of the population.

Healthcare System and Structure

Healthcare has become one of India's largest sectors - both in terms of revenue and employment. Healthcare comprises hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment. The Indian healthcare sector is growing at a brisk pace due to its strengthening coverage, services and increasing expenditure by public as well private players.

Indian healthcare delivery system is categorised into two major components - public and private. The Government i.e. public healthcare system comprises

India is well poised to a better public healthcare infrastructure, facilities and services and hopefully with all the well intentioned initiatives we shall see health taking a top priority agenda in the coming years...

limited secondary and tertiary care institutions in key cities and focuses on providing basic healthcare facilities in the form of Primary Healthcare centres (PHCs) in rural areas. The private sector provides majority of secondary, tertiary and quaternary care institutions with a major concentration in metros, tier I and tier II cities. India's competitive advantage lies in its large pool of well-trained medical professionals. India is also cost competitive compared to its peers in Asia and Western countries.

The author is a senior practicing communication, research and media professional specializing in health sector.



The cost of surgery in India is about one-tenth of that in the US or Western Europe.

Medical education infrastructure in India has shown rapid growth during the last 20 years. The country has 476 medical colleges, 313 colleges for BDS courses and 249 colleges which conduct MDS courses. There has been a total admission of 52,646 in 476

Towards Universal Access to Health Care

Universal access to health care is a well-articulated goal for both global institutions and national governments. India's National Health Policy, 2017 envisions the goal of attaining highest possible level of health and well-being for all at all ages through a preventive and promotive health care orientation

Universal access to health care is a well-articulated goal for both global institutions and national governments. India's National Health Policy, 2017 envisions the goal of attaining highest possible level of health and well-being for all at all ages through a preventive and promotive health care orientation in all developmental policies, and universal access to good quality health care services without financial hardship to the citizens.

Medical Colleges and 27060 in BDS and 6233 in MDS during 2017-18.

There are 3215 Institutions for General Nurse Midwives with admission capacity of 129,926 and 777 colleges for Pharmacy (Diploma) with an intake capacity of 46,795 as on 31st October, 2017. There are 23,582 government hospitals having 710,761 beds in the country. 19,810 hospitals are in rural area with 279,588 beds and 3,772 hospitals are in urban area with 431,173 beds. 70 per cent of population of India lives in rural areas and to cater to their need there are 156,231 Sub Centres (SCs), 25,650 Primary Health Centres (PHC) and 5,624 Community Health Centres (CHC) in India as on 31st March 2017.

in all developmental policies, and universal access to good quality

health care services without financial hardship to the citizens. Under health related Sustainable Development Goal (SDG) no. 3 (Good Health and Well-Being), a commitment towards global effort to eradicate disease, strengthen treatment and healthcare, and address new and emerging health issues has been pronounced. The gains of India in many health related indicators helped the country to make progress in achieving MDGs. Ayushman Bharat Mission, world's largest health scheme announced in the Union Budget 2018-19, is the latest initiative for expanding the health insurance net and targets 10 crore poor and deprived rural families. There has been a concerted effort to improve the health care infrastructure as well as delivery mechanism in the last couple of years. Several schemes, programmes and initiatives have been undertaken to bridge the gap to make the quantity as well as quality of the health services available to the last mile.

Major Government Initiatives

Government of India has taken some major initiatives to promote Indian healthcare industry. On September 23, 2018, Government of India launched Pradhan Mantri Jan Arogya Yojana (PMJAY), to provide health insurance worth Rs 500,000 (US\$ 7,124.54) to over 100 million families every year. In August 2018, the Government of India has approved Ayushman Bharat-National Health Protection Mission as a centrally Sponsored Scheme



contributed by both Centre and State governments at a ratio of 60:40 for all States, 90:10 for hilly North Eastern States and 60:40 for Union Territories with legislature. The Centre will contribute 100 per cent for Union Territories without legislature.

Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)

The Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) has the objectives of correcting regional imbalances in the availability of affordable/ reliable tertiary healthcare services and also to augment facilities for quality medical education in the country.

PMSSY has two components:

- (i) Setting up of AIIMS like institutions
- (ii) Upgradation of Government Medical College Institutions.

Six AIIMS-like institutions, one each in the States of Bihar (Patna), Chhattisgarh (Raipur), Madhya Pradesh (Bhopal), Orissa (Bhubaneswar), Rajasthan (Jodhpur) and Uttaranchal (Rishikesh) have been set-up under the PMSSY scheme. Approved cost of each new AIIMS in first phase was Rs. 820 crores, Rs. 620 crores towards cost of construction and Rs. 200 crores for procurement of Medical Equipment and modular Operation Theatres.

PMSSY also envisaged up-gradation of several existing medical institutions in different states in the country. Initially the estimated outlay for up-gradation was revised to Rs. 150 crores per institution (from initial estimate of Rs. 120 crore), with Rs. 125 crore as the share of Central Government.

Ayushman Bharat, Pradhan Mantri Jan Arogya Yojana (PMJAY)

One of the most ambitious health insurance programmes in the world today, the Pradhan Mantri Jan Arogya Yojana (PMJAY), Ayushman Bharat, gives India the chance to transform its healthcare infrastructure. Launched in September 2018, PMJAY aims to



One of the most ambitious health insurance programmes in the world today, the Pradhan Mantri Jan Arogya Yojana (PMJAY), Ayushman Bharat, gives India the chance to transform its healthcare infrastructure. Launched in September 2018, PMJAY aims to address the healthcare needs of India's poorest 100 million households...

address the healthcare needs of India's poorest 100 million households. The path to success, however, is strewn with several challenges. If these hurdles are

overcome and if PMJAY succeeds, India's largest health insurance scheme would also become its most effective healthcare initiative.

Building a Healthy India

Ayushman Bharat

World's Largest Health Insurance Initiative

PM Jan Arogya Yojana
 Launched on 23rd Sept. 2018

मंत्री जन-आरोग्य

जगत्प्रथम, सार्वजनिक स्वास्थ्य सेवा प्रदान करने वाला, विश्व का स्वास्थ्य बीमा कार्यक्रम
23 सितंबर, 2018
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Health & Wellness Centres to provide Comprehensive Primary Healthcare services

To Provide health insurance cover of up to

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per family per year to around 50 cr persons

1.5 lakh

Health & Wellness Centres to provide Comprehensive Primary Healthcare services

Over 41.45 lakh beneficiary e-cards generated and over 6.95 lakh persons treated since the launch (as on 31st Dec. 2018)

4th Jan 19 January 2019

PMJAY has the potential to institute reforms to the country's healthcare and health insurance systems at a lower cost to the exchequer. If streamlined, health information and monitoring systems can arrest the possibility of over-provisioning and cost-inflation. The idea to shift away from a decaying system of government-funded hospitals and people, towards a mix of private and government health care, governed by common principles and financed by low-cost health insurance—is a step in the right direction.

Kayakalp

The Swachh Bharat Abhiyan launched by the Prime Minister on 2nd October 2014, focuses on promoting cleanliness in public spaces. Public health care facilities are a major mechanism of social protection to meet the health care needs of large segments of the population. Cleanliness and hygiene in hospitals are critical to preventing infections and also provide patients and visitors with a positive experience and encourages moulding behaviour



related to clean environment. As the first principle of healthcare is “to do no harm” it is essential to have our health care facilities clean and to ensure adherence to infection control practices. Swachhta Guidelines for Public Health Facilities have been issued separately. To complement this effort, the Ministry of Health & Family Welfare, Government of India has launched a National Initiative to give Awards to those public health

facilities that demonstrate high levels of cleanliness, hygiene and infection control. “Kayakalp” is an initiative to promote sanitation and hygiene in public healthcare institutions. Facilities which outshine and exceed the set measures are awarded and incentivized under Kayakalp.

Till date, “Kayakalp” initiative has been able to encourage public health facilities in the country to work towards attainment of excellence in cleanliness and hygiene. “Kayakalp” is becoming instrumental in building confidence of the users in public health facilities.

Mission Indradhanush

The Government of India has launched Mission Indradhanush with the aim of improving coverage of immunisation in the country. It aims to achieve at least 90 per cent immunisation coverage by December 2018 which will cover unvaccinated and partially vaccinated children in rural and urban areas of India.

Private sector in Health Care

The Supreme Court in a recent judgment directed government hospitals in Delhi to refer poor patients to private hospitals. This decision has been described as a pro-poor decision which aims at bringing the poor rural patients at par with the urban rich patients who till now had been the sole beneficiaries of such private institutions. The court directed that

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Ensuring Affordable & Quality Healthcare



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Price of Cardia Stents reduced by **85%**

Price of Knee Implants reduced by **69%**



As on 31st March 2019

the private institutions would provide medical care free of cost to the poor, pending preparation of a scheme which would involve private players in treating the poor. The appeal was filed against an earlier decision of the Delhi High Court whereby, the High Court had directed certain private hospitals to ensure free treatment to 10 percent in-patients and 25 percent outpatients, this mandatory ruling was given on the ground that the land for construction was given on an undertaking which bound the private players to provide free health care to people who belong to economically weaker sections of the society. The apex court directed that the Delhi Government and Private Health institutions should come together and draw up a plan for serving the poor. This decision would go a long way in strengthening the public health system. The issues of access to quality health care may be addressed by collaboration between State Governments and private players.

Market Size

The healthcare market can increase three fold to Rs 8.6 trillion (US\$ 133.44 billion) by 2022. India is experiencing 22-25 per cent growth in medical tourism and the industry is expected to double its size from present (April 2017) US\$ 3 billion to US\$ 6 billion by 2018.

There is a significant scope for enhancing healthcare services considering that healthcare spending as a percentage of Gross Domestic Product (GDP) is rising. The government's expenditure on the health sector has grown to 1.4 per cent in FY18E from 1.2 per cent in FY14. The Government of India is planning to increase public health spending to 2.5 per cent of the country's GDP by 2025.

Building a Healthy India

More Beds, More Facilities, More Hospitals and More Doctors

- 20 New Super Speciality AIIMS - like Hospitals being set up
- 3 new AIIMS announced for Jharkhand, Gujarat and Himachal Pradesh in 2017-18
- 73 Government Medical Colleges being upgraded
- 1675 hospital beds added in the functional AIIMS
- Total 92 Medical Colleges, resulted increasing of 15,354 MBBS seats
- Total 12,646 PG Seats have been increased

Source: Ministry of Health and Family Welfare, Government of India

Investment

The hospital and diagnostic centers attracted Foreign Direct Investment (FDI) worth US\$ 5.25 billion between April 2000 and June 2018, according to data released by the Department of Industrial Policy and Promotion (DIPP).

Achievements

In 2017, the Government of India approved National Nutrition Mission (NNM), a joint effort of Ministry of Health and Family Welfare (MoHFW) and the Ministry of Women and Child Development (WCD) towards a lifecycle approach for interrupting the intergenerational cycle of under nutrition.

As of September 23, 2018, the world's largest government funded

healthcare scheme, Ayushman Bharat was launched.

As of November 15, 2017, 4.45 million patients were benefitted from Affordable Medicines and Reasonable Implants for Treatment (AMRIT) Pharmacies.

As of December 15, 2017, the Government of India approved the National Medical Commission Bill 2017. It aims to promote medical education reform.

Road Ahead: Healthcare infrastructure and services

India's healthcare industry is one of the fastest growing sectors and it is expected to reach \$280 billion by 2020. The country has also become one of the leading destinations for high-end diagnostic services with tremendous

India's competitive advantage also lies in the increased success rate of Indian companies in getting Abbreviated New Drug Application (ANDA) approvals. India also offers vast opportunities in R&D as well as medical tourism. To sum up, there are vast opportunities for investment in healthcare infrastructure in both urban and rural India.

capital investment for advanced diagnostic facilities, thus catering to a greater proportion of population. Besides, Indian medical service consumers have become more conscious towards their healthcare upkeep.

Indian healthcare sector is much diversified and is full of opportunities in every segment which includes providers, payers and medical technology. With the increase in the competition, businesses are looking to explore for the latest dynamics and trends which will have positive impact on their business. The hospital industry in India is forecasted to increase to Rs 8.6 trillion (US\$ 132.84 billion) by FY22 from Rs 4 trillion (US\$ 61.79 billion) in FY17 at a CAGR of 16-17 per cent.

India's competitive advantage also lies in the increased success rate of Indian companies in getting Abbreviated New Drug Application (ANDA) approvals. India also offers vast opportunities in R&D as well as medical tourism. To sum up, there are vast opportunities for investment in healthcare infrastructure in both urban and rural India.

Garg (2018) suggests that public healthcare service should ensure three "Es- Expand – Equity - Excellence". Access to adequate health care would need expansion of tertiary care facilities. Tertiary care should be equitably distributed to different segments of population. The setting up of new facilities will have to address imbalances at three levels- regional, specialties, and ratio of medical doctors to nurses and other healthcare professionals.

India is well poised to a better public healthcare infrastructure, facilities and services and hopefully with all the well intentioned initiatives we shall see health taking a top priority agenda in the coming years and delivering on the promises that the new and bold initiatives in the health sector.

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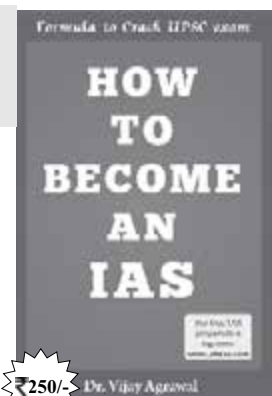
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2500 YEARS OF BUDDHISM

Edited by P.V. Bapat
Pages: 424, Ninth Edition: 2018,
Publications Division, Ministry of Information & Broadcasting,
Government of India

The book gives an exhaustive account of the ethos, philosophy and art-related aspects of Buddhism, evolved in the last 2500 years. The Foreword of the book was written by Dr. Radhakrishnan, world-renowned philosopher. The book contains 16 chapters and about 100 articles written by eminent Buddhist scholars from India, China, Japan, Sri Lanka and Nepal.

Buddhism is a way of life, of purity in thinking, speaking and acting. This book gives an account of Buddhism not only in India but also in other countries of the East. Detailed and insightful glimpse into the different schools and sects of Buddhism find a place in this book. Buddhist ideas on education and the prevailing state of Buddhism as revealed by the Chinese pilgrims who visited India during that time are other components of the book. Chapters on Buddhist art in India and abroad and places of Buddhist interest are also included to give it a holistic perspective.

The chapters, written by eminent scholars of Buddhism, present exhaustive information and analysis on diverse aspects of Buddhist ways of life. The historical aspect covers the four Buddhist Councils and consolidation and spread of Buddhism during the reign of Ashoka and thereafter. The Buddhist thought and ethos spread over the entire south, south eastern and central Asia. The book presents an in-depth analysis about principal schools and sects of Buddhist canon. The books also presents a holistic glimpse of Buddhist literature, from *Mahavstu* to *Pitakas*. There is an absorbing chapter on eminent Buddhist Scholars – in India and in other countries of Buddhist influence.

Inspiring journeys of Chinese travellers *and* their travel accounts, a peep in the Buddhist Art and places of interest make the volume additionally interesting and absorbing. Later modifications and contemporary studies have also been covered. In a nutshell, this volume is a ‘must-read’ treatise for all scholars and students of Buddhism.

First published in 1956 on completion of 2500 years of Buddhism, the present tastefully illustrated edition has been brought out recently, after its inclusion in the prestigious limited list of Indian publications which have been selected by Ministry of External Affairs for Indian Missions and libraries abroad under its ‘Bharat - Ek Parichay’ programme.

The spirit of Buddha comes alive in the book and enlightens the reader with his teachings.

The book is available at Book Gallery, Publications Division, Sookhana Bhawan, CGO Complex, New Delhi. Email at: businesswng@gmail.com to order your copy.

