



# Kurukshetra

A JOURNAL ON RURAL DEVELOPMENT

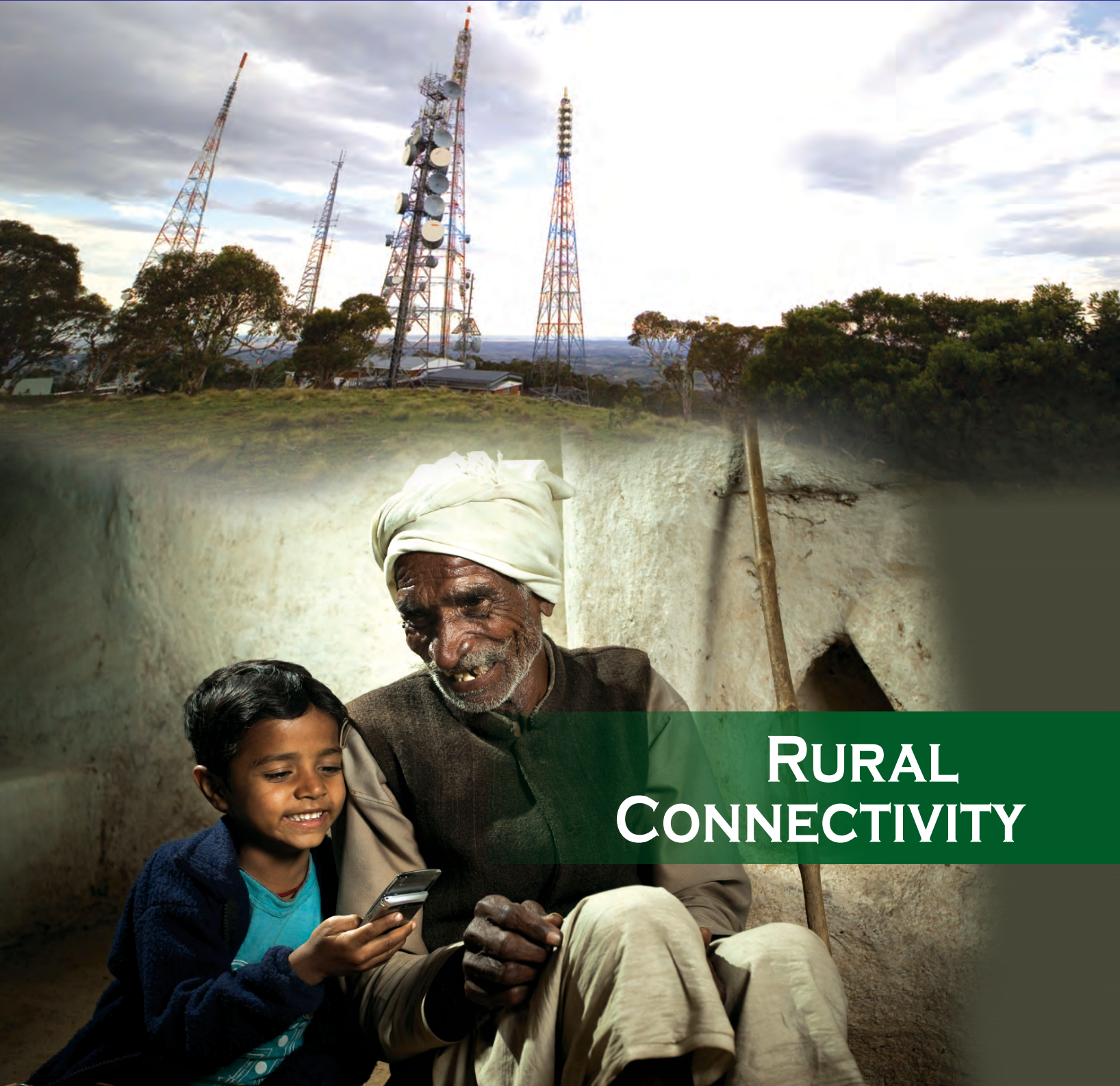
Vol. 64

No. 04

Pages 52

February 2016

₹ 10



**RURAL  
CONNECTIVITY**

## Prime Minister Releases Publications Division's book on Presidential Retreats



**From Right to Left: Hon'ble President of India and Hon'ble Prime Minister of India and Shri Sunil Arora, Secretary, Ministry of Information & Broadcasting**

Two books, brought out by Publications Division, as part of its Rashtrapati Bhavan series, 'The Presidential Retreats of India' and 'Selected Speeches of the President Vol III' were released by the Hon'ble Prime Minister in Rashtrapati Bhavan on 11 December, 2015. The Prime Minister presented the first copy of each of the books to the Hon'ble President Shri Pranab Mukherjee.

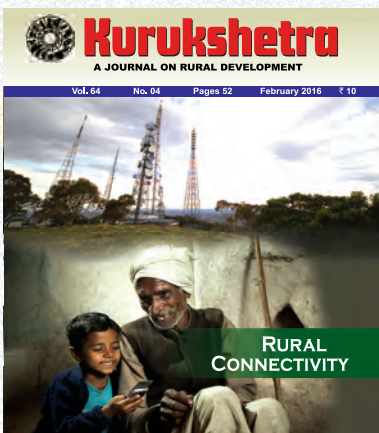
"Presidential Retreats" a Coffee Table Book, documents the history, architecture and other aspects of Presidential Retreats in Mashobra near Shimla, and the Rashtrapati Nilayam, in Secunderabad. The book



**Hon'ble Prime Minister presenting 1st copy of Selected Speeches (Vol III) to the Hon'ble President of India**

describes the traditions and interiors at the retreats, where Presidents have traditionally come both to relax, introspect and to meet people of various parts of India.

Selected Speeches (Volume III) is the third in a series of volumes containing important speeches which the Hon'ble President of India made at several occasions. These 92 speeches reflect the President's deep understanding and appreciation of the subjects and his vision of where he wants to see our country to be in these sectors.



CHIEF EDITOR  
**DEEPIKA KACHHAL**

SENIOR EDITOR  
**RAMAKRISHNA PILLAI**

JOINT DIRECTOR (PRODUCTION)  
**VINOD KUMAR MEENA**

COVER DESIGN  
**ASHA SAXENA**

**EDITORIAL OFFICE**  
ROOM NO. 686,  
Publications Division,  
Soochna Bhawan,  
C.G.O. Complex, Lodhi Road,  
NEW DELHI-110003  
Phone : 011-24362859  
E-MAIL : kurupage@yahoo.co.in

FOR SUBSCRIPTION ENQUIRIES,  
RENEWALS AND AGENCY  
INFORMATION  
PLEASE CONTACT:

JOURNAL UNIT, PUBLICATIONS DIVISION  
MINISTRY OF I & B, ROOM NO. 48-53,  
SOOCHNA BHAWAN, CGO COMPLEX,  
LODHI ROAD, NEW DELHI-110 003  
TELE : 24367453  
FAX: 24365610  
E-MAIL : pdjuicr@gmail.com  
WEBSITE : publicationsdivision.nic.in

**SUBSCRIPTION\* :**  
**INLAND**

1 YEAR : ₹ 100  
2 YEARS : ₹ 180  
3 YEARS : ₹ 250

**ABROAD (AIR MAIL)**

ONE YEAR  
₹ 530 (SAARC COUNTRIES)  
₹ 730 (OTHER COUNTRIES)

\* BEING REVISED FROM APRIL, 2016  
ISSUE ONWARDS

Sales Emporia : Publications Division: \*Soochna Bhawan, CGO Complex, Lodhi Road, New Delhi -110003 (Ph 24365610) \*Hall No.196, Old Secretariat, Delhi 110054(Ph 23890205) \* 701, B Wing, 7th Floor, Kendriya Sadan, Belapur, Navi Mumbai 400614 (Ph 27570686)\*8, Esplanade East, Kolkata-700069 (Ph 22488030) \*A' Wing, Rajaji Bhawan, Basant Nagar, Chennai-600090 (Ph 24917673) \*Press road, Near Govt. Press, Thiruvananthapuram-695001 (Ph 2330650) \*Room No.204, IInd Floor, CGO Towers, Kavadiaguda, Secunderabad-50080, Telenana State (Ph 27546312) \*1st Floor, 'F' Wing, Kendriya Sadan, Koramangala, Bangalore-560034 (Ph 25537244) \*Bihar State Co-operative Bank Building, Ashoka Rajpath, Patna-800004 (Ph 2683407) \*Hall No 1, 2nd floor, Kendriya Bhawan, Sector-H, Aliganj, Lucknow-226024 (Ph 2225455) \*Ambica Complex, 1st Floor, above UCO Bank, Paldi, Ahmedabad-380007 (Ph 26588669) \*KKB Road, New Colony, House No.7, Chenikuthi, Guwahati 781003 (Ph 2665090)

Kurukshetra seeks to carry the message of Rural Development to all people. It serves as a forum for free, frank and serious discussion on the problems of Rural Development with special focus on Rural Uplift.  
*The views expressed by the authors in the articles are their own. They do not necessarily reflect the views of the government or the organizations they work for.*

*The readers are requested to verify the claims in the advertisements regarding career guidance books/institutions. Kurukshetra does not own responsibility. Maps used are for illustration & study purpose and may not strictly conform to the official map.*



The Monthly Journal

**Kurukshetra**

MINISTRY OF RURAL DEVELOPMENT

Vol. 64 No. 4 Pages 52

February 2016

## CONTENTS

❖ Digitally Connecting Rural India	Soni Kumari	5
❖ Pradhan Mantri Gram Sadak Yojana – Rural Upliftment Connectivity	Dr. Mahi Pal	9
❖ Information & Communication Technology: Income Avenues To Rural Farmers	Dr Gopal Kalkoti	13
❖ Rural Connectivity and Health	Aarti Dhar	19
❖ Farm Productivity Through Information Flow	Ratnajyoti Dutta	23
❖ Make in India: Promoting Indigenisation	Dr. Parveen Kumar	27
❖ Dedicated Freight Corridors of Indian Railways	Deepak Razdan	31
❖ Rural Roads: The Artery of Indian Economy	Dr. Barna Ganguli	33
❖ Enhance Connectivity to Boost Rural Tourism	Dr. Gracious James	37
❖ Connecting Farmers through Rural Post Office Linked Extension Model	S. K. Dubey, Sujit Sarkar and team	43
❖ South Asian Games-2016 Sports Extravaganza in North East	Samrat Paul	47

# Editorial

**T**oday, we live in a world of high connectivity thanks to the revolutionary changes taking place in different sectors of infrastructure especially in the field of Information & Communication Technology. Internet and mobile phone access, even in the remotest villages, has brought about noteworthy changes in mitigating the hardships faced by the rural population of India in accessing different services or amenities of life.

From rural roads to a digital world, connectivity has truly transformed the ambience of rural India and its economy. Needless to say that enhanced connectivity through Pradhan Mantri Gram Sadak Yojana and innovative initiatives like Digital India are providing the right fillip to rural income avenues and upliftment. Masses hitherto unconnected to better transport, health care, education and other basic amenities for a decent life are at present in a much better position to reap the dividends of economic development due to enhanced rural connectivity in different spheres.

Pradhan Mantri Gram Sadak Yojana (PMGSY) that envisages connecting all eligible unconnected habitations with a population 500 people in plain areas and 250 persons in special category states, tribal or desert areas has brought about tremendous connectivity and thereby better standards of living across rural India. As on October, 2015 an amount of Rs.1,27,824 crore has been released to different states and UTs under this Yojana and a route of 4,54,048 Km roads have been completed. PMGSY has provided new road connectivity to 12,550 habitations in different states.

Digital India initiative launched in July last year by the Centre is another quantum jump in ensuring further connectivity. The scheme aims to empower citizens with e-access to government services and livelihood related services. The innovative initiative to connect 2.5 lakh villages of India through the National Broadband Network by spending a whopping four billion US dollars will have a cascading effect on rural connectivity and prosperity. Farmers' portals, Call Centres and scheme to strengthen IT Apparatus in states etc. will further empower rural India through digital connectivity.

Connectivity, physical or otherwise is crucial in improving health in our rural areas. Better connectivity will play a pivotal role in making 'Mission Indradhanush', the ambitious universal immunization programme, a success. It is pertinent to note that Kerala's success saga in health standards can be attributed to the state's very good connectivity.

The present focus with massive investments in roadways and railways is another step in the right direction to further connect rural India with the urban centres of development. The dedicated freight corridors of Indian Railways once completed have the potential to bring about both industrial development and facilitating the movement of goods and farm produce at a much faster pace leading to economic growth and prosperity. In nutshell, enhanced connectivity in any form is sure to further bridge the gulf between the rich and poor, curtailing urban and rural divide. Hence connectivity is the right path to equitable distribution of income and wealth. □



## DIGITALLY CONNECTING RURAL INDIA



Soni Kumari

Global case-studies have demonstrated how wireless broadband plays a key role in rural society, impacting GDP, productivity and employment. In a study undertaken across 26 Latin American countries between 2003 and 2009, it was observed that a 10 per cent increase in broadband penetration resulted in an average increase of 3.19 per cent in per capita GDP.

The Government's ambitious "Digital India" plan aims to digitally connect all of India's villages and gram panchayats by broadband internet, promote e-governance and transform India into a connected knowledge economy. By the year 2019, the 'Digital India' program envisages that 250,000 Indian villages will enjoy broadband connectivity, and universal phone connectivity. This is a truly visionary and commendable initiative. However, to implement this vision in a country where most of the population resides in rural areas is very challenging. It can best be done by creating Digital "Town Squares" – which will be tower-based sites that enable the Smart Village and would become the focal point for providing information, social, e-learning and e-governance services to villages. This can become the spring board for rapid economic growth in the rural areas.

Global case-studies have demonstrated how wireless broadband plays a key role in rural society, impacting GDP, productivity and employment. In a study undertaken across 26 Latin American countries between 2003 and 2009, it was observed that a 10 per cent increase in broadband penetration resulted in an average increase of 3.19 per cent in per capita GDP. In Africa, 90 per cent of the total broadband penetration is mobile-based. E-commerce, e-health/education and e-governance are already the key applications. For example, M-Pesa mobile banking service in Kenya carries 20 per cent of the country's GDP.

Digital India Programme aims to transform India into digital empowered society and knowledge economy. This is a follow up to the key decisions taken on the design of the programme during the meeting on Digital India Programme in August 2014,

and to sensitize all ministries to this vast programme touching every corner of the government. This programme has been envisaged by Department of Electronics and Information Technology (DeitY).

The programme will be implemented in phases from the current year till 2018. The Digital India is transformational in nature and would ensure that Government services are available to citizens electronically. It would also bring in public accountability through mandated delivery of government's services electronically; a Unique ID and e-Pramaan based on authentic and standard based interoperable and integrated government applications and data basis.

Digital India is an initiative by the Centre to ensure that Government services are made available to citizens electronically by improving online infrastructure and by increasing Internet connectivity. It was launched on July 1, 2015 by Prime Minister Sh. Narendra Modi. The initiative includes plans to connect rural areas with high-speed internet networks. Digital India has three core components. These include:

- The creation of digital infrastructure
- Delivering services digitally
- Digital literacy

A two-way platform will be created where both the service providers and the consumers stand to benefit. The scheme will be monitored and controlled by the Digital India Advisory group which will be chaired by the Ministry of Communications and IT. It will be an inter-Ministerial initiative where all ministries and departments shall offer their own services to the public Healthcare, Education, Judicial services etc. The Public-private partnership model shall be

adopted selectively. There are plans to restructure the National Informatics Centre. This project is one among the top priority projects of the Government.

Over the past decade Internet has changed the way we work, socialize and how we share information. Internet today is considered as the driving economies around the Globe and it has direct impact on GDP as it has greater magnitude and reach. India has seen a major shift in preferences of people and shifting to internet services as it is easily available and easily accessible to common man at reasonable prices. India has emerged as one of the major players in IT sector as also it is known as IT hub for various multinationals across Globe.

India has a population of more than 1.2 billion out of which 52 per cent of the population is below 25 years of age. Having 900 million mobile connections (130 million smart phones and over 200 million internet users). India online population is growing steadily.

According to sources, Internet services are mostly used in Urban areas as compared to rural areas but the trend is likely to be changed in coming times.

This is all because of Central and State Government initiatives. Government policies have made the difference today over 1100 schemes can be accessed PAN India. The major emphasis is being given to provide better services to the people alongside improving internal efficiency.

As a nation, India has laid emphasis on National e-governance plan and has given its approval for Digital India – A programme to transform India into digital empowered society and knowledge economy.

This is a step taken further by the Government to bring all the Ministries, State Governments under one Umbrella through which it can promote various sectors such as electronic services, products, devices, manufacturing etc.

Through this new initiative this will create more job opportunities and people's aspirations can also be met. This creates convenience to all citizens i.e. information will be easily available, no standing in queues, hassle-free transactions etc.

In future prospects this will help in bridging the gap between rich and poor and all can be at a same platform to avail services. One of the best

examples in today's scenario is IRCTC i.e. booking and cancellation of rail tickets online. In recent times it has seen a major shift in people's perception for booking/cancellation of railway tickets. Almost 70 percent of railway tickets are now booked online. Another good example is Banks in India, over the past decade all banking services are now available online through internet. This industry is considered as one of the best services Industry whereas people of India can be treated as consumers. This approach is termed as CITIZEN-CENTRIC approach.



## Project

Broadband in 2.5 lakh villages, universal phone connectivity, Net Zero Imports by 2020, 400,000 Public Internet Access Points, Wi-fi in 2.5 lakh schools, all universities; Public wi-fi hotspots for citizens, Digital Inclusion: 1.7 Cr trained for IT, Telecom and Electronics Job creation: Direct 1.7 Cr. and Indirect at least 8.5 Cr. e-Governance & eServices: The Government of India entity Bharat Broadband Network Limited which executes the National Optical Fibre Network project will be the custodian of Digital India (DI) project. BBNL had ordered United Telecoms Limited to connect 250,000 villages through GPON to ensure FTTH based broadband. This will provide the first basic setup to achieve towards Digital India and is expected to be completed by 2017. Optical fibre cables have been laid out in more than 68000 village panchayats.

## Broadband Highways

- This covers three sub components, namely Broadband for All Rural, Broadband for All Urban and National Information Infrastructure.
- Under Broadband for All Rural, 250 thousand village Panchayats would be covered by December, 2016. DoT will be the Nodal Department and the project cost is estimated to be approximately Rs. 32,000 Cr.

- Under Broadband for All Urban, Virtual Network Operators would be leveraged for service delivery and communication infrastructure in new urban development and buildings would be mandated.
- National Information Infrastructure would integrate the networks like SWAN, NKN and NOFN along with cloud enabled National and State Data Centres. It will also have provision for horizontal connectivity to 100, 50, 20 and 5 government offices/ service outlets at state, district, block and panchayat levels respectively. DeitY will be the nodal department and the project cost is estimated to be around Rs 15,686 Cr for implementation in 2 years and maintenance & support for 5 years.

### Broadband Penetration for Digital Villages

For this concept to be successfully implemented, certain conditions need to be met:

- First the telecom infrastructure for broadband facilities have to be available to a critical mass of consumers – a few islands of connectivity will not add significant economic value.
- A wide range of applications and content relevant for rural consumers must be accessible on mobile devices and the operators must provide service packages affordable to the target user. Broad based availability of broadband services, through handheld devices, is a pre-requisite for the achievement of the goals of 'Digital India'.

The greatest challenge in providing such affordable broadband coverage is the wireless "last-mile" link. Typically, carriers will extend data coverage to rural areas after a well-developed network of telecom towers is established, with optic fiber/microwave back haul.

Unfortunately, telecom infrastructure providers find rural towers quite uneconomic. In most countries, towers are built in rural areas with government subsidy and support. These Governments make land, rights of way and infrastructure available for rural mobile networks at low or no cost. The 'Digital India' plan will not deliver the desired results unless NOFN is linked to telecom towers, which provide critical 'last mile' wireless broadband services to rural households.

In this context, rural telecom towers are, and will remain, a key component in taking broadband down to the village level.

### Digital "Town Squares"

Globally, cities have an open public space like a "town square" which become a focal point for recreational and social activity. In a similar fashion, the site of the telecom tower can become a focal point – like a Digital "Town Square" for providing services to the village. Towers provide in-site physical infrastructure, each with its own ecosystem of energy, security etc., which can be utilized to deliver several critical services and facilities. These towers can extend significant benefits to the village's economy, as demonstrated in several countries in Africa.

E-Government and other value added services can be offered at these sites. These include utility payments (power, water and telecom bills) and e-learning stations. ATC, in its own endeavor to reach out to villages to provide e-learning, has installed Learning Stations (Kiosks) that have pre-loaded educational material that aim at enhancing functional computer literacy among school children aged 6 to 14 years.

ATC mobile towers are the nucleus for providing e-Learning in rural areas. This programme uses the 24/7 energy backup at the tower and the 3G/4G/WiMax broadband link to provide e-learning at a computer kiosk attached to the tower or at a nearby village school. A typical installation has:

- Two self-learning computer stations or "Kiosks" at ATC Tower sites.
- 24x7 uninterrupted power supply from the tower site.
- Guard room at the tower site to install the Learning Stations.
- 3G or Wimax wire/wireless internet data connectivity.
- Tower sites that are in close proximity to community schools/schools in rural and semi-urban areas so that children from these schools can use the Learning Stations. The ATC experiment has led to significant success in the area of e-learning. The same success could be replicated in other areas like e-governance, e-health, e-commerce as well.

### Public Private Partnerships

Currently, India has a total of 450,000 telecom towers, only 60 per cent of which are located in rural areas. These tracts have a poor tele-density of 46 per cent (according to TRAI). We need another 60,000 telecom towers in order to achieve the goals of the

'Digital India' programme. Rural telecom remains expensive. For 60,000 additional towers to be installed in rural India, Government has to provide incentives to businesses to make it attractive for them to invest Rs. 20,000 crores, not even counting the backhaul cost.

The only way, to get broadband penetration in rural India is through Public Private Partnerships (PPP).

With these features in place, implementing this program will be neither quick, nor easy. PPP committees need to be set up at the highest level in each state to facilitate the rollout and provision of these services. Despite the tediousness, scale of the venture, and time required to medium-term, and associated social and economic implications for India in the long-term, Public Private Partnership is an absolute necessity for the cause of 'Digital Villages'. To add value, our Indian subsidiary would be happy to participate in a few PPP pilot projects, by providing the Telecom Infrastructure that is essential to making these projects a success.

## Conclusion

The telecom infrastructure companies can play a major role in the eventual success of 'Digital India'. A well-orchestrated collaboration between the Government, policy makers, mobile network operators, and telecom infrastructure companies is crucial to the success of this venture. However, rather

than imposing taxes, levies, charges, and licence fees on the telecom sector, the government must provide 'gap funding' and other incentives to the Industry for expanding into rural locations; they also need to form a public-private partnership (PPP) to initiate and manage wireless broadband pilot projects in districts with government provided fibre backhaul (NOFN) aimed at creating smart villages.

Industry recognises that the next level of inventions and innovations could come out of India. While the services sector will continue to provide more opportunities, India's next surge would come from the manufacturing sector that would create more jobs and incomes in both urban and rural areas. In short, the future belongs to those corporations that would have a strategy of Make in India and Make for India. If Indian companies could focus on technologies and products that could help build Digital India, their manufacturing strategies could have greater relevance to a changing nation.

The success of the programme, however, will depend on the benefits accrued to people when it rolls out. If India is able to usher in a digital revolution, it will not just improve the lives of its billion-plus people whose ancestors laid the foundations of many great civilisations, but it will also benefit the world at large.

*[The author is a Ph.D. Scholar With the Deptt. of History, L.N.M.U. Darbhanga, Madhubani, Bihar]*

## Big Boost To Solar Rooftop Projects

The Cabinet Committee on Economic Affairs, chaired by the Prime Minister Shri Narendra Modi has recently approved the scaling up of budget from Rs. 600 crore to Rs. 5,000 crore for implementation of Grid Connected Solar Rooftops systems over a period of five years upto 2019-20 under National Solar Mission (NSM). This will support installation of 4200 MW Solar Rooftop systems in the country in next five years.

The capital subsidy of 30% will be provided for general category States/UTs and 70% for special category States i.e., North-Eastern States including Sikkim, Uttarakhand, Himachal Pradesh, Jammu & Kashmir and Lakshadweep, Andaman & Nicobar Islands. There will be no subsidy for commercial and industrial establishments in the private sector since they are eligible for other benefits such as accelerated depreciation, custom duty concessions, excise duty exemptions, tax holiday etc,

This capacity of 4200 MWp will come up through the residential, Government, Social and institutional sector (hospitals, educational institutions etc.). Industrial & commercial sector will be encouraged for installations without subsidy. This will create the market, build the confidence of the consumers and will enable the balance capacity through market mode to achieve the target of 40,000 MWp by 2022.

The Government has revised the target of National Solar Mission (NSM) from 20,000 MWp to 1,00,000 MWp by 2022. This approval will boost the installations of solar rooftop projects in a big way and will act as a catalyst to achieve the goal of 40,000 MWp.

A large potential is available for generating solar power using unutilized space on rooftops in buildings. Solar power generated by each individual household, industrial, Institutional, commercial or any other type of buildings can be used to partly fulfil the requirement of the building occupants and surplus, if any, can be fed into the grid. So far, 26 States have notified their regulations to provide Net Metering/Gross metering facilities to support solar rooftops installations.



# PRADHAN MANTRI GRAM SADAK YOJANA – RURAL UPLIFTMENT CONNECTIVITY

Dr. Mahi Pal

To give impetus for public investment in the rural sector particularly rural infrastructure, the Government has taken a decision to accelerate execution of PMGSY and complete the connectivity mandate of the balance eligible habitations under PMGSY-I by March, 2019 itself, before the target year of 2022.

Roads are like arteries which infuse life and raise hopes and aspirations for a better quality of life. Pradhan Mantri Gram Sadak Yojana (PMGSY) is instrumental in this regard by way of providing impetus for development as it aims to provide all-weather road connectivity to all eligible unconnected habitations, existing in the Core Network, in the country side. This article deals with the road connectivity achieved so far, new initiatives taken under PMGSY in the country and based on the findings of some studies showing the betterment in the lives of villagers.

## PMGSY and Better Road Connectivity

The programme envisages connecting all eligible unconnected habitations with a population of 500 persons and above (as per 2001 Census) in plain areas and 250 persons and above in Special Category States, Tribal (Schedule-V) areas, the Desert Areas and in selected tribal and backward districts. It may be mentioned that in Integrated Action Plan blocks the unconnected habitations with population 100 and above (as per 2001 Census) would be eligible to be covered under PMGSY. The PMGSY also permits upgradation of existing rural roads in districts where all the eligible habitations of the designated population size have been provided all weather road connectivity.

PMGSY-II was launched in May, 2013 with the purpose to consolidate the existing rural road network. It would cover upgradation of existing selected rural roads based on a criterion to make the rural road-network vibrant and improve its overall efficiency. States of Andhra Pradesh, Gujarat, Haryana, Karnataka, Maharashtra, UP and Telangana are covered under PMGSY-II. It is proposed to cover during the 12th five year plan period, overall 50,000



km road length by upgradation at an estimated cost of Rs.33,030 crore at 2012-13 prices. Projects of 11, 234 Kms of roads in 7 States of the country have also been sanctioned by the Rural Development Ministry. Till October, last year 3,421 Kms of roads have been upgraded by states under it.

Under PMGSY-I, there are 1, 78, 184 eligible unconnected habitations as per the core network. Since inception, projects for about 5, 46,552 Kms roads to connect 1, 45,041 numbers of habitations have been cleared with an estimated cost of Rs. 1, 83,608 crore including upgradation. A sum of Rs. 1, 27,824 crore has been released to the States/UTs and expenditure of Rs. 1, 37,025 crore has been incurred by the States by October, 2015. A total of 4, 54,048 km. road length have been completed and new connectivity has been provided to over 1, 12,550 habitations by the States.

During 2015-16, the annual allocation of PMGSY is Rs 15,291 crore, out of which Rs 8,593 crore has already been released to the States. To give impetus for public investment in the rural sector particularly rural infrastructure, the Government has taken a decision to accelerate execution of PMGSY and complete the connectivity mandate of the balance eligible habitations under PMGSY-I by March, 2019 itself, before the target year of 2022.

Quality of the roads are very important for their better outcomes. In this regard, it may be stated that a three tier Quality Control Mechanism (i.e. in house quality control, State Quality Monitors and National Quality Monitors) has been designed for the inspection of roads. The National Quality Monitors are managed and assigned inspections by National Rural Roads Development Agency an arm of the Ministry of Rural Development.

Keeping in view the importance of road connectivity in rural economy and society, the indicative annual allocation for the states and UTs have been enhanced under PMGSY during the current year. The funding pattern of PMGSY would be in the ratio of 60:40 in respect of all the States except special category states (8 North Eastern States, J&K, Himachal Pradesh and Uttarakhand), for which the sharing pattern would be 90:10.

It may be seen from the above that continuous emphasis has been given to the Scheme for construction and maintenance of roads as these roads are very important for holistic development of the countryside.

### PMGSY and betterment in quality of life

As mentioned above, since inception, the construction of roads have been focused throughout the year due to their importance in rural economy and society. In order to prove that the Scheme has improved the quality of life of villagers major findings of two studies namely impact assessment study of PMGSY which was conducted in 2009 in 19 states of the country and Benefit Sensitivity Analysis from Gender Perspective which was conducted in 2008 in 11 states of the county can be analysed.

### Major Findings

It may be mentioned that in general PMGSY has benefitted mostly those habitations which have been deprived of all weather road connectivity. It was found that more than 90 per cent of the sample habitations covered in the states of Bihar, Chhattisgarh, Jharkhand and Uttar Pradesh have reported improvement in terms of all season motorized access after PMGSY road was constructed. In Jharkhand, where none of the habitations had motorized access during all season, now all the habitations are having motorized access during all seasons. Both heavy and light vehicles have been plying on these roads which

in turn facilitating movements of people and goods in rural areas. Sector-wise following improvements have been noticed.

### Fillip to Agriculture

Improved connectivity has increased cropping intensity and cropping pattern, increased market accessibility and better prices for their produces as reflected by the findings of the study. There was a shift in cropping pattern from pluses to cereals. An increase of 1.23 per cent in cropped area under vegetables, fruits and other cash crops was noticed after construction of PMGSY roads in the sampled areas. It was also noticed that about 7 per cent of the households growing cereals reported increased use of improved seeds post PMGSY and about one-fifth of the households have reported increase in production of various crops after construction of PMGSY roads.

PMGSY roads have brought markets to the villages and facilitated farmers accessing the markets easily which is evident from the fact that more than half per cent of farmers growing cereals have shifted from selling their produce to on-farm local traders to outside traders after PMGSY road came into existence. **Improved agricultural incomes has economically empowered farmers as reflected by the fact that in the connected habitations now 45 per cent of the households have acquired a tractor after the construction of PMGSY road in their habitation, 41 per cent have acquired a Power Tiller, more than 20 per cent a Thrasher, 22 per cent water lifting pump set and 45 per cent have acquired other farm machinery.**



### More Employment Avenues

It is noticed that about 35 per cent households have reported increase in number of days of

employment ranging from 50 days to more than 200 days in the principal occupation of their earning members post PMGSY. It is also found that as many as 6 per cent of the households have reported that at least one of their earning members has shifted their place of employment from within the habitation to outside the habitation.

### Improvement in Income & Poverty Alleviation

As many as 37 per cent households from 6324 households engaged in agricultural activities reported increase in the gross value realized of the total production as compared to the gross value realized before construction of the PMGSY road. As many as 65 per cent households reported an increase in the average annual income from 10 per cent to 50 per cent in their principal occupations after the PMGSY road was constructed. Out of 18,655 households surveyed, 12,647 households were BPL households. Out of these more than 66 per cent households reported increase in the score on socio-economic parameters. Further, 13 per cent of the households have reported owning better dwelling unit as compared to the type of house they owned before the construction PMGSY road.

### Betterment in Other Areas

Better roads networks provided faster all season access to health facilities and time remains very crucial in case of health emergencies. The provision of an all season road in the villages facilitates creation of infrastructure, institutions, increase in manpower and other improvements in the educational aspects. Access to educational facilities have also been increased after the construction of PMGSY roads. There is more



inclination for construction of pacca houses, sanitary latrines. Travel time has been reduced to approach markets and Panchayat offices after construction of the PMGSY roads.

The objectives of the study on benefit sensitivity analysis from gender perspective was inter-alia aimed to assess the flow of direct and indirect benefits to women, assess women's involvement in works planning and execution of the scheme. The study was undertaken in 11 states of Assam, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Mizoram, Odisha, Rajasthan, Tamil Nadu and Uttar Pradesh. In each State, two districts were selected and in each district four project sites of PMGSY were chosen for the study.

### Flow of Direct Benefits

The direct benefits provided during construction of the road are assessed in terms of employment, wages, wage rates, on-site facilities, and women participation in road construction.

- The PMGSY roads have provided significant employment and wages to local rural women and has given them a sense of financial security, though in a limited way.
- Study revealed that more women received wage employment in comparison to men in the states of Assam, Gujarat, Karnataka, Madhya Pradesh, Rajasthan and Tamil Nadu.
- Women were employed primarily as labour, but in some states they also worked as labour contractors elevating themselves as managers and entrepreneurs. This is a significant role of PMGSY for building capacity and confidence among women in some states.

### Indirect Benefits

The flow of indirect benefits to women from the use of the roads in the post construction period were assessed in terms of improvement in livelihoods, health, education, enhanced mobility, women's access to goods and services, access to information and entertainment, greater reduction in drudgery.

- It was noticed that there was greater awareness among both women and men about livelihood opportunities and the untapped potential

of many areas which are now more easily accessible.

- PMGSY roads have not only increased awareness about livelihood opportunities for the rural women but also increased livelihood sources in study areas.
- Significantly, PMGSY roads have led to positive changes in occupational patterns among women by voluntarily taking them out of the confines of four walls of their homes to take up employment as wage labour and as entrepreneurs. This not only provided them with better returns but also gave them economic freedom.
- Improved access to better medical facilities has been an almost immediate benefit to the rural women as all weather road connectivity provided them wider variety and option for medical consultations.
- The effect of PMGSY roads on women's health has been most significantly demonstrated by the dramatic decrease in the maternal and infant mortality rates.
- Better health has led to a decrease in the loss of women days of employment.
- PMGSY roads have given immense boost to education for the girls at primary, secondary and tertiary levels thereby removing a major obstacle in educating one of the most neglected sections of the society. Women were not found behind girls as they also stepped out from their homes for attending training and skill development programmes at block headquarters and other places.
- PMGSY roads have enabled women to have substantially greater access to banking facilities, better marketing, access to internet and newspapers, movies, fairs and festivals. These have not only brought lifestyle changes among women but have positively impacted on their quality of life.
- PMGSY roads have attracted better and faster means of transport which have substantially saved travel time for women.
- PMGSY roads have also instrumental in better organization among women through greater participation in skill acquisition programmes.

Improved organization of women has enabled them to leverage other awareness and access benefits provided by the new roads under PMGSY.

### Works Planning and Execution

PMGSY guidelines have provided bottom up approach for finalising plans. The core network under the Scheme approved by the Panchayats and Gram Sabha at village level. In this way, the entire community was involved either directly or through the elected representatives in the implementation of the Scheme.

It is emerged from above analysis that findings of both the studies lend strength to the conviction that PMGSY roads have provided both direct and indirect benefits to village community by way of opening new window of opportunities in primary, secondary and tertiary sectors in rural economy. Particularly, new roads have greatly benefited women in terms of more informed choices at their levels and easier access to the outer world.

### Conclusion

To conclude, the PMGSY roads have to a large extent assisted in contributing towards the achievement of India's targets for the Millennium Development Goals relating to poverty reduction and removal of hunger by way of increasing agricultural production and creating job opportunities not only in construction sector but also in primary and secondary sectors of rural economy. The issues relating to social, educational and health development have also been addressed by the roads constructed under PMGSY by way of achieving universal primary education and improving maternal health. Gender equality and empowerment of women in terms of independence of travel and increased mobility and greater access to goods and services, information and entertainment have also been contributed by the roads constructed under PMGSY. On the basis of above, it may be said that the PMGSY roads have brought about overall improvement in the quality of life of the people living in rural areas.

***[Author is an Independent Consultant on rural development issues and can be accessed mpal1661@gmail.com.]***

# INFORMATION & COMMUNICATION TECHNOLOGY: INCOME AVENUES TO RURAL FARMERS

Dr Gopal Kalkoti

By June, 2014, rural India had about 122.4 million (68.32 per cent) households with mobiles exhibiting mobile connectivity has become a basic service in rural areas. Rural mobile subscriber base is growing twice as faster compared to urban subscriber base. As of March 2015, the national teledensity was 79 per cent and rural teledensity 46.5 per cent.

Government's "Digital India" project launched on 1<sup>st</sup> July 2015 envisions empowering citizens with **e-access** to government services and livelihood related services, among others. The project comprises three core components.

Mobile phone is the preferred delivery medium with focus on **mGovernance and mServices**. The **mAgriculture and mGramBazar**, out of seven components covered under **mServices**, directly impact agricultural extension and marketing services. The 'National Digital Literacy Mission' will make 10 million people digitally literate in five years and digitally empower at least one person in every family.

The project will benefit small farmers. It seeks to :-

- i) transform rural India into a digitally-empowered knowledge economy
- ii) provide universal phone connectivity and access to broadband in 250,000 villages
- iii) extend timely services to farmers through ICT
- iv) enhance efficiency in agricultural governance through digital literacy and electronic delivery of services.



This article briefly highlights government and private initiatives and suggests the need for harnessing potential of digital India for agricultural development in the light of current agricultural scenario when mobile phone penetration in rural India has been fast increasing.

## Harnessing Potential of ICT

**Information and Communication Technology has the potential to revolutionize Indian agriculture** in terms of raising crop productivity and profitability per unit area and resources. Several apps are now available and many more can be developed to help farmers access authentic, accurate and timely information related to high-yielding variety seeds, production-enhancing and cost-minimizing farming practices, efficient use of water including micro-irrigation system, integrated nutrient and pest management, post-harvest management practices, marketing of farm produce in domestic and international markets and measures to mitigate adverse impact of climate change.

## Government's Initiatives in ICT for Agriculture

- The government has proposed a **National Broadband Network**, which will lay out a fibre-optic cable across the country to achieve last mile connectivity and encourage private operators to make services available in hitherto untouched areas. For this, the government has committed about \$4 billion to build the network to connect 250,000 villages.
- Government has put in operation three portals viz. farmer portal, kisan call centre and mkisan portal to help farmers take informed decisions for efficient farming under varying agro-climatic

conditions. Farmers can reach the nearest buyers and sell products directly and minimize post-production wastages and cost. Social media all over the country can connect buyers with sellers directly and remove middlemen.

- **Farmers' portals:** This portal aims at serving as "One Stop Shop" for farmers for accessing information on agriculture. Besides, it facilitates linking the location of the farmer with the concerned National Agricultural Research Project zone to which he belongs. This facilitates him to access crop-specific technical information including package of farm practices, control of pests and diseases; dealer-network for seeds, fertilizers, pesticides, farm equipment, weather advisories etc.
- **Farmers Call Centres:** This initiative aims at providing farmers toll-free information in their local language throughout the country.
- Under the eGovernance program, soil health card software has been standardized and web-based software developed to provide integrated nutrient management recommendations using soil test crop response method for eight states.
- **Strengthening IT Apparatus in States (AGRISNET):** Under AGRISNET, computers are provided up to the sub-district level throughout the country and state-specific software packages have been developed to disseminate information to farmers. Availability of required hardware and locally suitable software package has resulted in quick retrieval of data, dissemination of information to farmers and provision of farmer-centric services.
- **NABARD has also designed agricultural portals for farmers.**

### Private sector initiatives

Private sector, NGOs and social groups have also been using ICT in agriculture to supplement Government's efforts for efficient delivery of various services to farmers. Following two, among others, having unique methodologies and content are briefly described to help farmers access desired services for agricultural development.

**e-Choupal:** It is a business initiative by

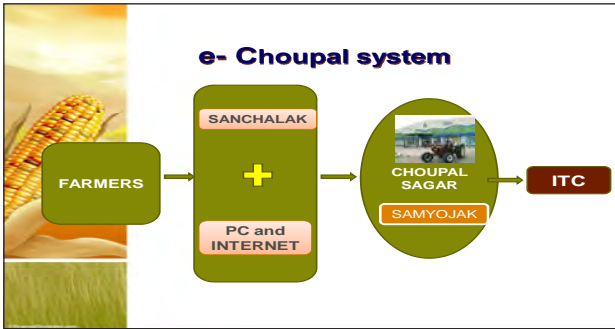
ITC that provides Internet access to farmers. e-Choupal is an innovative market-led business model designed to enhance the competitiveness of Indian agriculture.

e-Choupal leverages the power of Information, digital technology and internet to help farmers access services viz. agricultural knowhow and best practices, timely weather information, supplies of inputs throughout the region, transparent discovery of farm prices. Portal has questions and answers section to enable interaction between farmers and agricultural experts and helps farmers manage risks, such as soil contamination or salinity etc. ITC is, also, partnering with banks to help farmers access to credit and insurance services.

ITC has established "ITC Kiosk" with computer and internet facility in villages managed by a computer-trained farmer (sanchalak) in his house and is linked to the Internet via phone lines or by a very-small aperture terminal (VSAT) connection. e-Choupal system comprises three components viz. internet-enabled computer located at a "focal point farmer," internet connection via phone lines or VSAT and dedicated services through the eChoupal.com portal. Each internet connection serves 10 villages in a 5km radius, reaching average 600 farmers. This system improves logistics and reduces transaction costs. Finally, it provides the link to ChoupalSaagars, integrated rural service centres serving 40 e-Choupals each, where farmers can bring their farm produce to sell and buy seeds, fertilizer and consumer goods. The sanchalak bears some operating cost but in return earns a service fee for the e-transactions done through his e-Choupal. The warehouse hub is managed by the same traditional middle-men (samyojaks) but with no exploitation because of streamlined services. These middlemen fulfil critical jobs like cash disbursement, quantity aggregation and transportation.

e-Choupals connect farmers with markets and allows for a virtual integration of the supply chain improving efficiencies in the traditional system.

Farmers earn higher profit margin because they are no longer forced to sell through a middleman. ITC benefits because its simplified and intensified supply chain system increases business



and profits. ITC has 6500 e-Choupals computer stations in 40,000 villages serving 4 million farmers of 10 States.

### Reuters Market Light (RML) Information

**Services:** After 18 months of market research prototyping and market trials, RML was launched in Maharashtra in 2007 and in Punjab in 2008. RML delivers customized, localized and personalized agricultural information to farmers from pre-sowing to post-harvest stages including weather, crop prices through SMS on mobile phones in local language. About 1.4 million farmers from about 50,000 villages have been using this service across 18 states.

RML has empowered farmers with such information that enables them to take informed decisions and reduces their production and marketing risks. According to ICRIER study (2009), RML users had 5 per cent to 25 per cent increase in their income. The World Bank study (2010) revealed 8 per cent increase in price realization to farmers selling directly to traders. The USAID study (2011) observed that farmers accessing RML services realized Rs.6-8 more per kg on their produce. Around 80 per cent farmer-users improved alignment of farm output to market demands, ensuring improved productivity and better quality of produce

### Low Crop Productivity & Profitability

According to "Situation Assessment of Indian Farmers", only about 28 per cent farmers use any kind of agriculture-related information that is available rather than what they need whereas about 72 per cent farmers do not have any source of information that can help them adopt latest technology and most farmers are unable to access credit, insurance and marketing services from the established institutions. This is primarily

responsible for farmer's low crop productivity and profitability. Despite India has the largest irrigated land and, ranks second in terms of arable land crop-yields are 20 per cent-40 per cent of world's best levels.

The ICAR study showed that integrating agricultural credit with technology and production inputs, farmers can increase wheat production by around 40 per cent and double paddy production at current levels of technology. Efficient agricultural extension agency and support service providers can bridge the existing gap between the actual crop yields at field level and the potential yields. The post-harvest losses exceed 25 per cent annually.

For marketing, small farmers have to deal with multiple layers of middlemen. **For example, farmers sell in village itself 85 per cent of wheat and 75 per cent of oil seeds in Uttar Pradesh, 70 per cent of oil seeds and 35 per cent of cotton in Punjab, and 90 per cent of jute in West Bengal. These middlemen take away about 47 per cent of the price of rice, 52 per cent of groundnut and 60 per cent of potatoes. On an average, Indian farmers realize only 20 to 25 per cent of the value paid for by consumers.**

### Promising Mobile penetration in rural areas

India has about 69 per cent rural population. By June, 2014, rural India had about 122.4 million (68.32 per cent) households with mobiles exhibiting mobile connectivity has become a basic service in rural areas. Rural mobile subscriber base is growing twice as faster compared to urban subscriber base.

As of March 2015, the national teledensity was 79 per cent and rural teledensity 46.5 per cent.

Telecom Policy aims to increase rural teledensity to 60 per cent by 2017 and 100 per cent by 2020. Study of the IAMAI revealed 80 per cent using it for communications, 67 per cent for online services, 65 per cent for e-commerce and 60 per cent for social networking. Mobile phones can be effectively utilized for purposes including generating, processing, transmitting, disseminating, sorting, archiving and retrieving critical information and data relating to agriculture. Mobile phones are omnipresent and

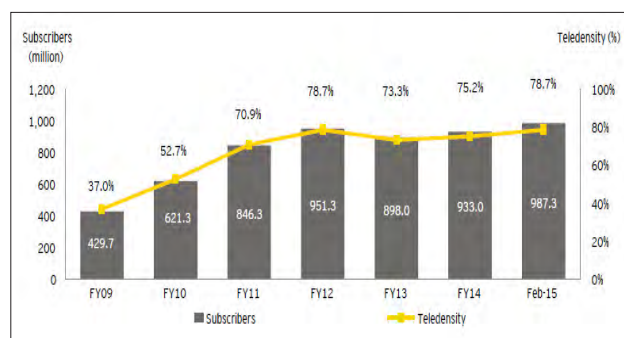
cost effective means to revolutionize agriculture in India. Farmers' timely access to farm output related comprehensive information right from the selection of seeds for planting to marketing of produce in domestic and international markets is a must.

### What Farmers Need?

For India, at a time when national, regional and international research institutes have already developed technologies, farmers need motivation and encouragement to adopt these proven yield-enhancing, cost-efficient and environment-friendly technologies. Acknowledging the low impact of the ICT initiatives of the Government and private sector, the digital India project should pay undivided attention to provide accurate information from authentic sources to farmers on time on various aspects as identified by various field studies, viz.

Farmers need ICT-enabled portals for following purposes which can be developed, rigorously field tested and made available to them.

- **Technology:** Production-enhancing proven crop-specific technologies (from pre-sowing to harvesting and post-harvest management) based on soil and water analysis. Separate for dry land and irrigated farming focusing efficient use of seeds, fertilizers, water, pesticides, farm equipment and labour; and reclamation of degraded, saline and alkaline land.
- **Production inputs and farm equipment:** Crop-specific reasonably priced standard quality production inputs (seeds, fertilizers, pesticides, etc) and farm equipment and machinery along with sources of availability
- **Post-harvest services:** Storage, transport, processing, packaging and marketing



- **Institutional services:** Land records, farm credit, insurance, marketing, weather, farmer-producers' organizations, market yards, procurement centres
- **Government facilities:** Availability of subsidies, assistance available to mitigate effects of climate change, drought, floods, earthquake, cyclones

**Institutions:** State government's department of agriculture, state agricultural universities, Krishi Vigyan Kendras, regional research institutes, farmer-producers organizations, corporate/industrial/business houses and multinational companies (engaged in manufacturing/production and distribution of farm inputs, farm equipment and machinery), rural financial institutions, insurance companies, among others, have a significant role and added responsibility to contribute their professional knowledge to develop digital ecosystem for agriculture and make available to farmers.

### Focused Attention:

Immediate need is to conduct a nationwide [separately for each agro-ecological region] evaluation study to assess the impact of ICT initiatives on agriculture already developed and put in place by the Government and private sector in respect of

- number of farmers regularly receiving and using mobile-enabled agricultural information services
- feedback from users about content, timeliness, utility, satisfaction, changes required, their grievances
- increase in productivity, output and income of benefitted farmers
- increase in price realization in farm commodities sold, direct selling without dependence on middlemen
- reduction in costs of transactions
- mechanism to redress grievances.

The study of the Asia-Pacific Research Centre of the Stanford University on ICT Initiatives under the project "Agriculture and Rural Livelihood" in India concluded that the *usage of* ICT was sparse compared to its significant potential



and substantially constrained by factors viz. illiteracy, inadequate infrastructure (particularly connectivity), low level of awareness of usage, availability of very few digital programmes, central site location, and Government regulations. This suggests the need for coordinated and concerted efforts by all stakeholders to create a national agricultural knowledge repository in digital form which is nurtured daily through feeding, weeding, pruning and enriched and disseminated among farmers.

For successful designing digital ecosystem for agriculture, the system design should have all desired features of higher user satisfaction, viz.

- i) ease of access
- ii) updated content
- iii) layout, design, consistent themes
- iv) easy navigation
- v) higher interactivity
- vi) access through multiple media (particularly voice)
- vii) higher use of non-textual information
- viii) language options
- ix) lower cost of transaction.

A professionally managed ICT platform in public private partnership mode can bring various pieces of agricultural value chain system together and design solutions with 'mobile-first' approach to maximize on-ground adoption and create visible impact.

Regulatory and Development Authority need to be in place to ensure

- i) increase in farmers' easy, timely and reliable access to agricultural information system (as per farmers' needs) throughout the country in a systematic and planned manner
- ii) development of need-based appropriate digital models for agriculture under public and private sector which conform BIS and are available at affordable cost
- iii) improving general/digital literacy, computer skill and digital infrastructure in rural India in line with digital India vision
- iv) prevention of fake models and fraudulent practices

**[Author is Associate Professor and Head, Dept of Economics, Nagindas Khandwala College, Mumbai]**

### **Cabinet Approval for Pradhan Mantri Fasal Beema Yojna**

The Union Cabinet has recently approved Pradhan Mantri Fasal Beema Yojna, a crop insurance scheme aimed to ensure farmers' welfare. The scheme will offer more insurance with less premium, and lead to rise of purchasing capacity of farmers.

The new Crop Insurance Scheme replaces the existing National Agricultural Insurance Scheme. As per the scheme farmer's share of premium has been substantially reduced and government will provide subsidy on premium. Government liability on premium subsidy will be shared by Central and State Governments on fifty-fifty basis.

The budget for Crop Insurance will be substantially increased from 2823 crore rupees to 7750 crore rupees in 2018-19. Remote Sensing, smart phones and drones will be used for quick estimation of crop losses and early settlement of claims.

The Insurance Portal will be used extensively for ensuring better administration, co-ordination and transparency. Districts will be allocated to Insurance Companies on cluster basis for longer duration to ensure uniformity. Cabinet has approved Unified Package Insurance Scheme, UPIS on pilot basis for 45 districts. It will cover activities like machinery, life, accident, house, and student safety in addition to crop insurance. These schemes will be implemented from Kharif season 2016.

# BOOKS FOR CIVIL SERVICES EXAMINATIONS 2016



Book Title	Price (₹)	ISBN
INDIAN POLITY (4th Edition)	595/-	9781259064128
INDIAN ECONOMY (7th Edition)	650/-	9789339221294
GENERAL STUDIES (Based on NCERT)	465/-	9789339219444
ENVIRONMENT	425/-	9789339224981
GENERAL STUDIES (2016) PAPER-I	1450/-	9789339224172
GENERAL STUDIES (2016) PAPER-II	995/-	9781259098758
INDIAN AND WORLD GEOGRAPHY (3rd Edition)	495/-	9789385880186
ETHICS, INTEGRITY AND APTITUDE	295/-	9789385880148
WHAT...? WHEN...? HOW...? (ANSWERS TO ALL QUESTIONS ABOUT CIVIL SERVICES)	395/-	9789339224547
INDIAN ART AND CULTURE	395/-	9789385880490

\*Prices are subject to change without prior notice



## RURAL CONNECTIVITY AND HEALTH

Aarti Dhar



It is clear from different examples that connectivity, physical or otherwise, is as important as human resource and infrastructure to improve health in the rural areas. Reaching out to people individually is equally essential for this purpose. India achieved success in eradicating polio more by reaching out to the last person physically than anything else.

**R**ekha Tewari, auxiliary nurse midwife (ANM), posted at a sub-centre under Donda Primary Health Centre in Jhalawar district of Rajasthan still remembers December 3, 2014 when she made a presentation before the Chief Minister Vasundhara Raje on how a tablet would help in improving immunization coverage and reducing maternal and child health.

Soon after, the State government decided to distribute tablets to all frontline health workers (FLWs) to maintain records. The frontline workers include auxiliary nurse midwives, accredited social health activists and anganwadi workers.

“Our work has become so easy. We can get real time data on health at the click of a mouse. No need to carry big, bulky registers,” says Rekha. Until last year, we would carry village specific registers during our field visits, but now the entire data of all villages under this PHC is available with us all the time,” Rekha points out.

The tablet is not only used to maintain data but also used for counseling through games, video counseling films which have helped in motivating women and adolescent girls on issues like the use of iron folic tablets for anemia; and, zinc and ORS for diarrhoea. Important information regarding delivery including how to call for 104 and 108 ambulances is also fed in the tablets. Tablets have been a success particularly on Mother and Child Health and Nutrition Days because even if a pregnant woman or lactating mother forgets to bring her ‘Mamta Card’, the details are still available.

All information on ante-natal check-ups, post natal care and immunization is available in the tablet and can be retrieved any time.

In Uttar Pradesh’s Barabanki district, Accredited Social Health Activist (ASHA) Urmila Devi says bicycle is her life! Urmila Devi of village Parshurampurva in Banki block was selected as ASHA in 2005 but soon realized moving around in the villages to reach out to women was just next to impossible because there was no local transport. Even going for a training to block headquarter became an issue. The result was her performance took a hit and she was about to be removed when she learnt cycling. Now she is the best performing ASHA among the five under the sub-centre. She credited this feat to her second-hand cycle which she has been using since 2007.

So urgent was the need to connect that Urmila went to her father’s place and requested her younger brother to teach her cycling. She learnt the basic in three days and bought herself a second hand bicycle with her savings which she still uses. “I did not learn cycling when I was studying because my friends used to walk to school but when I became ASHA all my villages were 2 to 3 kms away even the sub-centre at Jasmanda was 3 kms away, so I had no choice,” says Urmila Devi who is now fondly addressed as “*cycle wali ASHA*.”

Valsamma Verghese, an ANM at sub-centre Manpasar, Block Manoharthana in Jhalawar district of Rajasthan still recalls how she would trek to reach the five revenue villages spread over 8 kms to cater to 4,500 people under the sub-centre because there were no roads and no means of transport. She had to walk for several hours to deliver services.

After the roads were laid in 1998, Valsamma’s life became easy as then she often took lift to reach

these villages or her husband would take her. Now, she goes with the local nurse in the vehicle. In view of her services, the government has decided to give her a scooty. "Scooty will make me mobile and I will not have to depend on others to take me around. It will be most helpful when there is an emergency call. I was unable to attend distant emergency calls because of lack of transportation," Valsamma says.

It is clear from different examples that connectivity, physical or otherwise, is as important as human resource and infrastructure to improve health in the rural areas. Reaching out to people individually is equally essential for this purpose. India achieved success in eradicating polio more by reaching out to the last person physically than anything else. Now, a similar strategy is being adopted for boosting the full immunization programme which has remained stagnant at 65.2 per cent having grown only by 4 per cent since 2009.

Mission Indradhanush, depicting seven colours of the rainbow, aims to cover all those children by 2020 who are either unvaccinated, or are partially vaccinated against seven vaccine preventable diseases which include diphtheria, whooping cough, tetanus, polio, TB, measles and hepatitis B.

The Centre had identified 201 high focus districts in the first phase which had nearly 50 per cent of all unvaccinated or partially vaccinated children. These districts were targeted by intensive efforts to improve routine immunization coverage. Of these 201 districts, 82 were in just four states of UP, Bihar, Madhya Pradesh and Rajasthan and close to 25 per cent of such children of India were in these 82 districts of 4 states.



The main reason behind high rates of children dropping out after receiving one or more doses or not receiving any vaccine are lack of awareness in

the community or myths about vaccination, a fear of injection and inadequate service-delivery during vaccination sessions.

Under Mission Indradhanush, four special vaccination campaigns will be conducted every year on specified dates and the implementation and monitoring will be done on the lines of 'Pulse Polio' to ensure success. 'Pulse Polio' success was credited to an army of volunteers who connected with the people in inaccessible regions or those who were unapproachable.

This is not to suggest that technology has no role. Cold chain connectivity, mobile connectivity and road connectivity are equally crucial links for making any programme a success. The public health success story of Kerala is also about connectivity and access to health care at doorsteps. The use of technology for tele-medicine, an efficient supply chain for drugs and road connectivity are the highlights of the public health in Kerala which has the best health indicators in the country and often cited as a role model of public health system.

On their part, big states like Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan and Assam among others are taking steps to improve health indices like maternal mortality ration, infant mortality rate, neonatal and under-five mortality deaths and immunization coverage. The National Rural Health Mission (NRHM), now a component of the National Health Mission (NHM), has greatly improved public health system by providing access to basic health care facilities in the rural, underserved areas.



Over a million ASHAs or Urban Social Health Activists (USHAs) in urban slums now serve as connect between the people and health facilities. They have a significant role in disease prevention and promotion, and by virtue of being members of the Village Health and Sanitation Committees, these frontline workers also have a central role in decision making.

It is only now that the crucial role of ASHAs in improving primarily the reproductive and child health in rural areas is being recognized and appreciated.

Her personal rapport with the community and using this rapport to influence the traditional mind sets has been instrumental in improving institutional deliveries and universal immunization coverage. Though family planning component of the Reproductive, Maternal, Neonatal Child Health and Adolescent (RMNCH+A) continues to be weak. The efforts of frontline workers were backed up strengthening health facilities and improving access to facilities by providing ambulance services which have come as a boon in saving the lives of mothers and children.

The Pradhan Mantri Gram Sadak Yojana, the ambitious rural roads scheme, which connected villages with even a population of 500, and the National Ambulance Service (104 and 108) have complemented each other in reaching out to the community.

When it comes to data, the government has now empowered frontline workers for collecting quality data which forms the basis of making and implementing welfare programmes. The AAA platform, a common space for ASHAs, anganwadi workers and ANMs, has helped in perfectly defining their respective roles to prevent duplication of work, and also streamlining data collection. All three now follow a common format of data collection to avoid discrepancies and ASHA Diary maintains all records instead of a multitude of registers which ASHAs found cumbersome to maintain and carry. In Rajasthan and Uttar Pradesh frontline workers are now being given tablets for making real time data available. ASHA Dairy and tablets have records of high risk pregnancies which need extra bit of attention to ensure a safe delivery.

At the Central level, the Mother and Child Tracking System (MCTS) is an excellent step to electronically keep track of all basic services required for a pregnant woman, lactating mother and a child below 5 years. However, this has some flaws which need urgent correction. The use of mobile phones to remind women of ante and post-natal check-ups and immunization for children has shown a remarkable degree of success.

After all "Child and maternal survival is a mirror that reflects the entire spectrum of social development and addressing these social

determinants through developmental action of all sectors will remain a priority," says the draft National Health Policy, 2015. "Maternal and perinatal mortality is highest in population sub-groups which are poorer, more malnourished, less educated, have lower age of parity and have too many children or too soon. It is also a reflection of patriarchal mindsets and lack of gender equity which makes women more vulnerable," according to the draft Policy.

Admitting that access to services remains the key issue for most of India's poor – with very limited services being available, especially in rural and remote areas and urban slums, the draft Policy says targeted investment in building infrastructure and putting in place an adequate number and skill – mix of health human resources and supplies in under-served areas where the gaps are the greatest, would remain a major strategy improving access.

The proposed National Health Policy also sees tremendous potential for the application of Telemedicine systems and M-health. "These have applications in ensuring continuity of care across levels of care and for reaching out to rural and remote areas. It also has great scope along with other communication channels like the internet for creation of online clinical and non-clinical learning materials that can transform systems of training and distance education for both in service needs and for the private sector partners. All these growing needs will require creation of a new discipline and building capacity within public systems for health informatics – which itself emerges from the combination of public health, information sciences, information technology and understanding of social contexts and institutions in the application



of technology.” The policy is, on scaling of various initiatives in the area of tele-consultation which will entail linking tertiary care institutions (medical colleges) to District and Sub-district hospitals which provide secondary care facilities, for the purpose of specialist consultations.

Kerala has already adopted tele-medicine and other forms of technology in improving public health whereas such vast use of technology remains confined to privately-funded hospitals in the rest of the country. But, such hospitals are beyond the reach of the common patients due to high cost. There are also some policy and operational constraints issues associated with tele-medicine which has prevented maximum utilization.

A good disease surveillance system would also require extensive use of technology for early detection of any outbreak of disease. While India has embarked upon a comprehensive project of the state-of-the-art laboratories right up to the district level, crucial time could be lost until the information reaches the district level or vice versa.

The draft Policy also seeks to build sufficient public health capacity down to the district level, both of a network of well-equipped laboratories backed by tertiary centres and the public health capacity to collect, analyse and respond to disease outbreak.

It would be in the interest of millions of people who suffer from the dreaded tuberculosis and its more severe forms, if India procured at the earliest Genexpert—the latest technology for faster and more accurate detection of the disease

which would lead to early initiation of treatment and in preventing infection and transmission of disease. TB control also needs an efficient laboratory support.

The Centre is now working towards an integrated health information system which improves efficiency, transparency and delivery of better health outcomes in terms of access, quality, affordability and lowering of disease burden and facilitates monitoring of health entitlements to people.

The integrated health information system will have five major components. These will be systems for increasing access to information of community health and the individual’s access to personal health records, the tools required for public health providers at the periphery and mid-level management, systems for support to providers and hospital managers for a measurable improvement in quality and efficiency of care and an-IT enabled supply chain management system in addition to systems for better monitoring, planning and governance. An efficient supply chain is a must for implementation of the National Health Assurance Scheme envisaging free medicine and diagnostic services to the people. The Scheme has already been announced by the government.

Also, the government intends to set up a National e-Health Authority (NeHA) to provide leadership in implementation of the integrated health information system, to promote adoption of standards and facilitate exchange of patient’s health records across facilities in a secure way.

**[Author is a Delhi based Senior Journalist]**

### Attention: Readers/ Subscribers

Dear Readers/Subscribers

Publications Division will be revising the subscription rates for its journals/Employment News with effective from March 1st 2016. The new rates will be prevailing from the April 2016 issue of all journals. The new subscription rates are as follows:

SI No	Name of Journal	subscription Price per copy	subscription Price for Special issue	subscription Price for 1 year	subscription Price for 2 years	subscription Price for 3 years
1.	Yojana	22	30	230	430	610
2.	Kurukshetra	22	30	230	430	610
3.	Aajkal	22	30	230	430	610
4.	Bal Bharati	15	20	160	300	420
5.	Employment News	12	N.A	530	1000	1400

# FARM PRODUCTIVITY THROUGH INFORMATION FLOW

Ratnajyoti Dutta

As a New Year gift, the Modi government approved a satellite imaging based insurance scheme to empower farmers. The scheme 'Pradhan Mantri Fasal Bima Yojana' will have a uniform premium of only 2 per cent to be paid by farmers for all Kharif (summer) crops and 1.5 per cent for all Rabi (winter) crops. For the first time, emphasis has been accorded to satellite technology to facilitate accurate assessment and speedy settlement of claims.

India's farm dependent economy has been trying hard to increase productivity for a long time in an attempt to ensure food security to its huge population. An elevated status of a developed nation would be viable, only if farming activities become sustainable, to feed the country's growing population.

Agriculture, the primary sector that contributes 14-15 per cent to the nation's economy, holds the key to up gradation of the economy from a developing to a developed one. The main focus of the farm dependent economy has been to ensure food security to its population of 1.25 billion.

The developed status has to be based on a productive farming sector wherein farming activities become sustainable, and farmers are empowered with hosts of information channels to ensure them easy access to markets. The basic aim is to link the primary sector with markets so that farmers receive high returns for their produce by extensive use of technologies, integrating the rural economy with markets.

Application of information technologies via mobiles, sms alerts, portals can empower farmers to pick up a crop that promises higher returns in a particular climatic condition, soil texture suitable to a specific crop, efficient water use technique. Technology aided information flow empowers a farmer as to when to expect rainfall and also where to store produce after harvest.

Besides, a higher farm production can be ensured by developing a transparent price mechanism network through integration of nationwide scattered markets through various seamless communication channels.

India had witnessed the First Green Revolution in the sixties. One of the easing the hurdles of achieving the maiden revolution in the farm sector, was construction of roads, that connected remote villages with markets, leveraging movement of farm produce. First achieved in Punjab, this model was replicated later in the entire northwest India, making the nation self-reliant in grain output.

But after over four decades, the country now requires a second round of revolution in agriculture. In the government proposed scheme for a Second Green Revolution, the Northeast region has a key role to play in raising overall productivity levels in the farm sector. The region is hitherto lying untapped, because of its geographical bottleneck and difficult terrain. This can be erased by simultaneous thrust on promoting road and information connectivity of this part with the rest of the country.

Farm productivity has more or less stagnated over the years. To state that agricultural productivity, at present, is disproportionate to the population explosion, is not a hyperbole.

Apart from stagnant production and small land holding size, the country's farm output continues to be dependent on the erratic monsoon season. In a monsoon dependent economy, the farm sector is inherently crippled due to vagaries of nature.

The four-month long monsoon season rules the supply side dynamics of food inflation in the world's fastest growing large economy. If monsoon fails to spread to the grain bowl of Northwest region and rice areas of Eastern, Southern regions, then untold miseries thrust upon majority of the rural population who are dependent on agriculture, directly or indirectly.

The monsoon rains are crucial for ensuring purchasing power in the hands of the country's majority of the population where demand for consumer goods from lipstick to refrigerator depends on a success or failure of the annual summer rain season.

Resilience has been developed after the First Green Revolution against excessive dependence on the seasonal rains. But a failure of the monsoon causes a drought, and the parched land in turn brings tears in the eyes of Indian farmers.

The Second Green Revolution is required to ensure perpetual growth in farm production by erasing supply side uncertainties. This can only be ensured through a deeper technological intervention in the farm sector, making modern information tools and services part and parcel of a farmer's daily life.

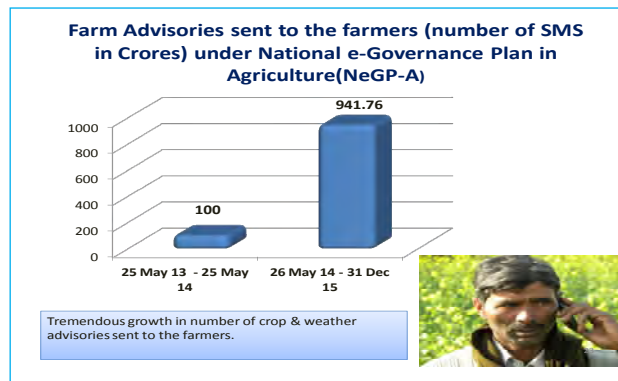
As arable land is limited and not the entire cultivated area can come under purview of an assured irrigation network, only technological intervention is left to ensure higher productivity levels. Higher farm produce is a must to ensure food security for all in the world's second biggest populous nation that runs a huge public distribution network to feed a sizeable population that fights hunger and malnutrition on a daily basis.

Farmers will have to be empowered through information communication technologies so that each and every aspect of farming - right from prices to optimal input mix should be made available at their door steps for initiating an informed decision. An integrated approach to bring farming related information, benefitting farmers, has already been visible with the government's keen focus on Soil Health Card scheme, monsoon advisories and developing a satellite based farm insurance model.

Prime Minister Narendra Modi is committed to promote "per drop, more crop" approach to farming to make better use of scarce water and extensive use of satellite crop monitoring system as part of overall strategy to raise productivity levels in the farm sector through technological interventions.

Experts put stress on use of remote analysis to assess soil moisture and crop development to cut input costs and raise yields in a country where half of workers make a living from agriculture.

Under the satellite intervention in the agriculture sector, farmers can access advisories on mobile phones, enabling them to choose high yielding seed varieties, apply fertilisers in a proportionate manner or decide the precise time of irrigation 'shots'.



Usually, a common farmer doesn't know how much to water his crops, the right fertiliser mix - or even the right crop to sow in accordance with soil texture. An analysis, based on satellite feeds, helps assess vegetation cover down to field level, and also track how a crop is maturing and whether it has been harmed by pests or needs more water. Satellite images can help in projection of a likely output of a crop field, erasing speculative component usually associated with supply side dynamics.

### Technology Interventions

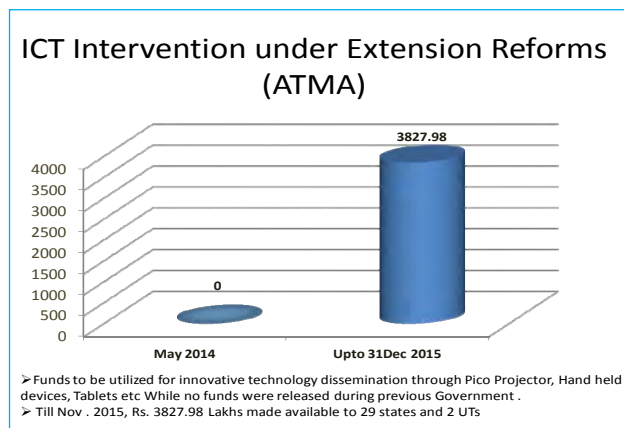
As a New Year gift, the Modi government approved a satellite imaging based insurance scheme to empower farmers. The scheme 'Pradhan Mantri Fasal Bima Yojana' will have a uniform premium of only 2 per cent to be paid by farmers for all Kharif (summer) crops and 1.5 percent for all Rabi (winter) crops. For the first

**Mobile Apps Launched – Crop Insurance & AgriMarket under NeGP-A**

First time Present Government launched three mobile apps to help farmers



time, emphasis has been accorded to satellite technology to facilitate accurate assessment and speedy settlement of claims.



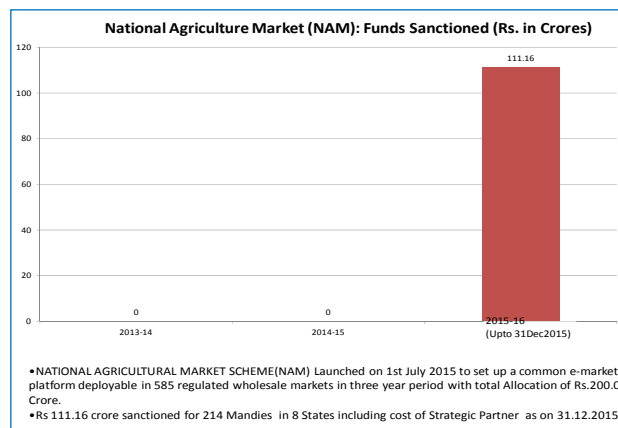
Use of technology has been encouraged in the approved farm insurance scheme, smart phones will be used to capture and upload data of crop to reduce delays in claim payment to farmers.

Indian farmers are also receiving customised weather based advisories on mobiles. Farm ministry runs dedicated weather information based services at various stages of farming. These services, including Kisan Portal, empower country's 11.34 million farmers covering 633 districts of 23 states.

**Farmers' awareness programmes are run on regular basis through multi-media platforms, most popular being state-run All India Radio's dedicated programmes on farming in local languages.**

Rural Development Ministry is also collaborating with the Ministry of Agriculture to distribute advisories and rain gauges for rainfall monitoring on a pilot basis involving around 25 village bodies (Panchayats).

The government's commitment to bring stability in price mechanism has been visible with its attempt to electronically integrate nearly 250 wholesale markets in the country by September 2016. An electronic integration will ensure free movement of farm produce from one market area



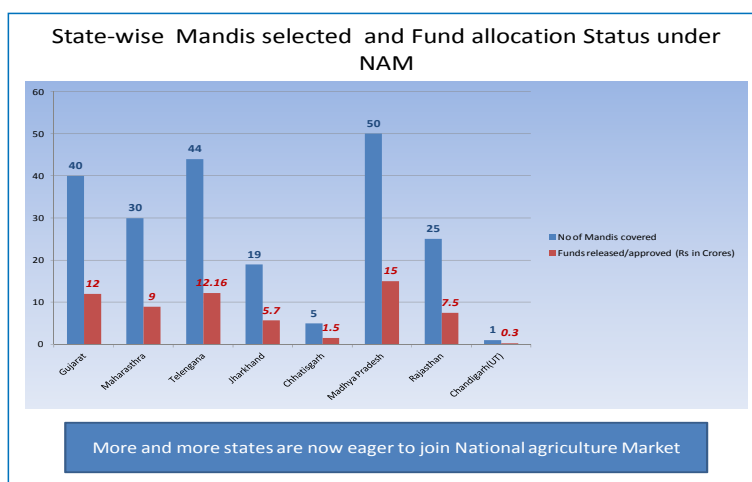
to another, minimising supply side uncertainties associated with price mechanism.

The proposed electronically integrated markets will offer a common market place by providing a platform for real-time prices at a national level for all stakeholders involved in the agricultural supply chain.

It will also offer a trading platform that will enable transaction between buyers and sellers from their existing locations. This will expand the existing market as well as facilitate transactions in places where markets do not physically exist.

Such an initiative would provide farm producers wider access to markets, save them from levies charged by multiple markets and ensure agricultural commodities to consumers at reasonable prices.

A national e-platform for market integration would cover 585 wholesale markets by March 2018, Agriculture Minister Radha Mohan Singh said recently at a meeting of the Parliamentary



Consultative Committee attached to his ministry.

The central government has urged states to introduce the e-market platform within their territories, so that farmers can sell harvest in any of the connected markets. The Department of Agriculture will provide free software and help in customisation of the software to suit the requirements of the states.

The Centre has set aside 1.75 billion rupees for providing software needed for the market integration project with each market receiving three million rupees. Markets from Gujarat, Maharashtra, Telangana, Jharkhand, and Chhattisgarh have already received the approval for the financial assistance in the first phase.

For promoting digital connectivity, the government is running two dedicated Portals to serve as a *One Stop Shop* for all the farmers to access information on agricultural activities. The portals provide information about package of practices, crop and seed varieties, common pests, dealer network for seeds, fertilisers and pesticides, machinery and tools, agro-met advisories, credit and insurance.

The Portals can easily be accessed from any part of the country free of cost by the farmers by

**NAM : Almost 20 States/UTs have expressed interest in joining NAM.**

State /UTs	Number of Mandies	Grant approved / Released (Rs in crore )
1. Gujarat	40	Rs. 12 crore released
2. Maharashtra	30	Rs. 9 crore approved
3. Telangana	44	Rs. 12.165 crore approved
4. Jharkhand	19	Rs. 5.7 crore approved
5. Chhattishgarh	05	Rs. 1.50 crore approved
6. M P	50	Rs. 15 crore approved
7. Rajasthan	25	Rs. 7.50 crore approved
8. Chandigarh (UT)	01	Rs. 0.30 crore approved

visiting the Agriculture Ministry's site at URL: [www.farmer.gov.in](http://www.farmer.gov.in) and [www.mkisan.gov.in](http://www.mkisan.gov.in).

Activities in the Portals are also highlighted through short discussion/interview on "DD Kisan Channel", a dedicated television channel for the Indian agriculture sector.

Two mobile apps were unveiled recently as part of the government's sustained focus to promote use of information technologies for benefit of farmers. Mobile app 'Crop Insurance' helps farmers find out details about insurance cover available in their area. This application helps to calculate the insurance premium for notified crops, coverage amount and loan amount in case of a loaned farmer. AgriMarket Mobile, the second app, can be used by farmers to get market prices of crops in wholesale markets within 50 km radius of the device.

**Timeline for implementation of NAM**

Timeline for Implementation of the Project:	Time Line		
Development and Hosting of Electronic trading Portal and Launch in Pilot Mandies	1-Apr-16		
Roll Out of Software in 200 Mandies	1-April-2016 to 30 Sept 2016		
Roll Out of Software in next 200 Mandies		1-oct-2016 to 31-March-2017	
Roll out of Software in remaining 185 Mandies			1-April-2016 to 31-March-2018

SOURCE: Ministry of Agriculture, Gol.

Through initiated technological interventions, farmers have been empowered to take informed decisions on various choices on the basis of real-time prices so as to trace out in which market they should sell their produce. All these technology based efforts are aimed to provide cushion to farmers against any chance of distress sale in absence of transparent market information.

*(The author is a Delhi based freelancer with thirty years of experience in Media. He can be contacted at [ratnajyoti.dutta@gmail.com](mailto:ratnajyoti.dutta@gmail.com))*



## Make in India: Promoting Indigenisation

Dr. Parveen Kumar

Between September 2014 and November 2015, the government of India received Rs. 1.20 lakh crores worth of proposals from companies interested in manufacturing electronics in India. Foreign Direct Investment (FDI) between October 2014 and May 2015 was up by 40% to \$23.7 billion from the same period a year earlier. Make in India aims to increase the share of manufacturing in the country's GDP from 16 to 25% by 2022 to create 100 million additional jobs and to make the country a manufacturing hub.

One of the flagship programmes of the NDA government led by Prime Minister Narendra Modi, the **'Make in India'** initiative was launched on September 25, 2014, just 41 days after Prime Minister stated about this dream project from the ramparts of the Red Fort. The Department of Industrial Promotion and Policy (DIPP) is the nodal agency executing 'Make in India'. It is basically meant to encourage multinational as well as domestic companies to manufacture their products in India with an emphasis to attract capital and technological investment in the country. The major objective behind the initiative is the focus on job creation and skill enhancement aiming at high quality standards and minimizing the impact on the environment.

Twenty five different sectors of the economy have been identified for the **'Make in India'** initiative. These sectors are Automobiles, Automobile components, Aviation, Biotechnology, Chemicals, Construction, Defence manufacturing, Electrical machinery, Electronic systems, Food processing, IT and business process management, Leather, Media and entertainment, Mining, Oil and gas, Pharmaceuticals, Ports and shipping, Railways, Renewable energy, Roads and Highways, Space, Textiles and garments, Thermal power, Tourism and Hospitality. Even different food items across different regions of the country are also covered under the initiative. *Aarisa Pitha* of Odisha, *Gushtaba* of Kashmir, *Chicken Curry* of Punjab, *Khakhra* and *Khandvi* of Gujarat, *Bamboo steam Fish*, *Vada* and *Medhu vada* of Karnataka, *Khaja* and *Inarsa* of Bihar and *Kebab* of Uttarpradesh and *Puran Poli* of Maharashtra have

been selected as traditional foods to be promoted in the campaign.

For this to be a success, the government has also announced in the last one year several measures to improve the business environment by easing processes to do business in the country and attract foreign investments. Considering the speed at which the government is operating, and the level of intellect and aesthetics that is brought to the table, it has made the private sector look really backward says the executive creative director of the Agency which bagged the **'Make in India'** campaign.

Now, 100% FDI is permitted in all the above sectors except for space (74%), defence (49%) and news media (26%). An investor facilitation cell (IIC) set up by the government will act as the first reference point for guiding foreign investors. The Ministry of Home Affairs have been asked to give all security clearance to investment proposals within three months. The answers for business queries can be obtained through a web portal (<http://www.makeinindia.com>)

### Logo of 'Make in India' initiative

The logo of Make in India initiative is a lion which represents India's glorious past. The lion is made up of an iron cage which represents the industry.

### Vision of the 'Make in India' initiative

#### a. Increase Manufacturing:

It may be recalled that the share of manufacturing sector has been stagnating at approximately 16 per cent of our GDP since 1990's. Make in India

aims to increase the share of manufacturing in the country's GDP from 16 to 25% by 2022 to create 100 million additional jobs and to make the country a manufacturing hub.

**b. Fostering innovation, protecting intellectual property and enhancing skill development:**

The initiative is designed to facilitate investment, foster innovation and enhance skill development while seeking to protect intellectual property. It seeks to build best in class manufacturing infrastructure. It also aims to create appropriate skills among rural migrants and the urban poor for inclusive growth to increase the domestic value addition and technological depth in manufacturing to enhance the global competitiveness of the Indian manufacturing sector

**c. Zero Defect Zero Effect:** Industrialization is not to be achieved by compromising environmental standards. Already the unplanned growth of industries has taken us to a stage just short of a catastrophe. This slogan 'Zero Defect Zero Effect' is coined by the Prime Minister which signifies production mechanism wherein products have no defects and the process through which product is made has zero adverse environmental and ecological effects. It also aims to prevent products developed in India from being rejected by the global market. By this we are also developing Brand India globally.

**d. Building physical infrastructure:** Make in India initiative focuses on building physical infrastructure as well as creating a digital network to make India a global hub for manufacturing of goods ranging from cars to software, satellites to submarines, pharmaceuticals to ports and paper to power.

**e. From a net importer to net exporter of goods:**

Currently a lot of food as well as other items are imported by the country. This costs us billions of rupees that simply go outside the country. The Prime Minister has given a call to the youths; they should resolve to conduct research as to what type of item is imported by India. They should try and manufacture at least one such item so that we need not import the same in future. If each of our millions of youngsters resolves to manufacture at

least one such item, the country can become a net exporter of goods.

**Major initiatives under 'Make in India' programme**

The Ministry of Railways signed formal agreements with Alstom and GE transport worth 400 billion to set up locomotive manufacturing factories in Madhepura and Marhaura in Bihar.

Huawei is to open a new Research and Development (R&D) campus in Bengaluru.

Qualcomm announced that it is starting a 'Design in India' programme to help mentor up to 10 Indian hardware companies with the potential to come up with innovative solutions and help them reach scale. As part of the programme the company will set up an innovative lab in Bengaluru to provide technical and engineering support to the selected companies.

Micromax is going to set up three new manufacturing units in Rajasthan, Telangana and Andhra Pradesh at a cost of Rs. 300 crore. The plants will begin functioning in 2016 and will employ 3000-3500 people each.

Japan also announced to set up a 12 billion dollar fund for '**Make in India**' related projects called the Japan India Make in India Special Finance Facility. Chinese smart phone maker Xiaomi will set up a manufacturing plant in the country.

Cell Phone manufacturer Vivo mobile India begins manufacturing smart phones at a plant in Greater Noida. The plant employs 2200 people.

Ford is to open Rs. 6000 crore factory in India. Sony and Samsung will also start manufacturing their articles in India. Also in a major fillip to '**Make in India**' in defence purchases the government has recently approved major changes to the defence procurement procedure.

Contract manufacturing giant Foxconn, the manufacturer of Apple iphones is to set up 10-12 facilities in India and spend 5 billion dollar on factories and research and development in India. Uber technologies, a service company has also announced to invest \$ 1 billion to build its network in India.

Hyundai heavy Industries of South Korea will work with Hindustan Shipyard Ltd. Vizag to build workshop in India. Currently the time duration from point of order to point of delivery is almost six years. With this collaboration, this gap is expected to come down to 2.5 years.

Forty two new food processing parks will be set up in the next four years to increase the food processing in the country by 25 per cent. These food processing plants will also create a lot of employment potential. Essel group has formed a joint venture with JA solar, a Chinese agency to manufacture solar cells in the country.

### Impact of the 'Make in India' initiative

Between September 2014 and November 2015, the government of India received Rs. 1.20 lakh crores worth of proposals from companies interested in manufacturing electronics in India. 24.8% of smart phones shipped in the country in April-June quarter of the previous year were made in India. This percentage was up from 19.9 % of the previous year. Foreign Direct Investment (FDI) between October 2014 and May 2015 was up by 40% to \$23.7 billion from the same period a year earlier. Net investment by Foreign Institutional Investors (FII's) or simply the money coming through financial markets was \$40.92 in the last fiscal March 31, 2015. This amount is seven times more as in the previous year. The industrial production is also on the rise. **A report of Ministry of Labour and Employment for July- December 2014 on changes in employment in selected cities came up with an interesting finding. It revealed that employment generation has increased 118% as 2.75 lakh jobs were created between July and December 2014. During the same period in 2013, only 1.26 lakh jobs were created. Analysts perceive this exponential increase as a strong indication that the 'Make in India' initiative is working and has brought in a positive change in employment scenario.**

### Success stories under the 'Make in India' Initiative:

**Akash:** The first indigenously built supersonic surface to air missile capable of targeting Unmanned Aerial Vehicles (UAVs), enemy helicopters and aircrafts from a range of 25 kilometers is one of the

five core missile systems of the integrated guided missile development programme. It is a great success story of the 'Make in India' initiative. Barring a few electronic components, every bit of Akash has the 'Make in India' tag. Almost 92 per cent of the total cost of inputs is sourced within India. Bharat Electronics Limited BEL which is the nodal agency and supplies major subsystems reports that as part of the Make in India Initiative about 80 per cent of the sales turnover is from indigenously developed technologies. As on April 1, 2015 BEL had an order worth Rs. 22,100 crore.

**INS Vikrant:** Yet another milestone, the indigenously built aircraft carrier INS Vikrant has 90% of body work, about 50% of the propulsion system and 30 % of the weaponry designed and made in India. Another one the indigenously designed Kolkata class stealth guided missile destroyer INS Kochi was commissioned by Defence Ministry in December 2015.

**Rotavac:** The first indigenously developed and manufactured Rotavirus vaccine Rotavac has boosted our efforts to combat infant mortality due to diarrhoea. It is the third such vaccine available globally against Rotavirus. Rotavac has been developed under a joint collaboration between India and the United States.

India is a country rich in natural resources. Labour is no problem and given the high rates of unemployment among the educated class of the country. From being labeled as a country of snake charmers and where black magic is practised, we are now a country with the largest youth population. But, this demographic dividend has another dimension too. Over the next decade, India has to create gainful employment opportunities for a large section of its population with varying degrees of skill and qualification. This will entail creation of 220 million jobs in 2025 in order to reap the demographic dividend. The make in India initiative beyond any doubt has all the potential to create jobs and to transform the country into a global manufacturing hub. When employment increases, the purchasing power of the common man increases that in turn reduces poverty.

But with all this to happen, we have to reduce considerably all the uncertainties. The availability

of adequate power is of utmost importance. It is required for our entire infrastructure like ports, railways, roads, airports etc. Our ailing infrastructure scenario and defunct logistics facilities also pose a big hindrance for the country to achieve an elite status as a global manufacturing hub. Coupled with it are our archaic labour laws, and the lethargic bureaucracy. Remember we are ranked 142 in the ease of doing business. India ranks low on the ease of doing business index. Labour laws in the country are still not conducive. Skill development is another area of concern. Unlike in Korea, Japan and Germany which have about 80% of skilled population, only 12% of the population in India is skilled. The present government has already created a Ministry of Entrepreneurship to boost job creation in the country which aims

to train and develop 12 lakh youth who enter job market every year. The labour reforms and policy reforms which are fundamental to the economic growth have to be implemented properly.

All this is a tip of the iceberg. Much more is to come from this noble initiative which is presently at very initial stage but has created ripples all over the globe. Make in India is an ambitious project. To put it in the words of Minister of Commerce and Industries Nirmala Sitharaman: "Make in India is not a slogan but a mission to be accomplished by a single minded commitment about new processes".

*[The author is a J&K based Senior Research Fellow; writes on agriculture and social issues and can be reached at pkumar6674@gmail.com]*

### Action Plan For Start-up India Movement Launched

The Prime Minister Sh. Narendra Modi has launched the start-up India initiative in New Delhi on 16th January, 2016. Prior to the launch of the movement to further promote a culture of entrepreneurship in India, a day-long workshop on different aspects of entrepreneurship was also held. The Prime Minister visited a virtual exhibition and interacted with start-up entrepreneurs. Unveiling the highlights of the start-up India action plan, the Prime Minister said that a dedicated start-up fund of Rs. 10,000 crores will be created. He said that start-ups will be exempted from paying income tax on their profit for the first three years. The Government is working towards fast-tracking of start-up patent applications. In his address the Prime Minister also said that he wishes to turn the youth of India from job-seekers to job-creators. "If a Start-up can offer employment to even five people, it would be doing a great service to the nation", the PM added.

The Prime Minister announced an eighty per cent exemption in patent fee for Start-up businesses, and said a self-certification based compliance system for Start-ups would be introduced for nine labour and environment laws. He said the Atal Innovation Mission will be launched to give a boost to innovation.

Start-up India, Stand Up India campaign was announced by the Prime Minister while addressing the nation on Independence Day last year to promote bank financing for start-ups and offer incentives to boost entrepreneurship and employment creation.



*The Prime Minister, Shri Narendra Modi at the launch of Start-Up India, Stand-Up India programme, in New Delhi on January 16, 2016. The Union Minister for Finance, Corporate Affairs and Information & Broadcasting, Shri Arun Jaitley and the Minister of State for Commerce & Industry (Independent Charge), Smt. Nirmala Sitharaman are also seen.*

## DEDICATED FREIGHT CORRIDORS OF INDIAN RAILWAYS

Deepak Razdan

**F**reight operations on the Indian Railways are set to witness a paradigm shift with the stage-wise completion of its two dedicated freight corridors, the Western Dedicated Freight Corridor (WDFC) and the Eastern Dedicated Freight Corridor (EDFC), over the next four years, beginning 2017-18.

Eighty-six per cent of the 10548 hectares land needed has been acquired and most environmental clearances obtained for the projects passing through nine States and 61 districts. By the end of the current financial year (2015-16) or mid-2016, most contracts for the Rs 81,459 crore projects are planned to be awarded.

The commissioning of the two projects, spanning over 3360 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. With the two freight corridors in operation, 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.

Being executed by the Dedicated Freight Corridor Corporation of India Limited (DFCCIL), a Special Purpose Vehicle set up under the Ministry of Railways in 2006, the two dedicated freight corridors will provide relief to the railways' heavily congested Golden Quadrilateral along the western and eastern rail routes and facilitate fresh industrial activity and multi-modal value-addition services hubs along the corridors.

The Indian Railways' Golden Quadrilateral comprises the railways network linking the four metropolitan cities of Delhi, Mumbai, Chennai and Howrah, along with its two diagonals (Delhi-Chennai and Mumbai-Howrah), adding up to a total route length of 10,122 kms and carries more than 58 per cent of the railways' revenue earning freight traffic.

The congestion on the Golden Quadrilateral is affecting railways' efficiency and it is not able to retain or increase its share in the growing goods traffic

resulting from the economic boom. A fundamental reason for this, the Railway Minister Shri Suresh Prabhu said in his Railway Budget 2015-16 speech, was "chronic underinvestment" in the railways. This had led to congestion and over-utilization along with sub-optimal freight and passenger traffic and fewer financial resources.

To ease the situation on the saturated Golden Quadrilateral, the Government of India has, in the first phase, approved construction of the two corridors, the WDFC with a length of 1504 route kms and the EDFC with a length of 1856 route kms. The EDFC, starting from Dankuni in West Bengal will pass through the States of Jharkhand, Bihar, Uttar Pradesh and Haryana to terminate at Ludhiana in Punjab. The WDFC connecting Dadri in Uttar Pradesh to Mumbai-Jawaharlal Nehru Port (JNPT), will traverse through the National Capital Region and the States of Haryana, Rajasthan, Gujarat and Maharashtra. The WDFC will join the EDFC at Dadri. The sanctioned cost of WDFC is Rs 46,718 crore and that of the EDFC is Rs 26,674 crore. The entire cost of the capital expenditure is being financed by the Ministry of Railways through debt and equity. Debt will be financed through loans from multilateral leading agencies. The finalization of contracts has picked up. Contracts worth Rs.17,590 crores have been finalized in the last one year as against Rs 13,000 crore worth contracts in the last six years.

The WDFC has awarded civil work contracts worth Rs.11,028 crores for construction of 625 km long railway line from Rewari to Iqbalgarh in Phase I and 322 km from Vadodara to Vaitarna in Phase-II. Besides, Electrical & Signal & Telecommunication contracts worth Rs. 5,486 crores for 950 km in Phase-1 have also been awarded. The EDFC has awarded contract worth Rs 3300 crore for construction of 343 kms double track line between Kanpur and Khurja. Electrical & Signal & Telecommunication Contract for Kanpur to Khurja has also been awarded. In another contract, the EDFC has awarded contract worth Rs 5080 crore for construction of 402 kms double track line between Mughalsarai-New Bhaupur (Kanpur).

The Western Corridor comprising a 1504 km double line track from JNPT to Dadri has its alignment mostly parallel to the existing lines, except for detours, and entirely on a new alignment from Rewari to Dadri and from Sanand to Vadodara.

The WDFC will mainly benefit export-import container traffic, besides petroleum, oil and lubricants, imported fertilizers and coal, foodgrains, cement, salt, iron and steel. The expected traffic over WDFC in 2021-22 is 152.24 million tones.

The EDFC with a route length of 1856 km will have an electrified single line segment of 447 km between Ludhiana-Khurja and Khurja-Dadri. Traffic to benefit will include coal for power plants in the northern region from coalfields in Bihar, Jharkhand and Bengal; finished steel, foodgrains and cement.

Referring to the railways' falling share in the goods traffic, the Twelfth Plan (2012-17) said "the country transports nearly 57 per cent of the total goods by road, as compared to 22 per cent in China and 37 per cent in the US." In contrast, the Indian railways transports only 36 per cent of the total goods traffic in the country, compared to the 48 per cent in the US and 47 per cent in China.

The Twelfth Plan pointed out how urgent investments in the railways were needed and said "If consistent GDP growth of 7-10 per cent per annum is to be achieved over the next 20 years, there is a pressing need for unprecedented capacity expansion of the railways for both freight and passenger traffic in a manner that has not taken place since Independence." Indian Railway is the fourth largest railway network in the world, and had on 31 March, 2011 a total route length of 64,460 kms of which 21,034 kms is electrified. The total track length is 1,13,994 kms of which 1,02,680 kms is broad gauge, 8,561 kms is meter gauge and 2,753 kms is narrow gauge. Considering the requirements of the economy and size of the country, the expansion of the railway network has been inadequate, though the Indian Railways have added 11,864 kms of new lines since Independence.

Referring to saturation of the capacity in different routes, the Railway Minister said in his Budget speech this year that "On a single track, the Indian Railways have to run fast express trains like Rajdhani and Shatabdi, ordinary slow passenger trains as well as goods trains. Is it surprising that though Rajdhani and

Shatabdi are capable of doing 130 km per hour, the average speed does not exceed 70? Is it surprising that the ordinary train or a goods train can not average more than around 25 km per hour." It is noteworthy that the two dedicated freight corridors can allow train speed up to a maximum of 100 km per hour.

In the acquisition of land, the DFCCIL has implemented one of the best rehabilitation and resettlement packages for the people affected by the projects. More than three lakh people will be affected by the two projects. Land is being acquired under the Railway Amendment Act, 2008. Eighty-six per cent of the land has been acquired except the Sonnagar-Dankuni Section.

Compensation as per the new land acquisition Act has been started with effect from 1<sup>st</sup> January, 2015. Due to resistance from land losers, land acquisition is held up in 140 patches covering a length of 192 km in EDFC and in 231 patches covering a length of 183 km in WDFC. Regular meetings and interaction are being undertaken at Chief Secretary and other official levels for resolution of issues. Out of more than 7000 arbitration cases and 1500 court cases pertaining to land acquisition, 3536 arbitration and 681 court cases have been finalized after consistent persuasion by DFCCIL.

In the execution of the two dedicated freight corridors, the DFCCIL aims to follow a low carbon path, adopting various technological options which can help them to operate with greater energy efficiency. As per a 30 year greenhouse gas (GHS) emission forecast, if there were no dedicated freight corridors, the GHG emissions would be 582 million ton CO<sub>2</sub>, while the emissions with the two DFCs in service would be less than one-fourth at 124.5 million ton CO<sub>2</sub>.

Ministry of Railways plans to have four more dedicated freight corridors and has assigned the DFCCIL to undertake preliminary engineering and traffic survey (PETS) for them. These additional corridors are East-West Corridor (Kolkata-Mumbai) approximately 2330 Kms; North-South Corridor (Delhi-Chennai) approximately 2343 Kms; East Coast Corridor (Kharagpur-Vijaywada) 1100 Kms; and the Southern Corridor (Chennai - Goa) approx 899 Kms.

***(Author is a senior Journalist and former Research Associate, NITI Aayog, New Delhi.)***

***(Courtesy PIB features)***



# RURAL ROADS: THE ARTERY OF INDIAN ECONOMY



Dr. Barna Ganguli

Unlike the earlier programmes, the PMGSY is being implemented as a 100 per cent centrally funded scheme. As per the current guidelines, the PMGSY covers all habitations above 500 population to be provided with all-weather rural roads. In case of hills, deserts and tribal areas, the threshold is relaxed and covers all habitations above 250 population.

**R**ural Connectivity is the nerve centre of our economy. The linkage between urban and rural areas is possible through rural roads, so rural roads are the arteries of any civilization. A country's rural road network is often made up of tracks, trails, footpaths and earth roads that link rural villages and towns. In many cases they connect to secondary roads by allowing the residents to access products, factor markets, and social services that are not provided by their own communities. Rural Connectivity is a critical component in the socio-economic development of rural people as it provides amenities like education, health, marketing etc. Always, there has been skewed development of the rural road network in the country. While some States provided cent per cent connectivity some others did not have enough financial resources at their disposal and consequently rural connectivity remained at low levels. There were also problems of inadequate funds for maintenance, upgradation and renewal of existing rural roads.

## Problems due to lack of proper connectivity:

Agriculture is an important sector of the Indian economy, accounting for 14 per cent of the nation's GDP, about 11 per cent of its exports, about half of the population still relies on agriculture as its principal source of income and is a source of raw material for a large number of industries. Accelerating the growth of agriculture production is therefore necessary not only to achieve an overall GDP target of 8 per cent during the 12<sup>th</sup> Plan and meet the rising demand for food, but also to increase incomes of those dependent on agriculture to ensure inclusiveness. Physical



access further plays an important role in realising a number of the Millennium Development Goals. Rural roads play a crucial role in the provision of physical access. The benefits of improved access can be short lived if the rural roads are not managed and maintained. One of the ways to make services more accessible is by making people more mobile through roads.

## Agriculture and Rural Roads

Rural roads and transport are essential for sustaining agricultural development. Many rural Indians still suffer from poor access to markets, health, schooling and high transport costs. Inadequate rural roads make it hard for farmers to produce more and to transport any surpluses after harvest. Traffic on most rural roads still consists mainly of pedestrians often carrying head loads. Rural infrastructure cannot be created by peasants themselves; because most villages have no businesses or enterprises and have no money to spend. Agricultural production by small-scale farmers in India has its final destination to main

centres of the country where it is distributed to various local markets. About three fourth of the rural roads in the country are in poor conditions and need to be repaired. The lack of adequate rural infrastructure in the country has affected food production and distribution drastically. This in return can create food shortages in the main centres where food demand is very high. Poor and inadequate rural roads have been the main concern by both small producers and consumers. Urgent response to this problem would be:



- i) To improve the state of the existing rural roads.
- ii) To construct new rural roads in places where basic infrastructure is desperately needed. That is, to construct rural roads between farms and markets to increase connections between producers and consumers.
- iii) The state of the existing infrastructure is generally very poor because many governments are unwilling to spend the amount of money required to keep roads in basic repair. This compounds poverty and low food security levels in most states, impairing distribution of food, farmer connections to market, information exchange and intra-trade. In turn, poverty in these areas is increased because of isolation caused by lack of infrastructure.



## Rural Connectivity Agricultural Prosperity

Rural road connectivity is imperative for the country where 69 percent of population is rural. On the basis of study conducted by Ministry of Rural Development on socio-economic impact of PMGSY in Assam, Himachal Pradesh, Madhya Pradesh, Mizoram, Odisha, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal, the major findings were:

- Construction of the PMGSY roads has substantially *benefited the farmers*. Prior to the construction of the PMGSY roads, farmers found it difficult to sell agricultural goods in the bigger markets located far away from their villages.
- PMGSY road connectivity has led to a *better transport system* during all seasons. Farmers mentioned that the problem of not being able to access the markets during monsoon has been solved by the construction of the roads. This impact has been greatly felt in the states of West Bengal, Himachal Pradesh, Mizoram, Assam etc.
- The PMGSY roads have made it easier to transport agricultural inputs to villages which led some farmers to switch from food crops to cash crops (such as ginger, jute, sugarcane, sunflower).
- An increase in the number of families rearing goats/sheep for commercial purposes was mentioned by beneficiaries in states of Rajasthan, Himachal Pradesh and Uttar Pradesh.
- Many families had bought cycles after the construction of the road to be able to carry dairy products for sale to nearby towns.

## Central Government Initiatives

Since the era of planned development in 1951, India had a reasonably good railway system, a few ports and around 400,000 km of serviceable road network. Accessibility to villages was poor as only about 20 per cent of them had all-weather road links. The Government laid down a framework for accelerated growth through investments in irrigation, power, heavy industry and transport.

Side by side, stress was laid on provision of social infrastructure (education and health) and integrated rural development including agriculture. For social sector development, the Central Government has set up a National Committee on Rural Infrastructure under the Chairmanship of the Prime Minister with the objective of improving rural infrastructure in a time bound manner for overall rural development. A major thrust to development of rural roads was given at the beginning of the Fifth Five Year Plan in 1974 when it was made a part of the Minimum Needs Programme. In 1996, this was merged with the Basic Minimum Services (BMS) programmes. The works of village tracks were also taken up under several employment creation and poverty alleviation programmes of the Central and State Governments.

In addition to this, to give a boost to rural connectivity, a Rural Roads Programme known as the Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched in December 2000. Unlike the earlier programmes, the PMGSY is being implemented as a 100 per cent centrally funded scheme. As per the current guidelines, the PMGSY covers all habitations above 500 population to be provided with all-weather rural roads. In case of hills, deserts and tribal areas, the threshold is relaxed and covers all habitations above 250 population.

Targets of PMGSY	
Habitations with population above 1000 (500 in case of hill, NE states, deserts and tribal areas) (Targets as per Bharat Nirman)	Year 2009-10
Habitations with population above 500 (250 in case of hill, NE states, deserts and tribal areas)	Year 2014-15
Habitations with population above 250	Year 2021-22

*Pradhan Mantri Gram Sadak Yojana* (PMGSY) was launched in 2000 with the objective of connecting all habitations with the population of over 1,000 persons by 2003 and those with a population of 500 and above by the year 2007 through good, all-weather roads. As on 31st March,



### Targets and Achievements of PMGSY

Year	Target		Achievement			
	No of habitations to be connected	Length of Road to be completed (km)	No of habitations connected	No of habitations connected (per cent share to target)	Length of Road completed (km)	Length of Road completed (per cent share to target)
2005-06	7895	17454	8202	103.9	22891	131.2
2006-07	9435	27250	10801	114.5	30710	112.7
2007-08	12100	39500	11336	93.7	41231	104.4
2008-09	18100	64440	14475	80.0	52405	81.3
2009-10	13000	55000	7877	60.6	60117	109.3
2010-11	4000	34090	7584	189.6	45109	132.3
2011-12	4000	30566	6537	163.4	30995	101.4
2012-13	4000	30000	6864	171.6	24161	80.5
2013-14	3500	27000	6560	187.4	25316	93.8

Source: Annual Report, Ministry of Rural Development.

2014, project proposals for providing connectivity to 1,44,717 eligible habitations have been sanctioned (Total Eligible Habitations 1,78,184). The total cost of sanctioned projects, including the projects for upgradation of roads under PMGSY is Rs.1,82,560 crore. Against this, Rs.1,11,141 crore has been released till 31st March, 2014 including releases to the States, administrative costs etc. As reported by the States, till 31st March, 2014, a total of 3,99,979 km roads including upgradation have been constructed and all-weather connectivity has been provided to 97,838 eligible habitations.

Table 1 gives details about the targets and achievements of PMGSY over the years. Regarding number of habitations connected, it is seen that despite certain fluctuations between 2007-08 and 2009-10, the overall trend denotes achievement more than 100 per cent. Similarly, length of roads completed also shows more than cent per cent achievement, though there are few oscillations.

### Conclusion

The relation between agricultural growth and rural roads are intertwined. There is no

doubt that rural roads are vital for agro based industry and rural development, to create jobs and to make the country's growth more broad based. With the expansion of all-weather road network through PMGSY, social and economic change is witnessed beyond expectations. Though a watertight system to maintain this vast network is not in place, it is unlikely that village community would let it fall into disuse. The level of agricultural growth rate has a positive strong correlation with the overall development in general and the agricultural development in particular; the unequal distribution of infrastructure would result in regional imbalances affecting the welfare of the individuals. Thus, for increasing the agricultural contribution to GDP and provision of proper market for agricultural produce, proper networking and government initiation is required at right time through right means. Thus, rural road connectivity is the path for inclusive development of the country.

*[The author is Assistant Professor with the Centre for Economic Policy and Public Finance, Patna]*

### Six laning of Aurangabad – Bihar/Jharkhand Border – Barwa Adda section on NH-2

The Cabinet Committee on Economic Affairs has recently given its approval for the six laning of Aurangabad – Bihar/Jharkhand Border – Barwa Adda section on National Highway-2 in Bihar and Jharkhand.

The cost is estimated to be Rs.4918.48 crore including the costs of land acquisition, resettlement & rehabilitation and other pre-construction activities. The total length of the road will be approximately 222 kms.

This work will be under the National Highways Development Project (NHDP) Phase-V. The approval is in BOT (Toll) mode on Design, Build, Finance, Operate and Transfer (BOT/DBFOT) basis. The main objective of the project is to expedite the improvement of infrastructure in Bihar and Jharkhand and also in reducing the time and cost of travel, particularly for heavy traffic, plying on the Aurangabad – Bihar/Jharkhand Border – Barwa Adda section on National Highway-2.

The development of this stretch will also help in improving the socio-economic condition of the region and would also increase employment potential for local people.



## ENHANCE CONNECTIVITY TO BOOST RURAL TOURISM



Dr. Gracious James

Getting away from the rush and pressures of the city are reasons that people want to experience rural tourism. Rural Tourism is one of the fastest growing sectors in the tourism industry. The idea of relaxing in a beautiful setting or experiencing the traditional agrarian lifestyle is certainly still part of the attraction of rural tourism. The future of Indian tourism lies in focusing on rural tourism since it provides so much of diversity. A comprehensive strategy and regulatory framework for rural tourism development is urgently needed.

India is a magnum of diverse geography and cultures, offering 30 World Heritage sites, 25 bio-geographical zones and attractive beaches. The country saw arrival of 1282 million domestic and 22.57 million foreign tourists in the year 2013-14. Tourism in India accounts for 6.7 per cent of the GDP, and is the third largest foreign exchange earner for the country with 18.13 billion US dollars. It has been accorded a priority sector status in the 12th Five-year Plan.

### Contribution of Tourism

According to World Travel and Tourism Council (WTTC) the total contribution of Travel & Tourism to GDP was Rs.7, 642.5 billion (6.7 per cent of GDP) in 2014, and is forecast to rise by 7.5 per cent in 2015, and to 7.3 per cent per annum to Rs.16,587.2 billion (7.6 per cent of GDP) in 2025. In 2014 Travel & Tourism directly supported 23,024,000 jobs (5.5 per cent of total employment). This is expected to rise by 1.9 per cent in 2015 and by 2.2 per cent pa to 29,020,000 jobs (5.7 per cent of total employment) by 2025.

Table 1

Travel and Tourism –Total Contribution to GDP in India

	Percentage of GDP	Percentage growth
2010	6.69099	4.53362
2011	6.45118	3.85146
2012	6.54626	6.51788
2013	6.60824	5.14032
2014	6.74247	7.26835

Source: WTTC

Table 2

Travel and Tourism - Direct Contribution to Employment in India

Year	Thousands of jobs	Percentage share
2010	21717.9	5.55
2011	22045.7	5.53
2012	22202.6	5.47
2013	22471.2	5.44
2014	23024.1	5.48

Source: WTTC

### Rural Tourism

Tourism is often viewed as being multidimensional, possessing physical, social, cultural, economic and political characteristics. Rural tourism can help in shaping our society. The basic concept of rural tourism is to benefit the local community through entrepreneurial opportunities, income generation, employment opportunities, conservation and development of rural arts and crafts, investment for infrastructure development and preservation of the environment and heritage. Getting away from the rush and pressures of the city are reasons that people want to experience rural tourism. Rural Tourism is one of the fastest growing sectors in the tourism industry. The idea of relaxing in a beautiful setting or experiencing the traditional agrarian lifestyle is certainly still part of the attraction of rural tourism.

In recent years, there has been an increased realization that the tourism growth potential can

be harnessed as a strategy for Rural Development. With 69 per cent population living in rural India, and almost 6.5 million village units spread across the country, India foresees itself as a strong platform for harnessing rural tourism. The geographical diversity of India makes it a unique spot for harnessing rural tourism which can include tourist sites like desert, mountains, plains, plateaus, islands and coasts in different regions. The country is also rich in heritage and offers 30 World Heritage sites. This will not only preserve our culture and heritage but will also generate employment in the villages since it can be leveraged to provide skill development in tourism related job roles such as that of guide, driver, cook, housekeeping and hospitality to the tourists.

### Rural Tourism Entrepreneurship

The underlying idea behind rural tourism should be to create, preserve and enhance the stake of local communities over locations for common good, and not for the benefit of any individual or firm. Rural tourism entrepreneurship needs to be focused on the Indian perspective for six important reasons:

1. To facilitate the use of local resources (both human and non-human).
2. To create additional scope of employment for every type of rural labour.
3. To achieve a better standard of living and increased income sources.

4. To explore the possibilities of forward and backward linkages through vertical and horizontal integration of labour.
5. To preserve and maintain the traditional culture and value system along with refinements on these via the assimilation process of tourist linkages.
6. To grow consciousness of eco-biodiversity.

Considering all these aspects, rural tourism entrepreneurship generation should be a prime objective of the governmental initiatives.

### Government Initiatives

Travel and Tourism in India is facilitated by the joint efforts of at least ten Ministries. Each of them has a special role and its contribution to the industry. In many functions they work in tandem to achieve the goals.

### Ministry of Tourism

The tourism industry has experienced tremendous growth because of growing economy, higher disposable incomes, and improving infrastructure. The government has supported air connectivity, projection of states and increasing awareness, domestic and internationally, availability of trained guides, reasonably priced hotel accommodation, better tourism infrastructure, etc. The Tourism Ministry has been allocated

**Table 3**  
Measures taken by three central ministries

Ministry of Tourism	Ministry of Civil Aviation	Ministry of Railways
<ul style="list-style-type: none"> <li>• Launch of the Visa on Arrival (VoA) enabled Electronic Travel Authorisation (ETA) scheme</li> <li>• New schemes launched PRASAD and Swadesh Darshan</li> <li>• Launch of Swachh Bharat, SwachhSmarak and clean India campaign</li> <li>• Rationalization of taxes, tax holidays, etc.</li> <li>• Investment in tourism infrastructure such as hotels, MICE centers, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Liberalized FDI policy with 49 per cent investment in domestic airlines allowed</li> <li>• Greenfield airports being constructed along with modernization of brownfield airports in non-metro towns</li> <li>• Formulation of a policy on for promotion of regional and remote area connectivity in India underway</li> <li>• Seaplane operations to be encouraged for tourism</li> <li>• Hub policy being formulated to make some airports as Hub and Spoke model</li> </ul>	<ul style="list-style-type: none"> <li>• Approval of high speed trains on 9 routes</li> <li>• Improvement of station infrastructure such as introduction of lifts and escalators and food courts</li> <li>• Launch of grievance handling system and CCTVs on trains</li> <li>• Launch of mobile ticketing facility for passengers</li> <li>• Introduction of Adarsh Station scheme to provide basic facilities</li> <li>• Launch of Swachh Rail Mission</li> </ul>

Source: FICCI



Rs. 1,573.07 crore for 2015-16, up by 33 per cent over last fiscal's allocation in the union budget. The allocation to tourism in the last five years is shown in the figure below.

**Table 5**  
**Budget Allocation to tourism sector**

Year	Budget Allocation (Rs. Crore)	Percentage Growth
2011-12	1110.96	-
2012-13	1210.00	9
2013-14	1297.55	7
2014-15	1182.99	-9
2015-16	1573.07	33

### Key Central Government Schemes for Promotion of Rural Tourism

- **Swadesh Darshan:** Launched in pursuance of the budget announcements of 2014-15, SwadeshDarshan Scheme aims at integrated development of circuits having tourist potential in a planned and prioritized manner, promoting cultural heritage of the country, development world-class infrastructure in circuit destinations, pro-poor tourism approach, promoting local arts, handicrafts, cuisine and generating employment. Eight projects have been sanctioned under SwadeshDarshan during the year 2014-15 at a total cost of Rs.582.40 crore. Under this Scheme for Integrated Development
- of Tourist Circuits around Specific Themes, twelve Thematic Circuits namely North-East India Circuit, Buddhist Circuit, Himalayan Circuit, Coastal Circuit, Krishna Circuit, Desert Circuit, Tribal Circuit, Eco Circuit, Wildlife Circuit, Rural Circuit, Spiritual Circuit and Ramayana Circuit have been identified for development, which among other things, cover remote villages and small and medium towns.
- **National Mission on Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASAD):** This new Scheme has been launched for the development and beautification of pilgrimage sites to tap the growth of domestic tourists driven by religious sentiments and to augment tourism infrastructure at places of pilgrimage to facilitate pilgrims/tourists. In the first phase, cities namely Amritsar, Kedarnath, Ajmer, Mathura, Varanasi, Gaya, Puri, Dwarka, Amravati, Kanchipuram, Vellankanni, Guwahati and Patna have been identified for infrastructure development. Rs 100 crore and Rs 600 crore have been allocated for Prasad and SwadeshDarshan schemes, respectively, to develop tourist destinations of global standards.
- **Converting islands and light houses into Tourist attractions:** The Ministry of Tourism, as advised by the Ministry of Home Affairs, has constituted a Sub-Group of Task Force comprising representatives from Ministry of Information & Broadcasting; Ministry of Environment, Forests and Climate Change; Ministry of Shipping; Archaeological Survey of India; Coastal India Development Council; Indian Coast Guard and Maritime Board of Government of Gujarat to provide inputs for identifying islands for holistic development, indicate islands with historic places, and with tourism potential for holistic development. An Interim Report on holistic development of islands has been submitted to the Ministry of Home Affairs. As per this 78 lighthouses have been identified for tourism development of which 44 are mainland lighthouses and 34 are island lighthouses.
- **Launch of Incredible India Helpline:** The Ministry of Tourism has launched a 24x7 'Incredible India Help Line' in December, 2014 to provide the tourists with valuable information and to guide them during emergencies. It is intended to provide a sense of security to the tourists. The service is available toll free on telephone no. 1800111363 or on a short code 1363.

- **Bi-Lingual Website of Ministry of Tourism:** The Tourism Minister launched the revamped official website of the Ministry <http://tourism.gov.in/> which was made bilingual (English & Hindi). This Administrative website of the Ministry of Tourism contains the activities and information of all the divisions of the Ministry including the web based E-Recognition System for recognition of Travel Trade Service Providers and Approval and Classification of Hotels.
- **'Incredible India' mobile application:** The ministry of tourism has launched the 'Incredible India' mobile application that will assist international and domestic tourists to access information about recognized tourism service providers namely approved inbound tour operators, adventure tour operators, domestic tour operators, tourist transport operators, travel agents, regional level guides, classified hotels available in respective cities / tourist centres. This mobile application has been developed as part of the initiative of the new government in taking important positive

decisions, especially, affecting the general public. This new application developed by the National Informatics Centre (NIC) will help tourists in seeking services from government of India recognized service providers and receive quality and reliable services from them. Incredible India Mobile Application (IMA) is available for the Android Phones on the Google Play store and for iPhone this will be available in App Store.

- **Craft and Culture Villages:** Banking on the rich traditions of art, craft and culture in India's villages and aiming at the sustainable tourism development, 50 villages have been earmarked for tourism promotion. These villages have been identified based on their core competency in handicrafts, handlooms and culture, close to existing destinations and circuits. The ministry of tourism will be developing them for enhancing the tourist experience.
- **E-Tourist Visa Scheme:** Tourist Visa on Arrival (TVoA) enabled by Electronic Travel

**Table 5 Rural Tourism Projects Sanctioned by the Ministry of Tourism**

**Year 2012-13:**

**(Rs. in lakh)**

Sl. No.	Name of the State	Amt. Sanctioned	Amt. Released	Amt. Utilised	No. of Rural Tourism sites sanctioned
1.	Arunachal Pradesh	20.00	16.00	0.00	1
2.	Jammu and Kashmir	51.00	40.80	17.00	3
3.	Maharashtra	49.08	39.26	39.26	1
4.	Meghalaya	50.00	40.00	0.00	1
5.	Mizoram	62.70	50.16	0.00	2
6.	Nagaland	203.34	40.67	0.00	6
7.	Uttarakhand	0.17	0.03	0.03	1
	<b>Total</b>	<b>436.29</b>	<b>226.92</b>	<b>56.29</b>	<b>15</b>

**Year 2013-14:**

**(Rs. in lakh)**

Sl. No.	Name of the State	Amt. Sanctioned	Amt. Released	Amt Utilised	No. of Rural Tourism sites sanctioned
1.	Jammu and Kashmir	9.28	7.10	0.00	15
2.	Punjab	0.16	0.13	0.05	1
3.	Tripura	0.00	0.00	0.00	1
	<b>Total</b>	<b>9.44</b>	<b>7.23</b>	<b>0.05</b>	<b>17</b>

**Year 2014-15:**

**(Rs. in lakh)**

Sl. No.	Name of the State	Amt. Sanctioned	Amt. Released	Amt Utilised	No. of Rural Tourism sites sanctioned
1	Jammu & Kashmir	131.05	26.20	0.00	4



Authorization (ETA), presently known as E-Tourist Visa scheme was launched on November 27, 2014. **At present e-Tourist Visa facility is available for citizens of 113 countries arriving at 16 airports in India. During January-November, 2015 a total of 3,41,683 tourist arrived on e-Tourist Visa as compared to 24,963 during January-November, 2014. This high growth may be attributed to introduction of e-Tourist Visa for 113 countries as against coverage of earlier TVoA scheme for 12 countries.** The facility is operational at nine international airports including all four metropolis and Kochi, Bengaluru, Hyderabad, Thiruvananthapuram and Goa. It shall facilitate the tourists to travel for tourism, short term medical treatments or casual visit and have a short stay of 30 days.

#### **Central Financial Assistance (CFA)**

Ministry of Tourism operates various schemes through which Central Financial Assistance (CFA) is provided to States/UTs for overall development and promotion of tourism.

#### **Rural Connectivity**

Connectivity is crucial in tourism business. To make the growth in the tourism sector equitable and inclusive, Ministry of Civil Aviation is aiming to provide connectivity to all areas in the country. Apart from development of low-frill airports and modification of Route Dispersal Guidelines, the Government is in the process of formulating a policy for promotion of regional and remote area connectivity in India incentivising the Indian carriers to operate on these routes including code sharing and seat credit mechanism.

#### **Rail Connectivity for tourists**

The Indian Railways along with the Indian Railway Catering and Tourism Corporation provides a wide range of luxury rail travel in India. There are four tourist trains and three categories of superfast passenger rail services operated by the Indian Railways. Indian Railways has recently decided to introduce luxurious Anubhuti Coaches in regular trains, which would be similar to coaches in luxury trains like Maharaja Express or Palace on

Wheels. The Maharajas' Express has bestowed the "World's Leading Luxury Train" award at the World Travel Awards for three consecutive years in 2012, 2013 & 2014. The Maharajas' Express has redefined the luxury travel experience by offering guests the opportunity to explore fabled destinations providing a glimpse of rich cultural heritage of Incredible India. The Palace on Wheels launched by the Indian Railways to promote tourism in Rajasthan, has been highly popular since its launch. The train service was refurbished and re launched in August 2009 with a new decor, itinerary and cuisine. The Golden Chariot connects the important tourist spots in the states of Karnataka, Kerala, Goa, Tamil Nadu and Puducherry.

#### **Challenges of tourism in rural areas**

- Planning constraints can be a major barrier to the expansion and diversification of the rural tourism product. Guidance, collection and dissemination of evidence and research to support the case for rural tourism development are crucial and rural tourism growth must be facilitated in the Government's Major Planning Framework.
- Many problems that rural tourism business and related stakeholders face are shared with urban equivalents but solutions need to be tailored to take account of the different operating environment. This includes the dispersed nature of rural communities and businesses within them, access to services and support, visitor access issues and vulnerability to increasing prices in fuel, energy and food.
- Transport in rural areas continues to be a challenge for tourism and local communities. Trips to the rural areas are more likely to be taken by car as rural areas have fewer alternatives; public transport provision is a major challenge and perceived as being expensive.
- Rising fuel prices place rural destinations at a disproportionate vulnerability due to more limited alternatives and, sometimes, distant location from urban populations.
- The vulnerability of rural tourism to current and expected increasing fuel, energy and food prices

compromises the profitability and resilience of rural tourism.

## Conclusion

The future of Indian tourism lies in focusing on rural tourism since it provides so much of diversity. A comprehensive strategy and regulatory framework for rural tourism development is urgently needed. Given the geographical and cultural diversity of India, the country has a plethora of opportunities to harness rural tourism. If implemented and promoted properly, rural tourism projects can become a driver of economic growth by generating employment for the youth. It keeps the potential of addressing issues such as poverty, empowerment of women and strengthening the economic status of the rural people. With regard to connectivity

improvement, regional connectivity is the need of the hour. The speedy launch of the proposed high speed passenger trains, constructing new and improving existing rural roads, identifying air strips to be converted into small commercial airports, converting existing domestic airports into international airports and setting up heliports in select key states which experience more foreign tourist inflow are crucial. Inland waterways can be another area to explore for improving the connectivity between cities and states. A Government Policy of Rural Tourism Development is a prime necessity with a well designed policy framework.

*[The author is Asst. Professor & Research Guide, Govt. Arts Collage, Thiruvananthapuram, Kerala]*

### **6.5% Growth in Foreign Tourist Arrivals in November 2015 Rs. 11,610 Crore Foreign Exchange Earning**

Ministry of Tourism compiles monthly estimates of Foreign Tourist Arrivals (FTAs) on the basis of Nationality-wise, Port-wise data received from Bureau of Immigration (BOI) and Foreign Exchange Earnings (FEEs) from tourism on the basis of data available from Reserve Bank of India. Following are the important highlights regarding FTAs and FEEs from tourism during the month of November, 2015.

- FTAs during the Month of November 2015 were 8.15 lakh as compared to 7.65 lakh during 2014. There has been a growth of 6.5% in November 2015 over the previous year.
- FTAs during the period January- November 2015 were 71.03 lakh with a growth of 4.5%, as compared to the FTAs of 67.94 lakh with a growth of 10.5% in January- November 2014 over January- November 2013.
- The Percentage share of Foreign Tourist Arrivals (FTAs) in India during November 2015 among the top 15 source countries was highest from USA (15.76%).
- The Percentage share of Foreign Tourist Arrivals (FTAs) in India during November 2015 among the top 15 ports was highest at Delhi Airport (31.55%) followed by Mumbai Airport (17.71%).

#### **Foreign Exchange Earnings (FEEs)**

- FEEs during the month of November 2015 were Rs.11, 610 crore.
- The FEEs in rupee terms during November 2015 registered a growth of 1.6% over November 2014 as compared to the growth of 7.2% in November 2014.

# CONNECTING FARMERS THROUGH RURAL POST OFFICE LINKED EXTENSION MODEL

S. K. Dubey, Sujit Sarkar and team

The Indian Postal Service, with 1.55 lakh post offices (staff strength of 4.75 lakhs) of which 1.39 lakh (89.76 per cent) are located in the rural areas, is the most widely distributed post office system in the world. On an average, a Post Office serves an area of 21.21 sq. km and a population of 7175 people. More than 2500 farmers from five states already availed the technological services through post office. Eight major improved wheat varieties and nine popular rice varieties (both basmati and non-basmati) were disseminated in five states based on the farmers demand.

India is an agrarian country represented by heterogeneous socio-cultural and economic condition with majority of the population deriving their livelihood from agricultural avocation. This diverse nature of India, in terms of its agro-climatic and socio-economic variability, call for agricultural extension approach that may be context and situation specific. Efforts have been made from time to time to raise the productivity of farmers through different extension interventions, but we are still with poorly met goals. If we analyze critically, extension is mainly concerned with two types of services-one is information service and secondly the technology delivery. It is high time to analyze the plight of extension education under changing agricultural scenario to address the issue of technology delivery.

In India, currently the extension worker to farmer ratio is very wide i.e. 1:2000 whereas in case of China and Vietnam it is 1:280. The requirement of field level extension worker is estimated to be about 13-15 lakh, against which the present availability is only one lakh. It is on record that about 40 per cent of the field level extension workers are not in position. The percentage may further increase as at least 25 per cent extension workers are in administrative or supervisory position who are not directly in touch with farmers. With remaining extension workers at least 50 per cent of the time goes for administrative work, official correspondence, works of health department, census works, *panchayat* departments works i.e. in non-farm activities. Majority of the states have their staff up to Block level. Only six states have their staff up to the village level and 11 states have extension manpower up to Panchayat level. In India, out of 143,863 positions in the Department of Agriculture, only 91,288 posts are filled. On an average extension services reach only 6.8 per cent of farmers of the

country. The NSSO survey (2005) also revealed that 60 per cent of the farmers surveyed did not access any modern farm technology that year. We have 21,000 agricultural scientists in public sector and about 70 per cent of them involved in research on different crops and coming out with different novel technology-improved varieties, fertilizer, pesticide, machineries etc. but failed to reach the needy farmers on account of shortfall in extension agent and lack of effective delivery mechanism. With rapidly expanding population, dwindling extension staff, and declining budget, re-thinking the way farm technology is delivered to the farmers has become necessary.

Keeping in mind the above mentioned challenges, technology dissemination using village Post Office to distant farmers can be established as the viable alternative. The goal of this innovative approach is to develop and institutionalize the alternate technology delivery system that is built on three interrelated concept viz. to develop an effective public extension system that is amalgamation of both top down and bottom up extension system, to establish linkages with local institutions for capacity building and financial sustainability of the same.

## Post-Office as medium to deliver technology

The Indian Postal Service, with 1.55 lakh post offices (staff strength of 4.75 lakhs) of which 1.39 lakh (89.76 per cent) are located in the rural areas, is the most widely distributed post office system in the world. On an average, a Post Office serves an area of 21.21 sq. km and a population of 7175 people. Owing to its far-flung reach and its presence in remote areas, the Indian postal service is also involved in other services such as small savings banking and

financial services. Rural branch post office caters to 5-15 villages and the branch post masters (BPM) mostly are farmers. During the last 10 years, there was sharp decline (about 50 per cent) in the mail and delivery of ordinary post. Collaborative activities with other agencies (bank, investment agency, insurance departments) also increased by 15-20 per cent.

The trend analysis of post office works showed that during last 10 years (with popularization of mobile), there was sharp decline (about 50 per cent) in the mail and delivery of ordinary post. This has happened mostly after the accessibility and affordability of mobile phone by the rural people and hence, the use of postal communication system was reduced to a greater extent. Similarly, the sale of postal stamp and revenue stamp had declined to the same extent. Number of saving account (10 per cent) and recurring deposit holders (50 per cent) showed increasing trends. This may be mainly because of the fact that Government of India has implemented various employment generating programmes which ensured the sustained income for rural people. Hence, saving in the form of recurring deposit (RD) showed increasing trend. The collaborative activities with tie-up with other agencies like bank, investment agency, insurance departments, etc had also increased (15–20 per cent). As a matter of fact that many private players have ventured into basic postal services through couriers and also the sale of revenue stamps has been outsourced by the postal department. Moreover, this particular finding helped to conclude the possibility of establishing and sustaining the linkage with post offices. From the experience of Republic of Korea, postal services were found successfully utilized for e-commerce and farming particularly fish farming for marketing of the produce using ICT enabled technologies.

### Dissemination of Crop Varieties

A project on post office linked technology dissemination approach was experimented as the pilot project in 2009 at Sitapur District of Uttar Pradesh and PRA exercise was conducted to identify the major crops, topography, soil health, climatic pattern and choice of farmers. A meeting was held with Village Panchayate, Branch Post Masters, and villagers to sensitize the community about the programme. Out of seven selected post offices, the cluster of villages under Manwa and Ambarpur post offices represented lesser resource endowed situation like sandy loam soil with partial irrigation

facility through tube-well. Participatory discussion with farmers, therefore, helped to identify the priority crops for *kharif* (mainly rice, *bajra* and long duration pigeonpea), *rabi* (wheat and mustard) and summer (vegetables in some patches). Similarly, the catchment area under five post offices namely Gandhauri, Neelgaon, Behma, Rehua and Chaudia Manpara represented fully irrigated situation (through canal as well as tube well) with productive loam soil. Hence, the major crops identified for these areas were paddy and *bajra* in *kharif*; wheat and mustard in *rabi*; and vegetables like bottlegourd, okra, pumpkin, brinjal in summer as well as *kharif* seasons. Besides seeds, the information packages were also sent to the farmers by post. By seeing the overwhelming response from the farmers and Branch Post masters, it was decided to expand the project in for more states (West Bengal, Bihar, Jammu and Kashmir, Rajasthan and Madhya Pradesh). Similarly, popular crop varieties and technologies were disseminated to all the states based on the popular cropping pattern of the respective villages.



More than 2500 farmers from five states already availed the technological services through post office. Eight major improved wheat varieties and nine popular rice varieties (both basmati and non-basmati) were disseminated in five states based on the farmers demand. Besides rice and wheat, other popular varieties like Pusa Jaikisan, Pusa Bold of Mustard; Pusa 383, Pusa 443 of Bajra; Pusa Naveen of Bottlegourd, Pusa Viswas of Pumpkin, were disseminated. Over the years, the project expanded both horizontally and vertically. Thus, the confidence and expectation of farmers from public sector technologies also steered up. Now, other technological services like bio-fertilizer, bio-pesticides, pusahydrojel, BGA, etc besides improved crop varieties have also been disseminated from

the nucleus institute i.e. ICAR-Indian Agricultural Research Institute, New Delhi.

### Effect on Crop

In Sitapur, two wheat varieties HD 2967 and HD 2733 were distributed for last five years. These two varieties were highly popular among the farmers of Sitapur District mainly due to its high yield potential than the conventional varieties. Farmers reported an average yield of 58.5 qt/ha of HD 2967 variety and 52 qt/ha for HD 2733 variety which were much higher than the yield of local check (42 qt/ha).

Improved crop varieties disseminated through post office immensely impressed the farmers of Buxar, Bihar where most of the farmers are small and marginal without any access to modern technologies. Based on local agro-climatic condition, 3 wheat varieties, 3 rice varieties, 1 mustard variety and chick pea variety were selected for this region. The yield of both the wheat varieties HD 2967 (45 qt/ha) and HD 2733 (47.5 qt/ha) were significantly higher than the yield of local check (38 qt/ha). In the case of rice, Pusa 44 recorded maximum average yield (46 qt/ha). Performance of pusa 2511 and JD 13 were also comparatively better than the prevailing rice varieties. PusaMahek of Mustard reported yield of 13.8 qt/ha while farmers harvested 20 qt/ha from Pusa 547 (desi) of Chick Pea. It was a win-win situation for farmers, KVK, Post Office and IARI. Few farmers reported they only heard about Pusa varieties in their life without experiencing and accessing it. Now through this initiative, they are growing pusa varieties and getting more yield and income. It was beyond their dream. Similar results was also obtained from Sirohi district of Rajasthan; Kathuaand , Jammu and Kashmir and sheopur from Madhya Pradesh.

### Economic efficacy of the model:

The economic viability of Post Office linked extension model was assessed considering the cost of cultivation and net income from crop. The seed was distributed free of cost under the project. However, we consider the actual cost of seed if they purchased to calculate the net benefit from improved varieties of ICAR-IARI. It was estimated that from 1000 mt<sup>2</sup> area, a farmer could make net profit of Rs. 3171 with B:C ratio of 1.92 from wheat while in case of Mustard and Bottlegourd the B.C ratio was 4.07 and 2.71 respectively. The findings proved that the model was highly economically viable even if farmers bear the full cost of seed. The major factor

for this economic efficacy is the high yield potential of improved varieties.

### Strength and Weakness of the Post office Linked Extension Model

It was observed that farmers identified mostly six (6) strengths of this new extension approach. Among these, "covering distantly located small and marginal farmers" was judged as the major strength of this model. This may be because of the fact that earlier it was beyond the capacity of small and marginal farmers to avail the improved varieties from ICAR-IARI, New Delhi due to long distance. The second and third major strength were "possibility of timely delivery of seeds" and "cost effectiveness of the model" followed by "Technology backstopping through KVKs", "Acting of village post master as local extension agents" and "advisory service through post office".

Farmers also reported some weaknesses of this approach based on their experiences in last five years. Prominent among them was "poor monitoring". The second and third major weaknesses were "lack of knowledge of village post master" and "low incentive to village post master". In order to encounter these weaknesses, collaborations with nearby KVKs and other institutes has been strengthened. KVKs are made responsible for capacity building of the post masters and farmers on improved farming practices besides seed multiplication. The activities of KVK will be monitored by the respective ICAR-ATARI.

### Opportunity and Threat of the Model

The partner farmers expressed that the above mentioned weaknesses can be addressed by exploiting the potential opportunities. The major perceived opportunity was "Establishing linkages with KVKs, NGOs and University or research institute" followed by "high demand of improved varieties" and "high interest shown by branch post master" came out as the most agreed strength.

The farmers also perceived some major threats which need to be taken care of while exploring the opportunity. "Local village politics" was perceived the major threat to the model. It was reported that distribution of the seeds was not objective and uniform among the farmers or villages. Only few powerful or politically active farmers were getting the seeds in some locations. So, they demanded effective monitoring of the distribution of seed, conducting awareness campaign before each cropping season

so that every farmer may know about it. Then, farmers and post masters also proposed the idea of putting demand for seed directly to ICAR-IARI, New Delhi through a toll free number and then delivering it through post office. Other major threat were “nepotism shown by postal staff in distributing seed among the farmers” and “change in postal department policy”. So, there is a need of developing a monitoring mechanism on the distribution of seed to effectively reach remote small and marginal farmers. The third threat was external factor and may be solved by reaching an agreement with postal department.

### Future Policy Implication

The new experimented extension approach has the potential to solve the present crisis in state extension department. Most of the states are not having extension agent or full-fledged manpower to deliver the technology at farmers’ doorstep. Moreover, the present revolution in extension mechanism through KVK was hardly adequate to serve a whole district or all the small and marginal farmers. So, there is a need of medium of technology delivery from research centre to the beneficiary

farmers. The findings of Post office linked extension model proved the viability of considering post office as medium of technology delivery and branch post master as Para extension officers. However, it is not possible for a single research center to cater to the need of crores of farmers. Hence, there is a need of technology (seed) multiplication institution to meet the demand of large numbers of farmers. KVKs, therefore, may act as seed multiplication center for multiplying the improved crop varieties in their instructional farm and then may disseminate it to all the farmers of the district through post office. The project can be extended to other crops and research center based on the cropping pattern of the area. ICAR may select some key research centers as lead center for major crops and technologies and then may sign MOU with postal department to provide agro-advisory service all over the country. This may lead to the achievement of long desired goal of evergreen revolution and food security.

*(The authors including R.R Burman, J.P Sharma, K Vijayaraghavan and H S Gupta are agriculture scientists with the Indian Agriculture Research Institute, New Delhi)*

### Data on more than 55 Lakh Artists Collected for Cultural Mapping of India

The project of ‘Cultural Mapping of India’ under which data of artists shall be collected, has been initiated by the Ministry of Culture in order to carry out a survey on Cultural Topography of the country. A number of meetings of experts has been held since 15th May, 2015 in order to conceptualize the project. The work of entry of data of artists has been assigned to Centre for Cultural Resources and Training (CCRT), New Delhi. So far data on more than 55 lakhs artists has been collected. The Ministry is also taking the help of State Governments and other organizations to collect the data of artists.

Under this scheme, a Web Portal would be developed through National Informatics Centre (NIC) for collection of data directly from artistes online for cultural mapping, which will serve as an Artist Repository and can be used in future for the purpose of providing grant-in aid under various cultural schemes administered by the Ministry. In order to generate fund and to run the Mission, a Draft Mission Document has been prepared by a Sub-Committee of Experts constituted for this purpose. Once the mission document of Cultural Mapping of India gets finalized, this will be sent for consultation to NITI Aayog and other Ministries.

The mandate of Ministry of Culture is to preserve, promote, explore and share India’s culture and heritage along with its ethos and values for the benefit of mankind. In pursuance of this vision, among others, Ministry has been administering a few finance-based schemes to identify, nurture hand-hold and train the upcoming artists on a sustained basis. This is carried out by way of grant of scholarships, fellowships, pensions and other forms of grants/assistance. With a view to reach every nook and corner of the country; there is a need to have data-base of such art forms and artists. This could consolidate the data at one place in a systematic manner and help to streamline and rationalize various financial grant schemes being implemented by the Ministry for artists and cultural organizations and ensure effectiveness, transparency and value for money.

## SOUTH ASIAN GAMES-2016 SPORTS EXTRAVAGANZA IN NORTH EAST

Samrat Paul

At a time when the Government of India is trying to push for greater connectivity, the hosting of the SAF Games at the two north eastern states offers an opportunity to bridge the urban-rural divide.

A sport or a sporting event has the potential to go beyond the boundaries drawn. A competition may be held within the parameters governing the rules of the game, but sports have the power to take the big leap that transcends cultural differences and bring people together.

Records will be broken, new stars will be born and athletes from all over South Asia will compete for glory. But there will be an invisible star which will shine the brightest when the sun is up – the setting of the Games, Northeast.

The region is set to roll out the red carpet for the top athletes of the South Asian countries when twin cities of Guwahati and Shillong host the 12th edition of the South Asian Games in Feb, 2016.

India has already begun the final countdown to the biennial event after more than two decades since the country had hosted the tournament in Chennai (erstwhile Madras city of Tamil Nadu) in 1995. Kolkata (erstwhile Calcutta) was the first city in India to host the Games in 1987.

The forthcoming edition is special for more reasons than one. It's the first time a non-metro city in India is hosting the multinational multi-sport event. That the venue chosen for the prestigious South Asian Games is Guwahati & Shillong – cities from North East which often lose out to their more popular big brother cities in the country comes as a pleasant but welcome step in the right direction.

It will be for the first time that Assam and Meghalaya will host an international event of this stature and it augurs well with India's neighbourhood first policy as it is likely to enhance people-to-people connectivity and youth links among the eight participating South Asian countries.

At a time when the Government of India is trying to push for greater connectivity, the hosting



of the SAF Games at the two north eastern states offers an opportunity to bridge the urban-rural divide. It is in tandem with India's policy of shared prosperity and security with the South Asian countries on the basis of greater

connectivity, closer cooperation and broader contacts to promote closer ties in the region.

As Guwahati and Shillong hog the limelight, the hosting of the Games – popularly known as the Olympic Games of South Asia -- will open the door for Northeast India to the rest of the country and a wider audience of the world.

The Commonwealth Games 2010 had changed the hospitality and infrastructure landscape of Delhi and NCR and enhanced its connectivity immensely and it is hoped that the SAF Games will provide a similar push to the development of the northeastern region by creating more socio-economic opportunities for the rural people. Well-equipped infrastructure is a must for enhanced rural connectivity and SAF Games is likely to create that infrastructure. Hopefully it will boost employment and tap into the potential of rural India to boost economic activities.

Around 3307 athletes and officials will take part in this 12-day sporting event -- surpassing the 2,000 approx athletes who had participated in 2010 -- in 23 disciplines from Pakistan, Sri Lanka, Bangladesh, Nepal, Bhutan, Afghanistan and Maldives, apart from regional giant India who have been champions in all 11 previous editions.

Sports fever has already gripped the Northeast region with hosts Guwahati and Shillong busy with their last minute touch up to ensure a smooth and



successful Games which will be held from February 6 to 16. It will not only bring the Northeast region to the mainstream but also boost the morale of the local sportspersons, besides giving a big boost to the region's economy.

The Mascot of the Games 'TIKHOR', a rhino calf as a sharp, naughty, sporty, and modern boy, have already been selected, while the logo designed by Abhijeet Krishna of NIFT Patna, will be adorned with eight petals representing the countries participating in the Games.

Expectedly hosts India will put up maximum number of athletes and officials in the Games with around 519 people descending to the venues for the event. Sri Lanka and Bangladesh too will be sending big contingent comprising 400 plus athletes and officials. On the other hand, Bhutan, with 87 athletes, will have the smallest contingent among the participating nations.

These athletes will compete in 23 disciplines, including archery, athletics, badminton, basketball, boxing, cycling, football, handball, hockey, judo, kabaddi, kho kho, shooting, squash, swimming, table tennis, taekwondo, tennis, triathlon, volleyball, weightlifting, wrestling and wushu.

While few countries like Nepal and Pakistan have announced teams for some of the disciplines in the SAF Games, India has named its squash and Tennis squad so far. It will be Saurav Ghosal and Joshna Chinappa who will spearhead India's campaign in squash. The men's squad also comprises Harinder Pal Sandhu, Kush Kumar and Ravi Dixit, while the women's team consists of Chinappa, Dipika Pallikal, Sunayna Kuruvilla and Akanksha Salunkhe.

Similarly, in Tennis, which has been a late addition to the Games, men's team comprises Saketh Myneni, Ramkumar Ramanathan, Sanam Singh,

Vijay Sundar Prashanth, Purav Raja, Divij Sharan, while Ankita Raina, Prerna Bhambri, Rishika Sunkara, Natasha Palha, Prarthana Thombare, Sharmadaa Baluu and Coach/Captain: Shalini Thakur Chawla will spearhead the women's brigade.

Before the action starts, all eyes will be on the spectacular opening ceremony when Prime Minister Narendra Modi opens the South Asian Games at the Indira Gandhi Athletics Stadium, Sarusajai Sports Complex in Guwahati on 5th February. Shillong too will have its opening ceremony at the Jawaharlal Nehru Sports Complex on 6th February while Guwahati will have the privilege of hosting the closing ceremony on 16th February.

India has been the reigning Champions ever since the Games was first held in Kathmandu, Nepal in 1984. With a whopping 900 Gold medals, 542 Silver and 286 bronze, India is way ahead of second placed Pakistan in the all-time medal table.

During the last edition, India had bagged a staggering 175 medals including 90 gold medals. Pakistan narrowly beat Bangladesh in gold medals count with 19, while the host Bangladesh captured 18 golds including the region's most popular and prestigious football and cricket titles.

In Athletics, India had the biggest medal haul -- 10 golds, 11 silver and 8 bronze -- out of the six countries which reached the medal table, closely followed by Sri Lanka with 8 golds during the 11th Games that took place from 29 January to 8 February 2010 in Dhaka.

Similarly, India has dominated in Archery, Badminton, Cycling, Kabadi, Shooting, Swimming, Table Tennis, Weightlifting, Wrestling and Wushu and will continue their rampaging run in the disciplines during the 12th Games.

In Archery, India had won all 4 gold medals in the men's and women's events, while in Badminton India a clean sweep, clinching all 7 gold ensured medals in both men's and women's events. In shooting, our marksmen hit the bulls eye in both Men & Women event, as India bagged 19 out of 22 gold medals along with 8 silver medals.

Our swimmers made a huge splash, winning 11 out of 12 gold in men's event and 5 out of 7 in women's event. They also won 5 silvers in the men's and 2 in the women's category. Similarly, India made a clean sweep in Table Tennis by winning





all the 7 gold medals, while Indian men wrestled their way to three gold and a silver in Wrestling and pocketed 3 gold and a silver in Weightlifting. Even in a sport like Wushu, India won 4 gold and 3 silvers. In Cycling, India dominated with 3 gold and a silver while maintaining their supremacy in Kabaddi by winning gold in both men and women event.

Among other sports, India have done well in boxing with the country winning three 3 gold medals, while in Volleyball, the hosts had won the gold in men's event beating Pakistan.

In Football, India have won the gold thrice in 1985, 1987 and 1995 in men's event, besides winning silver twice in 1993 and 2004 and bronze in 1989 and 1999. In the Women's event, India clinched the gold in the last edition beating Nepal in the finals. However, the men cut a sorry figure when they lost the bronze medal to Maldives in 2010.

It will be an enticing clash in Hockey as India will look to avenge their 2010 defeat against arch-rival Pakistan to lay their hands on the gold medal.

Also in Basketball, Afghanistan won the gold medal by beating India in the final in the Mens event in 2010 and India will look to settle the score this time. Similarly, Pakistan clinched the gold beating India in the final of Handball Men's event and Squash event and the hosts will be itching to settle scores this time around.

India have fared poorly in Karate and Taekwondo and they would want to improve their medal tally in the sport.

Even though there were concerns about the preparedness of the Northeast states to host the Games last year with Kerela, which conducted the National Games, emerging as a candidate to bag the

hosting rights, it was Sports Minister Sonowal, who ensured that his home state hosts the event.

Things seem to have fallen in place ever since and work has been going on in full swing to renovate and refurbish the infrastructure and make them ready ahead of the Games.

Among the different venues, Jawaharlal Nehru Sports Complex in Shillong will host Football, Judo and Table Tennis, while the Multipurpose Hall at SAI-SAG Centre in NEHU Campus will host the badminton and boxing events.

Archers will showcase their skills at JLN Sports Complex Polo Ground. Taekwondo and Wushu will be held at the NEIGHRIHMS Indoor Stadium and Indoor Hall in Assam Rifles respectively.

In Guwahati, athletes will show their skills at the Indira Gandhi Athletics Stadium, while Dr. Zakir Hussain Aquatic Complex will host the Triathlon and Swimming events during the Games. The hoopsters will enthral the spectators at the Nabin Ch. Bordoloi AC Indoor Stadium, while the Kabaddi players will show their grip at the DTRP Indoor Stadium at Ulubari.

While Football will be held at the Nehru Stadium and Indira Gandhi Athletics Stadium, Sarusajai Sports Complex, Hockey players will look to make their mark at the Moullana MD. Tayabullah Hockey Stadium in Bhetapara.

Squash and Tennis will be held at the RG Baruah Sports Complex and All Assam Tennis Association, while Shooting will be held at Shooting Range in Kahilipara.

To ensure the smooth conduct of the Games, Union Minister of State for Youth Affairs and Sports, Sarbananda Sonowal constituted a SAF Games Secretariat which has been overseeing the functioning & preparations in the run up to the Games. Besides, Meghalaya Sports Minister Zenith M Sangma also have inspected the venues of the Games.

The Games also had its share of problems as it got postponed a few of times with Delhi being the first choice to host the event in 2012. But due to the elections in the Capital and the suspension of the Indian Olympic Association (IOA), the SAF Games were postponed to late 2015 but then participating countries felt the December dates did not present

enough time for preparation and so it was decided that it would be apt to hold the event in 2016.

It is often said sports can transcend boundaries. On this occasion, the South Asian Games can truly play an important role in bridging the divide between the urban counterparts and the somewhat semi-urban part of the country.

This could not have come at a better time for the people of Northeast as the region cries for national attention. The region has witnessed a surge in giving India sporting heroes time and again, especially in the last decade, which all of us are proud of.

For a change, this is the time for Northeast to bask in glory. While all attention will be on the sport itself and intense rivalry the Games is bound to witness, this player called Northeast is out to prove

a point to the world. This is Northeast's moment under the sun.

Aptly, the theme Song of 12th South Asian Games is "*Ei Prithibi Ek Krirangan*" which literally translates to "**The world is a playground**", written by the late **Dr. Bhupen Hazarika**.

The legendary artist from Northeast may not be there to witness this moment, but he would have surely believed Northeast is a playground ready for the rest of South Asia and capable of hosting a world-class event successfully.

So let's celebrate Northeast this time as much we celebrate sports. Let the Games begin in the Northeast!

*(The authors is a Delhi based Senior freelancer)*

# Kurukshetra

FORTHCOMING ISSUE

March 2016

:

Agriculture & Allied Sectors

## Substantial Increase in Paddy Procurement

Due to the joint efforts of the Food Corporation of India (FCI) and State Government Agencies under the close monitoring of the Centre, there has been a substantial increase in procurement of paddy in the current Kharif Marketing Season (KMS), which begun on 1st October, 2015. The total quantity of paddy procured in terms of rice till 12th January, 2016 is 208.10 lakh MT. Last year during the same period it was only 157.41 lakh MT.

The major increase in procurement of paddy has taken place in Punjab, Haryana, Chhattisgarh, Andhra Pradesh, Odisha and Uttar Pradesh. In order to ensure that FCI has enough funds to pay the farmers towards procurement of paddy and to the State Government Agencies towards the rice supplied, the Centre has provided an additional funding of Rs. 10,000 crore to them during Dec. 2015. With this additional funding, FCI has sufficient funds to meet its requirements towards expenditure including cost of procurement operations for the peak period of paddy procurement in January and February, 2016.

In all, the Government has already released a food subsidy of Rs.87,000 crore to FCI till 12th January during the current financial year and a Ways & Means Advance of Rs.20,000 crore during the current financial year, totalling to a funding of Rs.1,07,000 crore in this fiscal, which is an all time record.

Despite 2014 and 2015 having been monsoon deficit years, due to robust procurement arrangements made by the Food Ministry and FCI, there is more than adequate food grain stock available with the Government under Central Pool. As on 1st January, 2016, there is 237.88 lakh MT of issuable wheat stock under Central Pool. The FCI is also stepping up open market sale of wheat at reasonable rates to check inflation and also to provide supplies to the private flour mills and trade. Similarly, there is a stock of 126.89 lakh MT of rice under Central Pool, which is 50.79 lakh MT more than stocking norms. This excess quantity of rice will help in meeting contingencies arising due to monsoon deficit or natural calamities.

## Publications Division's Participation in World Book Fair

Publications Division, like every year took part in the World Book Fair – 2016, which was held from January 9 to 17 at Pragati Maidan, New Delhi. With “Cultural Heritage of India” being the theme of this year's fair, Publications Division's rich collection on Art and Culture, and Heritage of India, found the right platform for being showcased.

The Division has been a pioneer in publishing books on Indian Art, Culture and Heritage, of archival value like *India's Craft Tradition* by Kamala Devi Chattopadhyay; *Indo- Islamic Architecture* by Ziyauddin A. Desai; *Living Dolls- Story of Indian Puppets* by Jiwan Pani; *Looking Again at Indian Art* by Vidya Dehejia; *Nataraja* by C. Sivaramamurti, *Bihari Satsai – A Commentary* by Sudarshan Kumar Kapoor, *Wood Carvings of Gujarat* by V.S.Pramar, *Indian Classical Dance* by Dr Kapila Vatsayayan, *Art and Science of Playing Tabla* by Pt. Vijay Shanker Mishra and *An Introduction to Indian Music* by B. Chaitanya Deva.



Publications Division has been bringing out books on cultural heritage, folk art and folk tales for children in Hindi and other regional languages as well. To name a few: *Ajanta ke Vaibhav*, *Bhartiya Kala – Udbhav Aur Vikas*, *Bhartiya Kala ke Hastakshar*, *Gharwal Chitrakala*, *Suroan ke Sadhak*, *Folk Tales of Gujarat*, *Folk Tales from India and Abroad* in English, *Chhattisgarh ki Lok Kathayen*, *Kashmir ki Lok Kathayen*, *Uttar Bharat ki Lok Kathayen*, *Mizoram ki Lok Kathayen* and *Mithilanchal ki Lok Kathayen*.

A number of subjects like history, land and people, flora and fauna, science and technology, biographies of eminent persons, works of reference like '**India – A Reference Annual**' also occupy an important place in the Division's publications. It is also credited with publication of books on Gandhian literature including the Collected Works of Mahatma Gandhi (CWMG) in 100 volumes, in English and Hindi which is considered the most comprehensive and authentic collection of Gandhiji's writings. The Division also brings out selected speeches of the Presidents and the Prime Ministers of India. Recently, Publications Division has published a series of high quality books on various aspects of Rashtrapati Bhawan and its functioning.



On the inaugural day, Special Secretary, Shri Jitendra Shankar Mathur, Ministry of Information and Broadcasting released 16 recent publications. These include: *Saga of Valour*, an English compilation by Reva Dhanedhar, glorifying brave deeds of 21 recipients of Param Vir Chakra and 81 recipients of Ashoka Chakra; *Bharatiya Kala: Udbhav aur Vikas*, a Hindi title on painting, sculpture and architecture by Haripal Tyagi; *Essential Writings of Dharampal*, which brings together all the research work done by Dharampal (1922-2006), a Gandhian thinker, historian and political philosopher; *Hindi Bal*

*Sahitya : Kuchh Padav* by Divik Ramesh. It contains a detailed discussion on the concerns, traditions, creation and challenges associated with children literature; *Lakshmi Narayan Mishra*, by Dr Khagendra Thakur describes this personality as the Father of Modern Hindi Drama.; *Aise Jungle Swachh Hua*, a Hindi title by Dr Madhu Pant aims to create awareness about the importance of cleanliness amongst young readers. *Robinson Crusoe*; a Hindi translation of English classic by Danial Diefo; *Shararat* by Rashmi Swaroop Johri, a children's book in Hindi, a bouquet of inspiring stories and an Urdu title – *Ali Sardar Zafri* by Prof Ali Ahmad Fatmi. With a heavy demand of some titles, like *The Gazetteer of India*, *Subhas Chandra Bose*, *Jamshetji Tata*, *Lokmanya Tilak*, *Kabir*, *Vigyan Barahmasa* and *Ghalib Ke Patra*, were also released on this occasion.

**Licensed U(DN) 52/2015-17 to post without pre-payment  
At RMS, Delhi ISSN- 0021- 5660  
Date of Publishing : 29 - 30th January 2016  
Date of Dispatch : 2nd, 3rd February 2016**

**Reg. Number DL(S)-05-3232/2015-17  
RN 702/57-Delhi Postal**

