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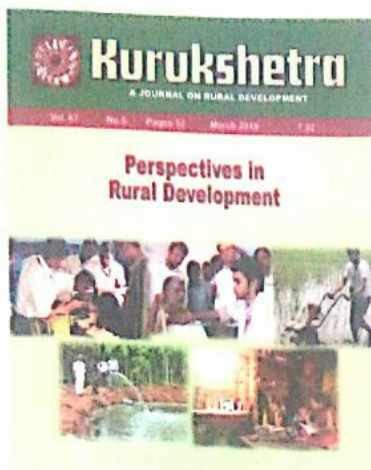
Perspectives in Rural Development



RURAL DEVELOPMENT AND THE INTERIM BUDGET 2019-20

- Under Pradhan Mantri Kisan Samman Nidhi Yojana (PM-KISAN), vulnerable landholding farmer families, having cultivable land upto 2 hectares, will be provided direct income support at the rate of Rs. 6,000 per year. This income support will be transferred directly into the bank accounts of beneficiary farmers, in three equal instalments of Rs. 2,000 each. It is expected to benefit 12 crore small and marginal farmers .
- Outlay for Rashtriya Gokul Mission increased to Rs. 750 crore
- Rashtriya Kamdhenu Aayog to be set up for sustainable genetic up-gradation of the Cow resources.
- New separate Department of Fisheries for welfare of 1.5 crore fishermen.
- 2 per cent interest subvention to Farmers for Animal husbandry and Fisheries activities; additional 3 per cent in case of timely repayment.
- Interest subvention of 2 per cent during disaster will now be provided for the entire period of reschedulement of loan.
- Pradhan Mantri Shram Yogi Maandhan scheme to ensure fixed monthly pension to 10 crore unorganized sector workers. Rs. 3,000 per month after 60 years of age with an affordable contribution of only Rs 100/55 per month.
- 22nd AIIMS to be set up in Haryana.
- Rs. 60, 000 crore allocation for MGNREGA in BE 2019-20.
- National Education Mission allocation increased by about 20 per cent to Rs. 38,572 crore in BE 2019-20.
- 25 per cent additional seats in educational institutions to meet the 10 per cent reservation for the poor.
- 10 per cent reservation for the poor in educational institutions and government jobs
- Allocation for Integrated Child Development Scheme (ICDS) increased by over 18 per cent to Rs. 27,584 crore in BE 2019-20.
- Allocation for SCs increased by 35.6 per cent - from Rs. 56,619 crore in BE 2018-19 to Rs. 76,801 crore in BE for 2019-20. Allocation for the STs increased by 28 per cent - from 39,135 crore in BE 2018-19 to Rs. 50,086 crore in 2019-20 BE.
- Targeted expenditure to bridge urban-rural divide and to improve quality of life in villages.
- All willing households to be provided electricity connections by March 2019.
- New Welfare Development Board under Ministry of Social Justice and Empowerment for development and welfare of De-notified nomadic and semi nomadic tribes.
- 2 per cent interest subvention on an incremental loan of Rs. 1 crore for GST registered SMEs. At least 3 per cent of the 25 per cent sourcing for the Government undertakings will be from women owned SMEs.
- The Government to make 1 lakh villages into Digital Villages over next five years.

(Source: PIB)



CHIEF EDITOR
SHAMIMA SIDDIQUI

SENIOR EDITOR
MANOGYAN R. PAL

EDITOR
VATICA CHANDRA

EDITORIAL SUPPORT
NAVEEN JOSHI

JOINT DIRECTOR (PRODUCTION)
VINOD KUMAR MEENA

COVER DESIGN
SISIR KUMAR DATTA

EDITORIAL OFFICE

ROOM NO. 653,
Publications Division,
Soochna Bhawan,
C.G.O. Complex, Lodhi Road,
NEW DELHI-110003
Phone : 011-24362859
E-MAIL : kurukshetra.english@gmail.com

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

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Editorial

Rural development generally refers to the process of improving the quality of life and economic condition of people living in rural areas. To achieve the desired social and economic development of the rural people a number of rural development programmes are being implemented. The prime goal of rural development is to improve the quality of life of the rural people by alleviating poverty through the instrument of self-employment and wage employment programmes and by providing community infrastructure facilities such as drinking water, electricity, road and communication connectivity, health facilities, housing and education.

Steps have been taken to encourage the rural people to develop themselves and in recent years the pace of rural development initiatives has been accelerated by allocating greater budget resources and fixing timelines for quantifiable deliverables. Several targeted programmes have been launched for providing direct employment, self-employment, social security, housing, building rural infrastructure, delivering financial services at an affordable cost and taking healthcare to the doorsteps of the rural people.

Agriculture plays a vital role in the economy for a country like India. India is an agricultural country where, according to census 2011, about 69 per cent of population lives in its rural areas and the primary source of their livelihood are agriculture and allied activities. It has been observed that agricultural diversification towards high value commodities will strengthen agricultural growth in future and will result in high remunerative returns to farmers. Besides, horticulture and other allied activities have lot of backward and forward linkages which generate wide employment opportunities & income flow and hence help in the development of rural India. Sustained efforts are being made to reorient the agriculture sector by focusing on an income-centeredness in addition to pure production centeredness approach. Steps are being taken to strengthen service delivery in all areas from extension to input supply and marketing.

Rural development has gained momentum in recent times by way of financial inclusion which is of vital importance in providing economic security to individuals and families in rural India. Access to loans, savings, insurance, payments and remittance facilities to rural people at affordable cost has certainly catalyzed the process of economic transformation of rural India.

For sustained rural economic growth it is essential to develop rural infrastructure. Several rural infrastructure initiatives have been undertaken in the field of irrigation to create irrigation potential and expansion of installed capacity. Steps have been taken to improve rural drinking water infrastructure for successful operation of drinking water supply schemes in rural areas. Rural sanitation infrastructure has also got a tremendous boost. In Power sector, sustained efforts have yielded in improvement of quality of power supply and power accessibility in rural areas.

Rural connectivity is a key component of rural development and poverty alleviation in India. The main mechanism for enhancing rural connectivity in a more systematic way has been the Pradhan Mantri Gram Sadak Yojana (PMGSY). Recent initiatives have resulted in connecting eligible rural habitations by way of single all weather roads. Time is not far when agricultural and rural markets, schools and healthcare centers in rural areas will be connected.

The progress in provision of rural housing and inclusion of excluded eligible beneficiaries under the rural housing projects will go a long way in fulfilling the dream of rural people to have their own pucca houses with all the facilities.

Rapid revolution in communication sector has the potential to provide rural folk the required digital communications infrastructure and affordable services. The efforts in connecting village panchayats with broadband will ensure seamless transmission of information and empower the villages.

For empowering rural India in healthcare, the National Health Policy is envisioned to bring healthcare system closer to the homes of the people. It is planned that the healthcare services should cover all levels of healthcare systems to reach out to rural population at household level, community and village level.

Mahatma Gandhi laid emphasis on the fact that India lived in villages and that only through their salvation India could regain her glory and prosperity. The path of rural development India has adopted aims to making villages self-sufficient in the matters of their vital requirements and easy availability of means of production of the basic necessities of life.

INTERIM BUDGET 2019-2020: THRUST ON RURAL ECONOMY

G. Srinivasan

The Interim Budget has made measures to boost agriculture and rural development so that the villages of the country where the true Bharat resides could also contribute better in building a New India.

Although India's economic growth is powered by the services sector and technology-enabled industries in recent years, the fact remains that more than half of the nation's population ekes out its existence by land and agriculture down the decades even till date. It is the farmers who form the backbone and mainstay of the rural India. The successive governments in the country since Independence always devised farmer-friendly rural development plans and programmes with the limited means available among competing demands to prop up the productive and real sectors of the economy that include primary agriculture sector, the secondary manufacturing one and the tertiary services sector.

The minimum support price (MSP) of all 22 crops at minimum 50 per cent more than the cost has been fixed with an aim to double the income of farmers a few years ago.

There is a need for providing structured income support to the poor landholder farmer families in the country for procuring inputs such as seeds,

fertilizers, equipment and labour and to cope with other needs.

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN): Under the programme, in the Interim Budget 2019-20 vulnerable landholding farmer families with cultivable land upto two hectares, would be provided direct income support at the rate of 6000 rupees per year. This income support would be made over directly into the bank accounts of beneficiary farmers in three equal tranches of 2000 rupees each. This programme would be funded by the Government of India. Around 12 crore small and marginal farmer families are likely to benefit from this. The programme would be retrospectively implemented from December 1, 2018 and the first tranche for the span upto March 31, 2019 would be paid during the current fiscal year itself. This programme would entail an annual expenditure of 75,000 crore rupees in a full year and the Interim Budget also announced providing 20,000 crore of rupees for the last quarter of this fiscal in the revised estimates of Fiscal Year 2019-20.

In the last quinquennium, the amount of interest subvention (subsidy) has been doubled in order to ensure provision of affordable loans to kisans. The crop loan to farmers rose to 11.68 lakh crore rupees in 2018-19, besides giving farmers soil health cards, quality seeds, irrigation scheme and neem coated urea to remove shortage of fertilizers.

Since the secondary activity of animal husbandry and fisheries also deserve a leg up as a livelihood support to rural populace, the Government has enhanced the allocation for Rashtriya Gokul Mission to 750 crore of rupees. It is also proposed to inaugurate 'Rashtriya Kamdhenu Aayog' to upscale sustainable genetic upgradation of cow resources and to enhance production and productivity of cows and the proposed Aayog will have the remit to take care of effective implementation of laws and welfare schemes for cows.

INTERIM BUDGET 2019-20

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)

Direct income support of ₹6,000 p.a. for farmers, effective 01.12.2018

To benefit 12 cr small and marginal farmer families having cultivable land upto 2 ha

Direct transfer into the bank accounts in three equal instalments

First installment upto 31.03.2019, to be paid this year itself

₹75,000 cr in outlay for 2019-20 and ₹20,000 cr in RE 2018-19



As the country is the second largest fish spawning nation in the world accounting for 6.3 per cent of world fish catch, registering an average annual growth of more than seven per cent in recent years, the Interim Budget has resolved to create a separate Department of Fisheries to provide sustained and focused attention for the development of this vital sector to make it vibrant to prop up the livelihood of about 1.45 crore people at the primary level of fish spawning. It is also proposed to provide the benefit of 2 per cent interest subvention to the farmers pursuing the activities of animal husbandry and fisheries, who avail loan through Kisan Credit Card. Besides, in case of timely repayment of loan, they would get an entitlement of an additional 3 per cent interest subvention as a spur for fostering robust credit culture so that the financial institutions remain buoyant to further their core business of lending to rural activities and workforce. In this regard, efforts are being made to ensure provision of easy and concessional credit and to bring all farmers under KCC fold through fashioning a comprehensive drive with a simplified application form.

All farmers hit by severe natural calamities, where the assistance is extended from National Disaster Relief Fund (NDRF) would be accorded the benefit of interest subvention of 2 per cent and prompt repayment incentive of 3 per cent for the entire period of reschedule of their loans.

The Interim Budget also took cognizance of the workers in the unorganized sector of the economy where the services of street vendors, rickshaw pullers, construction workers, rag pickers, agricultural workers, beedi workers, handloom, leather and in numerous other vocations that collectively account for half of the country's Gross Domestic Product

(GDP). It is proposed to provide them comprehensive social security coverage for their dotage. "Pradhan Mantri Shram-Yogi Maandhan" is launched for the unorganized workers with monthly income upto 15,000 rupees. This pension yojana would give them an assured monthly pension of 3,000 rupees from the age of 60 years on a monthly contribution of a small affordable premium during the working age. An unorganized sector worker joining pension yojana at the age of 29 years will have to contribute only 100 rupees a month till the age of 60 years. A worker

joining the pension yojana at 18 years will have to contribute as little as 55 rupees a month only. The Government would deposit equal matching share in the pension account of the worker every month. It is expected that at least 10 crore laborers and workers in the unorganized segment would avail the benefit of the new superannuation scheme within next five years making it one of the largest pension schemes ever rolled out in the world. A sum of 500 crore of rupees has been allocated for the scheme. Additional funds would be provided when warranted and the scheme will also be implemented from the current year itself.

A Committee under NITI Aayog is to be set up to complete the task of identifying de-notified, nomadic and semi-nomadic communities and tribes not yet formally classified. It is also proposed to set up alongside a Welfare Development Board under the umbrella of the Ministry of Social Justice and Empowerment specifically for the purpose of implementing welfare and development programmes for denotified, nomadic and semi-nomadic communities. The Board would ensure that special strategies are designed and implemented to serve these hard-to-reach communities and integrate them with the mainstream of the nation.

The Interim Budget has made measures to boost agriculture and rural development so that the villages of the country where the true Bharat resides could also contribute better in building a New India to help realize the aspirations of the millennials.

*(The author is a senior freelance journalist.
Email: geeyes34@gmail.com)*

AGRICULTURE - A KEY COMPONENT OF RURAL DEVELOPMENT

Sandip Das

To strengthen the agriculture sector major steps have been initiated which include schemes like Soil Health Card Scheme, Neem Coated Urea, Pradhan Mantri Krishi Sinchayee Yojana, National Agriculture Market Scheme and many more. Some schemes like National Food Security Mission and Rashtriya Krishi Vikas Yojana have been revamped for ensuring overall development of farm sector. The Interim Budget (2019-20) presentation has reinforced the fact that agriculture continues to be the main driver of the rural economy. Some of the key announcements in the Budget towards energizing agriculture sector include PM-KISAN under which 12 crore small and marginal farmers are to be provided with assured yearly income of Rs. 6,000 per annum, increase in outlay for Rashtriya Gokul mission to Rs. 750 crore and setting up of Rashtriya Kamdhenu Aayog for sustainable genetic up-gradation of the cow resources. With such thrust on agriculture sector, the country is expected to witness robust growth in coming years.

The agriculture sector is facing several challenges. The Economic Survey (2017-18) had stated, "the last few seasons have witnessed a problem of plenty: farm revenues declining for a number of crops despite increasing production and market prices falling below the Minimum Support Price (MSP)".

To meet the challenges faced by the agriculture sector and improving the economic condition of the farmers, an Inter-Ministerial Committee has been constituted under the Chairmanship of Chief Executive Officer, National Rainfed Area Authority, Department of Agriculture, Cooperation and Farmers Welfare to examine issues relating to doubling of farmers' income in real terms by the year 2022.

The committee has identified seven sources of income growth- improvement in crop and livestock

productivity; resource use efficiency or savings in the cost of production; increase in the cropping intensity; diversification towards high value crops; improvement in real prices received by farmers; and shift from farm to non-farm occupations. The committee is also looking into the investments in and for agriculture - increasing public investments for agriculture-rural roads, rural electricity, irrigation; the need for policy support to enable investments by corporate sector in agriculture.

Other Schemes are - Soil Health Card (SHC) Scheme, Neem Coated Urea (NCU), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA), Paramparagat Krishi Vikas Yojana (PKVY), National Agriculture Market scheme (e-NAM), Pradhan Mantri Fasal Bima Yojana (PMFBY).



Schemes like National Food Security Mission (NFSM), Mission for Integrated Development of Horticulture (MIDH), National Mission on Oilseeds & Oilpalm (NMOOP), National Mission for Sustainable Agriculture (NMSA), National Mission on Agricultural Extension & Technology (NMAET) and Rashtriya Krishi Vikas Yojana (RKVY) have been revamped for ensuring overall development of farm sector.

Let us elaborate on some of the programmes.

Hike in MSP

The Minimum Support Prices (MSPs) has been increased for all notified Kharif & Rabi Crops and other commercial crops for the season 2018-19 with a return of at least 50 per cent over cost of production. This has redeemed the promise of fixing the MSPs at least at a level of 50 per cent return over cost of production as announced in the Union Budget 2018-19.

PM-AASHA

The umbrella scheme - 'Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA)' provides for a holistic arrangement for assurance of a remunerative and stable price environment for growers/farmers to increase agriculture production and productivity. This umbrella scheme comprises the Price Support Scheme for pulses & oilseeds, Price Deficiency Payment Scheme & Pilot of Private Procurement & Stockist Scheme for oilseeds to ensure MSP to the farmers.

e-NAM

In order to provide an alternative to farmers for marketing avenues, the electronic National Agriculture Market (e-NAM) was launched in April, 2016. The scheme envisages initiation of marketing platform at national level and support creation of infrastructure to enable e-marketing in 585 regulated markets across the country by March 2018. All the regulated markets have been linked electronically. This innovative market process is revolutionizing agri-markets by ensuring better price discovery, bringing in transparency and competition to enable farmers to get improved remuneration for their produce moving towards 'One Nation One Market'. As per Union Budget announcement(2018-19), decision has been taken to develop and upgrade existing rural haats into Gramin Agricultural Markets (GRAMs). These GRAMs, electronically linked to e-NAM portal and exempted from regulations of Agriculture Produce Marketing Committees (APMCs), will provide farmers



facility to make direct sale to consumers and bulk purchasers.

PMFBY

In April, 2016, the Pradhan Mantri Fasal Bima Yojana (PMFBY) was launched after rolling back the earlier insurance schemes - National Agriculture Insurance Scheme (NAIS), Weather-based Crop Insurance scheme and Modified National Agricultural Insurance Scheme. Under the PMFBY, farmers pay a uniform premium of just 2 per cent for the more rain-dependent kharif crops and 1.5 per cent for all rabi crops. The remaining share of the premium is borne equally by the Centre and the respective State Governments. In the schemes that existed earlier, the premiums paid by farmers was in the range of 4-8 per cent of the insured value. The number of farmers who received claims due to crop loss under PMFBY has increased from 1.44 crore in 2016-17 to 1.62 crore in 2017-18.

Interim Budget (2019-20): Thrust on Agriculture Sector

The budget (2019-20) presentation has reinforced the fact that agriculture continues to be the main driver of the rural economy. It adds that declining prices of agricultural commodities in the international market and fall in food inflation in India since 2017-18, relative to non-food sector, have however, reduced the returns from farming.

The budget presentation further states that small and fragmented land holding on account of repeated divisions has also contributed in decline in the income of the farmer family. Hence, there is a need for providing structured income support to the poor land-holder farmer families in the country for procuring inputs such as seeds, fertilizers, equipment, labour etc. and to meet other needs which will help them in avoiding indebtedness as well and falling into clutches of money lenders.

Launch of PM - KISAN

To provide an assured income support to the small and marginal farmers, 'Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)' programme has been launched. Under this programme, vulnerable landholding farmer families, having cultivable land upto two hectares, will be provided direct income support at the rate of Rs 6,000 per year. Around 12 crore small and marginal farmer families are expected to benefit from PM-KISAN.

Under the programme the income support will be transferred directly into the bank accounts of beneficiary farmers in three equal instalments of Rs 2,000 each. The programme would be made effective from 1st December 2018 and the first instalment for the period upto 31st March 2019 would be paid during this year itself. This programme would not only provide assured supplemental income to the most vulnerable farmer families, but would also meet their emergent needs especially before the harvest season.

Kisan Credit Card to Animal Husbandry and Fisheries Farmers

In the last year's Union Budget (2018-19), the facility of extension of Kisan Credit Card scheme (KCC) has been provided to Animal Husbandry and Fisheries farmers. This was a significant measure towards expanding the credit outreach amongst those farmers who are engaged in agri-allied activities.

The KCC programme was announced in 1998 with the aim to provide short-term credit needs of the farmers during the sowing and harvesting of crops. It was also introduced to reduce the dependence of farmers on the informal banking channels like moneylenders. According to National Bank for Agriculture and Rural Development (NABARD), a total number of 5.37 crore farmers have 'live and operative' KCCs issued by Public Sector Banks, Cooperative Banks and Regional Rural Banks so far.

Those who have KCCs get agriculture credit at a reduced interest rate of 7 per cent per annum while Agriculture Ministry implements 'an interest subvention scheme' for short-term crop loans up to Rs. 3 lakh. Under the subvention scheme, additional subvention of 3 per cent is given to those farmers who repay their short term crop loan on time, thus reducing the effective rate of interest to only 4 per

cent per annum. All farmers who own cultivable land, tenant farmers, share croppers and SHGs of farmers could get credit under KCCs. However KCC was never expanded to include those farmers who carry out activities like fisheries, dairy etc.,

In the Interim Budget (2019-20), the benefit of 2 per cent interest subvention would be provided to the farmers pursuing the activities of animal husbandry and fisheries, who avail loan through KCCs. Further, in case of timely repayment of loan, they will also get an additional 3 per cent interest subvention. To ensure provision of easy and concessional credit and to bring all farmers under KCC fold, a comprehensive drive would be initiated with a simplified application form.

When natural calamities strike, farmers are generally unable to repay their crop loans. Presently, the crop loans are rescheduled for such affected farmers and they get benefit of interest subvention of 2 per cent only for the first year of the rescheduled loan. It has now been decided that all farmers affected by severe natural calamities, where assistance is provided from National Disaster Relief Fund (NDRF), will be provided the benefit of interest subvention of 2 per cent and prompt repayment incentive of 3 per cent for the entire period of reschedulement of their loans.

Animal Husbandry and Fisheries sector also plays a vital role in augmenting farmers' income. In the Interim Budget (2019-20), the allocation of Rs 750 crore for Rashtriya Gokul Mission has been made. For ensuring genetic upgradation of cow, the creation of a 'Rashtriya Kamdhenu Aayog' is to be set up.

Higher allocation for rural infrastructure development

Several announcements have been made to improve rural infrastructure which would directly support improving efficiency of the agricultural sector. Under the Pradhan Mantri Gram Sadak Yojana (PMGSY), 15.80 lakh habitations out of a total of 17.84 lakh habitations have already been connected with pucca roads and the work is expected to be completed soon. PMGSY is being allocated Rs. 19,000 crore for 2019-20 (budget estimate) as against Rs. 15,500 crore in 2018-19 (revised estimate).

*(The author is a Delhi based journalist.
Email: sandipdas2005@gmail.com)*

FINANCIAL INCLUSION FOR ECONOMIC SECURITY

Manjula Wadhwa

In order to systematically accelerate the level of financial inclusion in the country in a sustainable manner, the National Strategy for Financial Inclusion document is being finalised under the aegis of Financial Inclusion Advisory Committee to take forward the momentum. The World Bank's latest Global Findex data proves that India has made rapid strides in improving access to formal financial services.

By financial inclusion, we mean the delivery of financial services, including banking and credit at an affordable cost to the vast sections of disadvantaged and low-income groups who tend to be excluded. These include access to savings, loans, insurance, payments and remittance facilities offered by the formal financial system. Among the key financial services that are of great relevance here, are risk management or risk mitigation vis-à-vis economic shocks, may be an income shock due to adverse weather conditions or natural disasters, or an expenditure shock due to health emergencies or accidents, leading to a high level of unexpected expenditure. This aspect of financial inclusion is of vital importance in providing economic security to individuals and families, especially in rural India.

It becomes highly relevant here to have a look at the present state of financial inclusion in rural India. A recent NABARD All India Rural Financial Inclusion Survey (NAFIS) 2016-17, offers a comprehensive overview of the rural populations in terms of the status of their livelihood and level of financial inclusion as follows:

Although the measures for financial inclusion started way back in 1904, with the advent of cooperative movement, further in 1969 with the nationalization of major banks in India, the issue

got real impetus in 2008, when the committee on Financial Inclusion, headed by Dr. C. Rangarajan, was formed by RBI. Since then, it has been a regular agenda item in all State Level Bankers' Committee meetings throughout the country. The Reserve Bank of India has been complementing the Government's efforts through its numerous initiatives like introduction of priority sector lending requirements for banks, establishment of regional rural banks (RRBs), self-help group-bank linkage program to extend the financial services to the poor and marginalized segments of the society. In addition, NABARD, being the apex bank for agriculture and rural development of the country, has also been making all-out efforts in this direction.

Moving further, the Government of India and Indian Bank's Association, in the beginning of 2011, jointly launched 'Swabhiman', to bridge economic gap between rural and urban India. It aimed at ensuring availability of banking facilities within the reach of every village with a population of over 2000 by the end of March, 2012. With this initiative, it was expected that the banking facilities will reach over 73,000 villages in the country which were not served by any bank thus far. The banks in the villages were supposed to facilitate the villagers in opening no-frills accounts, getting need-based credit as well as

Easy ways to open a Bank Account with Pradhan Mantri Jan-Dhan Yojana
(If account form is not available, please take it either from website www.financialservices.gov.in or from newspaper)

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- ✓ By showing any photo ID card along with two photographs (pan card, driving license, passport, voter ID and NREGA card)
- ✓ In case no document is available even then a 'Small account' can be opened

Mandatory KYC formalities within one year

* Remaining balance should not exceed ₹ 50,000. Total deposit during a year should not be more than ₹ 1,20,000 and monthly withdrawal limit is ₹ 10,000.

Just in two months, we have illuminated lives of millions.

Account Type	Number of Accounts	Date
1.84 Crore Accounts	1.84	08 10 th August
2.14 Crore Accounts	2.14	08 10 th September
4.54 Crore Accounts	4.54	08 10 th September
6.10 Crore Accounts	6.10	08 10 th October

PRADHAN MANTRI JAN-DHAN YOJANA
MERA KHATA BHAGYA YOJANA

If you are already an account holder, register your Aadhaar card no. with your bank account.

It will help beneficiaries of government schemes, pension & insurance to get direct benefit transfer.

Encourage & educate maximum number of people to open their bank accounts and become a part of a noble social cause.

Special Benefits

- Security of money and interest on remaining balance
- Free accident insurance cover of ₹ 1 Lakh
- Withdrawal of money from any ATM with Rupee Debit Card
- No minimum balance required and also enjoy benefits of Rupee Debit Card on remaining balance

Please contact your nearest bank branch or bank mile.

Ministry of Finance
Indian Bank's Association

For more information call on national toll free no. 1800 110 001 / 1800 100 1111. Get state toll free no. from the website.

Table -1				
Sr. No.	Banking services (availed during one yr. before survey in terms of percentage)	All Households who availed	percentage of Agri-Households who availed	percentage of Non-Agri Households who availed
1	Savings in an institution	48.5	52.8	44.6
2	Households reporting any Investment	10.4	8.7	9.5
3	Households availing Loan from an institution	40.2	43.5	37.2
4	Households with at least one member having any form of insurance	25	26	25
5	Households with at least one member having any form of pension	18.9	20.1	17.7
6	People having good level of Financial Literacy	11.3	11.3	11.2

(Source: NABARD, All India Rural Financial Inclusion Survey (NAFIS) 2016-17)

remittance facilities to transfer funds from one place to another.

This gained a further momentum with the Pradhan Mantri Jan-dhan Yojana, aiming at ensuring universal access to bank facilities, increase in the level of financial literacy and providing access to credit, insurance and pension services as well. RBI also undertook some measures to augment financial inclusion, such as granting in-principle approval to the largest Micro Finance Institutions in India to commence banking operations, permitting Non-banking Financial Companies to act as business correspondents for banks, and issuing guidelines on differentiated banking licenses for Small Banks and

Payments Banks based on the recommendations of the committee on "Comprehensive Financial Services for Small Businesses and Low Income Households".

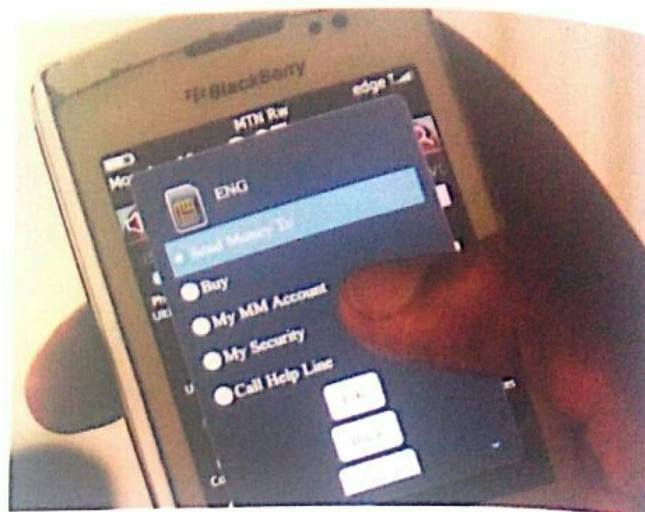
The post- liberalization period saw banks shying away from lending to rural areas—based on the belief that small and poor borrowers were not bankable and lending to them was not in the interest of banks, especially in a competitive environment. It was this perception that gave a fillip to Micro Finance Institutions, which held a contrary view and saw the poor as bankable and having a business potential. This was the time, NABARD launched Self-Help Group-Bank Linkage program in 1992 as an alternative credit delivery mechanism for reaching



the unreached. Started with just 500 SHGs on a pilot-basis, today, this program has taken the shape of perhaps the biggest Micro-Credit Program of the world, with 87 lakh and SHGs operating in all the nooks and corners of rural and semi-urban India, thus proving a remarkable milestone for achieving the target of financial inclusion in rural and far-flung regions of our country. Realizing the significance of financial literacy for achieving this ambitious mission, today all-out efforts are being made by RBI, NABARD, Commercial/Cooperative/Regional Rural banks, NGOs, Agricultural Universities, Krishi Vigyan Kendras and many similar stakeholders in the field. This program, besides achieving the target of Financial Inclusion and Financial Literacy, also enabled the rural Indian women in starting some or the other productive farm or non-farm activity. This has made them economically self-dependent, not only capable of being a bread earner for their families, but also a productive member of the society.

Like self-help groups (SHGs), the scheme of joint liability groups (JLG) is yet another institutional invention introduced in India with a view to enable landless/tenant farmers, oral lessees, secure collateral-free loans for productive purposes from the banking system, just on the basis of joint undertaking by all the members of the group. Around 11,000 JLGs have been covered in the ambit of formal banking through this mode.

Understanding the fact that in the present era of stiff competition, cost constraints and reducing profit margins, establishing bank branches in all locations cannot be a viable proposition, with the objective of exploring the possibilities of an alternative cost effective mechanism to increase the outreach of banking services, in January, 2006, The Reserve Bank of India, on the recommendations of Khan Commission, permitted banks to employ



two categories of intermediaries - Business Correspondents (BCs) and Business Facilitators (BFs). Scheduled commercial banks including Regional Rural Banks (RRBs) and Local Area Banks (LABs) were permitted to use the services of these agents in providing financial and banking services throughout the country, especially in remote areas. As the end of March, 2017, around 280 million BCBDAs, involving an amount of 285 billion, have already been opened through these channels.

Then came PMJDY- a National Mission on Financial Inclusion encompassing an integrated approach to bring about comprehensive financial inclusion of all the households in the country in two phases.

Ministry of Finance (MOF) and National Informatics Centre (NIC) have jointly developed a mobile app called Jan Dhan Darshak with a view to enable common people in locating a financial service touch-point. While over 5 lakh financial institution FI touch points (Bank branches, ATMs, Post Offices) have been mapped on this App, approx. 1.35 lakh Bank Mitras have been on-boarded by 01.12.2018.

Sr. No.		No. of Accounts			No. of Rupay Cards	Aadhaar seeded	Balance in Account	percentage of Zero balance A/cs
		Rural	Urban	Total				
1	Public Sector Banks	11.74	9.43	21.17	16.75	12.54	54,507.02	25.8 per cent
2	Regional Rural Banks	3.86	0.61	4.47	3.36	2.26	12976.71	25.08 per cent
3	Private banks	0.52	0.35	0.35	0.82	0.39	2,587.07	33.92 per cent
	Total	16.11	10.4	10.4	20.93	15.19	70,070.79 Crore (US\$ 10 Billion)	24.61 per cent

(Source: "Statistical Tables Related To the Banks in India -The Reserve Bank of India")

Interim Budget 2019-20 and its relevance to Financial Inclusion

Interim Budget 2019-20, while making an effort to balance the short-to medium-term objectives of the economy with a long-term vision for 2030, has taken care of the dire need of financial inclusion of the lowest strata of our society, unbanked and unreached so far.

An array of incentives has been proposed for the farmers and the other rural folks in this budget. The three most significant components of the financial inclusion apart from savings, are small loans, pension and insurance. It is in this respect that a Package of Rs. 6,000 per annum for farmers with less than 2 hectares of land, has been declared under the scheme to be called **Pradhan Mantri Kisan Samman Nidhi, (PM-KISAN)**, a fully Central-Government funded scheme. This amount will be disbursed to farmers in 3 instalments, thereby extending direct income support at the rate of Rs 6,000 per year to farmers. The idea of PM-KISAN would also strengthen the efforts for financial inclusion, as the exercise would entail digitization of land records and connect them with bank accounts for transfer of funds. Since the proposed 120 million farmers would have to be covered through the Jan-Dhan scheme being extended through the public sector banks, it would simultaneously strengthen the recently recapitalized Public Sector Banks (PSBs).

PM-KISAN would not only provide assured supplemental income to the most vulnerable farmer families, but would also meet their emergent needs especially before the harvest season. It would pave the way for the farmers to earn and live a respectable living.

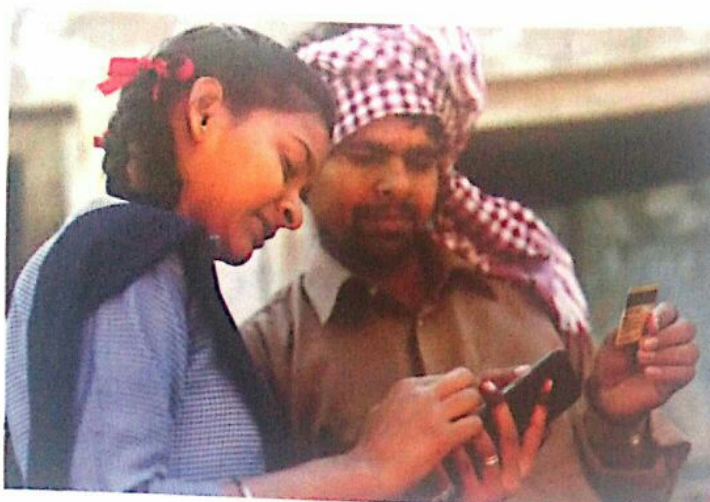
In addition, mega pension scheme for workers in the unorganised sector with an income of less than Rs. 15,000 has been declared. They will be able to earn Rs. 3,000 after the age of 60. The scheme will be called **Pradhan Mantri Shramyogi Maan Dhan Yojana**. This scheme is expected to benefit 10 crore workers in the unorganized sector. They will contribute Rs. 55-100 per month and government will contribute the same—to get them Rs. 3,000 pension monthly post 60. Rs. 500 crore has been allotted for pension schemes for individuals in other sectors. National Pension Scheme rules amended in December 2018 are being implemented— with increased Government contribution from 10 per cent to 14 per cent. Over Rs. 35,000 crore has been allocated under the 'One Rank One Pension' scheme for Defence personnel. The amount of interest subvention has also been doubled and crop loans to farmers increased to Rs. 11.68 lakh crore.

In view of the government's 'Digital India' mission, the Interim Budget has provided for digitization of 1 lakh villages in the next 5 years. It has also reaffirmed the utility of Jan Dhan-Aadhaar-Mobile (JAM) and Direct Benefit Transfer (DBT) and hence has laid special focus on it with the hope that it will help the poor beneficiaries receive the benefits of government schemes directly in their bank accounts by eliminating middlemen.

Direct Benefit Transfer aims to facilitate disbursement of government entitlements such as those under the social security pension scheme, handicapped old-age pension scheme, of any central or state government bodies, using Aadhaar and authentication thereof, as supported by UIDAI.

Payments banks is a model of banks conceptualized by RBI which came just weeks after the PMJDY. It primarily focuses at enhancing Financial Inclusion drive by widening the spread of payment and financial services to small businesses, low-income households, migrant workforce in a secured technology-driven environment.

The role of **M-banking** and **Department of Post**, in this regard, has also been highly significant. Filling cash into an m-commerce bank account in one place, and withdrawing cash from any ATM, frictionless, from any other place through debit card, even cash withdrawn or paid in a more rural location, through any point of sale terminal with a business correspondent thus facilitating financial inclusion, are the special features of Payment Banks. Virtually, it is the small convenience shops, kirana-shops, fruit-shops which will serve the purpose of bank branches, thus bringing the rural unbanked people into the fold of formal banking. As far as the



India Post is concerned, with 1,54,000 post offices, of which 90 per cent are in rural areas, it is the friendly postman you meet everyday, could be your banking relationship manager.

With a clear understanding that this deep penetration at affordable cost is possible only with effective use of technology, by way of Every Bank Account to be on-line with RuPay Card and Mobile Banking Facility, use of e-KYC to ease the account opening process, use of Aadhaar-Enabled Payment System (AEPS) for interoperability, support for setting up of Financial Literacy Centers, support for demonstrating banking technology (Mobile Van fitted with ATM), bringing all the cooperative banks and Regional Rural Banks on CBS platform for providing anytime and anywhere banking to the rural populace, on-line monitoring through system generated MIS and facility of Call Centre and Toll free number, RBI decided to rope-in the financial technology players in the mission to be accomplished.

In view of the changes that have taken place in the financial sector over the years, RBI constituted a Committee of Executive Directors of the Bank to study the efficacy of the Lead Bank Scheme. For streamlining the functioning of State Level Bankers' Committees, it has been decided to bifurcate Policy and Operational issues whereby Operational issues would be discussed by specific sub-committees and a Steering sub-committee would decide on its primary agenda items. A standardized approach to manage websites of the SLBCs including direct collection of data through respective CBS of the all participating banks, operations of BCs, digital modes of payments including connectivity, DBT,

financial literacy drives, digitization of land records and discussion on improving rural infrastructure/credit absorption capacity, have also been developed. From FY 2018-19, Small Finance Banks are required to participate as regular members in various fora like SLBC, DCC, DLRC and BLBC meetings. Twenty Public Sector banks and one Private Sector bank have been assigned lead bank responsibility in 714 districts across the country. In order to have a planned and structured approach to financial inclusion, banks have been advised to prepare Board-approved Financial Inclusion Plans, capturing their achievements on all parameters.

In order to systematically accelerate the level of financial inclusion in the country in a sustainable manner, the National Strategy for Financial Inclusion document is being finalised under the aegis of Financial Inclusion Advisory Committee to take forward the momentum. The **World Bank's latest Global Findex data** proves that India has made rapid strides in improving access to formal financial services. Today, more than 80 per cent adults have a formal Bank Account. At the same time, it has cut its gender gap in financial access from 20 percentage points to six.

Hindering Financial Inclusion: PMJDY has opened more than 100 million new bank accounts, more women have been enrolled. The mobile phone is still the most promising empowerment tool for financial inclusion. There is an acute need for Developing Next generation payment systems which have a user friendly interface and local language. Setting up efficient BCs and training them to be able to conduct multiple businesses is yet another massive challenge. For sustainability of SHG/JLG schemes also needs to be done.

The Road Ahead: As the world nears the long-held goal of universal financial access, we can see the road ahead for eliminating the gender gap in basic access and increasing usage among all customers by making financial services more digital, flexible, and relevant to both men and women's lives. Time calls for innovation and out of the box thinking.

*(The author is AGM (NABARD) Chandigarh.
Email: manjula.jaipur@gmail.com)*

INFRASTRUCTURE FOR RURAL TRANSFORMATION

Dr. K. K. Tripathy

Infrastructure provides the basic framework for economic and social progress of a country. Rural infrastructure, inter alia, involves irrigation, rural housing, rural water supply, rural electrification and rural telecommunication connectivity. The initiatives for building rural infrastructure and the related schemes envisage enhancement of socio-economic status of rural people. Continued emphasis on rural infrastructure and social sectors indicates the country's resolve towards ensuring inclusive growth.

India lives in villages. Around 69 per cent of India's population are rural. The large magnitude of the rural population, their prevailing socio-economic conditions and the quality of life calls for an all-round development in rural infrastructure to achieve the objectives of equitable and inclusive growth with social justice. The country, during decades of planning and democracy, has witnessed a series of strategic approaches to economic growth. The country's economists, planners and policy makers have always visualised a vibrant rural India and advocated improvement and expansion of rural socio-economic infrastructure.

A specific rural infrastructure programme called 'Bharat Nirman' was launched as a time-bound business plan. The six components included under the programme were irrigation, drinking water, electrification, roads, housing, and rural telephony. Considering the importance of infrastructure in the sustenance of rural economic growth, the government continued laying focus on creation of rural infrastructure through development plans

and other subject specific schematic interventions. In this context, this article reviews a few rural infrastructure initiatives which have immense potential to contribute establishing economically vibrant and egalitarian rural societies.

Irrigation Infrastructure

Creation of irrigation potential and expansion of installed capacity have been important policy objectives of India's development planning. By 2016-17, a large number of irrigation related projects were facing financial constraints and the investments made therein were treated as 'sunken investment'. During 2016-17, 99 on-going Major/Medium Irrigation projects were prioritized for early completion under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) - Accelerated Irrigation Benefits Programme (AIBP). These unfinished projects, with an additional irrigation potential of 76.03 lakh hectare, have been targeted for completion in phases up to December, 2019 along with their Command Area Development and Water Management (CADWM) works with an estimated cost of Rs. 77,595 crore.

The Union Budget 2018-19 had allocated Rs. 2,600 crore to PMKSY- *Har Khet ko Pani* and wished to review, revive and expedite the ground water irrigation interventions by taking up potential cases in 96 deprived irrigation districts where less than 30 per cent of the land holdings had got assured irrigation at that time. The Interim Budget 2019-20 considered the importance of expeditious actions and advocated efficient use of water in irrigation using micro-irrigation techniques, only after effective consultation with all the stakeholders. Interim Budget 2019-20 has set a long-term goal for achieving integrated water use efficiency.

As per a recent government estimate, the average annual water potential in the country is 1,869 Billion Cubic Meters (BCM)



THE DIGITAL INDIA REVOLUTION



India now **World Leader** in consumption of mobile data



Mobile and parts manufacturing companies up from 2 to more than **268**



Over 3 lakh Common Service Centres employing **12 lakh** people



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34 crore Jan Dhan bank accounts opened in five years

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whereas the utilizable water availability is only 1,137 BCM per annum that comprises 690 BCM of surface water and 447 BCM of replenishable ground water. The per capita water availability in India is reducing progressively due to increase in its population. The average annual per capita water availability in the years 2001 and 2011 was assessed as 1,816 Cubic Meters (CM) and 1,545 CM, respectively which may reduce further to 1,340 and 1,140 CM in the years 2025 and 2050, respectively. This calls for an integrated water conservation and user-interface irrigation scheme for ensuring maximum water use efficiency. Further, PMKSY through its components can provide end-to-end solutions in irrigation supply chain, viz. water sources, distribution network and farm level application provided this scheme is implemented effectively on the ground.

While the initiatives of the flagship irrigation scheme – PMKSY, public works programmes and public water conservation works of Ministry of Water Resources and Ministry of Rural Development are praiseworthy, it is desirable that the irrigation potential so created over the years should be utilized fully and the gap between the potential created and the actual utilization be narrowed. The full utilization of irrigation potential requires actions like (i) timely completion of field channels and drains; (ii) appropriate land leveling and shaping; and (iii) involvement of farmers in taking decisions on usability of such created potential. Engagement of water user associations, self-help groups and farmer collectives in the planning and execution phases of irrigation initiatives will ensure actualization of maximum intended benefits of the PMKSY.

Rural Drinking Water Supply

The achievement of target for providing access to safe drinking water to identified habitations shifted the government's focus to improving the quality of water supplied to targeted habitations. The National Rural Drinking Water Programme (NRDWP)'s concerted focus on the creation and sustaining the rural drinking water infrastructure resulted in the development of infrastructure and capacities for successful operation of drinking water supply schemes in rural areas. Timely corrective measures are a must for increasing the coverage of piped water supply in rural areas by restructuring NRDWP for making it more competitive, outcome-based and result-oriented.

Further, the country's long-term goal is to achieve 'Har Ghar Jal' by 2030, in line with the UN's Sustainable Development Goals, i.e. providing safe and adequate drinking water to each rural household. Interim Budget 2019-20 has allocated Rs. 7750 crores against Rs. 6611 crore budgeted for 2018-19 to expedite initiatives under NRDWP.

Studies indicate that the ever-growing dependence on groundwater and its unsustainable over-extraction are lowering the ground water table and adversely impacting the rural drinking water supply. The challenge before the government is to ensure (a) safe drinking water in the slipped back habitations through vigorous restoration of defunct bore pumps, carrying out repairs to water supply pipelines, augmentation of supply wherever required; and (b) sustainability of quality water supply to already covered under one or the other schemes. The need of the hour is to ensure convergence of various



rural development initiatives of like (viz. Mahatma Gandhi National Rural Employment Guarantee Act, watershed development, restoration of water bodies, etc.) backed by a need-based village-level water planning and budgeting.

Rural Sanitation

The world's largest behavioural change movement was planned and executed through India's Swachh Bharat Mission (SMB). With concerted efforts of the government and civil society as change makers, India could achieve 98 per cent rural sanitation coverage. Around 5.45 lakh villages have been declared "Open Defecation Free" by December 2018. The holistic programme has somewhat succeeded in changing the mind-set of the citizen by ensuring people's participation. SBM has witnessed construction of nine crore household toilets during 2014-15 and 2018-19 (December '18). Budgetary allocation to the construction of toilets, convergence with Pradhan Mantri Awaas Yojana and MGNREGA along with continuous monitoring of implementation of activities has contributed to the success of such a wide initiative of the government.

Rural Electrification

Power infrastructure plays a vital role in sustaining economic development of a country. The quality of power supply and power accessibility have been a matter of concern in rural India as capacity addition in this sector has been falling short of its targets/demand. In addition to Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY), the Government had launched Prime Minister Saubhagya Yojana for providing electricity to all households of the country. Under this scheme, four crore poor households were intended for providing with electricity connection free of charge in the Interim Budget 2019-20 with an outlay of Rs. 16,000 crore. The Ministry of Power, in association with Rural Electrification Corporation under DDUGJY and Saubhagya could provide 2.31 crore service connections to rural households. Considering the importance of this initiative, Interim Budget 2019-20 has allocated Rs. 4,066 crore against 2018-19 budget outlay of Rs. 3,800 crore.

To ensure quality and sustained power supply in rural areas, we now need to switch-over from free or subsidy-driven power distribution system to a competitive user-based revenue collection and sharing model. The time has come to ensure active involvement of grass-root institutions like Panchayati Raj Institutions (PRIs), Non-Government Organisations (NGOs), Cooperatives, etc. in revenue collection, local management, operation

and maintenance of power infrastructure in rural areas to assure quality and sustainable supply of electricity.

Rural Roads

Pradhan Mantri Gram Sadak Yojana (PMGSY) – a one-time special intervention provides rural connectivity, by way of single all-weather road, to the eligible unconnected habitations in the core network. From the year of implementation in 2000, out of 15.80 lakh eligible unconnected habitations in 250+ and 500+ population categories, 17.84 lakh habitations have been connected with pucca roads by December 31, 2018. As in December, 2018, out of a cumulative sanction of 6.50 lakh km road length under PMGSY, 82 per cent (5.34 lakh kms) of roads have been completed.

The PMGSY roads are known for their quality of construction and durability. To ensure quality in construction of rural roads, vigorous quality control measures were followed, backed by independent quality checks and measurements. Since all the eligible rural habitations have been connected, it is required now to strengthen and widen its ambit further to include major link routes which connect habitations to agricultural and rural markets, higher secondary schools and hospitals/health centres. Considering inclusion of such linkages, Rs. 19,000 crore was allocated to PMGSY in Interim Budget 2019-20. This allocation is 27 per cent more than that of the Budget 2018-19.

Rural Housing

Pradhan Mantri Awaas Yojana-Rural (PMAY-R) came into effect from 01.04.2016 to fulfill the Government's vision of "Housing for All by 2022". The scheme framework allows inclusion of the beneficiaries not covered under Socio-Economic Caste Census. It provides for a separate beneficiary list to be recorded in the Gram Sabha resolution. Under PMAY-R, against the target of 1.0 crore houses in the first phase (2016-17 to 2018-19), 94,45,886 houses got sanctioned as on 27.12.2018. Interim Budget 2019-20 has allocated Rs. 19,000 crore for PMAY-R. While the physical progress in the provision of rural housing and initiatives for inclusion of excluded eligible beneficiaries under rural housing projects is laudable, the involvement of beneficiaries in the construction of the house should be the key. For effective implementation of the scheme, the beneficiaries need to actively participate throughout the construction process



i.e. making own arrangements for procurement of construction material, engaging skilled workmen, ensuring convergence with water and sanitation related programmes and also contributing family labour. The beneficiaries should also take their own decision about the manner of construction of the house. The active participation of beneficiary in the housing project like PMAY-G will result in economy in cost, ensure quality of construction, lead to greater satisfaction and acceptance of the house by the beneficiary himself/herself.

Rural Telephone Connectivity

India is trying to transform herself as a digitally empowered society by meeting the information and communications needs of citizens and enterprises. This is possible only when universal, strong and affordable digital communications infrastructure and services are established. The country has witnessed a rapid expansion of telecommunication in the last decade. This has led to an intense competition amongst various service providers which ensured quality services at affordable prices. The revolution in the field of communication has the potential in supporting the rural folk in improving their quality of life and livelihoods.

To provide every Indian village with telephone access and to cover difficult areas, additional mobile towers have been sanctioned. While 2,341 mobile towers are proposed for Left Wing Extremism affected areas, 6,673 towers are planned for North Eastern Regions to cover 8,621 identified uncovered villages. Efforts are also being made to install towers for National Highways to strengthen transmission network. The BharatNet project aims at creating network to connect all 2.5 lakh Gram Panchayats by broadband connectivity. As in December 2018,

3,03,560 Km Optical Fibre Cable laying works got finished and equipment installation completed at 1,16,543 Gram Panchayats. The policy of connecting village panchayats with broadband will ensure seamless transmission of information and empower these grass-root level democratic institutions.

Conclusion

Infrastructure provides the basic framework for economic and social progress of a country. Rural infrastructure, inter alia, involves irrigation, rural housing, rural water supply, rural electrification and rural telecommunication connectivity. The initiatives for building rural infrastructure and the related schemes envisage enhancement of socio-economic status of rural people. A considerable part of the total expenditure under the programme is considered as development or capital expenditure. Many projects aiming at enhancing rural infrastructure are also routed through the National Bank for Agriculture and Rural Development which is the apex financial body for agriculture and rural infrastructure.

As a follow up action to the rural infrastructure building initiatives, a synchronized approach is required to establish rightful convergence with various other development oriented programmes already in operation like programmes for alleviating poverty, generating gainful employment, ensuring social security, enhancing standard of health, hygiene, sanitation and education being implemented by Ministries/Departments of Panchayati Raj, Rural Development, Drinking Water and Sanitation, Water Resources, Agriculture, Information Technology and Land Resources, etc.

The development of rural India is an imperative for inclusive and equitable growth. The continued emphasis on rural infrastructure and social sectors indicates the country's resolve towards ensuring inclusive growth. Considering the implementation issues and challenges of execution of these plans and programmes at the grass-root level, it is expected that the programme implementing agencies would bring in good governance and follow best practices to maximise the benefits of such development intervention.

(The author is Director, Vaikunth Mehta National Institute of Cooperative Management, Ministry of Agriculture and Farmers Welfare. Email: tripathy123@rediffmail.com)

HEALTHCARE INTERVENTIONS FOR RURAL INDIA

Dr. Shashi Rani

The emphasis of National Health Policy is on establishing the 'continuum of care', for delivery of health services to protect health of women and children in an integrated manner at all life stages such as adolescence and reproductive age, pre and post-natal period, and early childhood. It is planned that healthcare services should cover all levels of healthcare systems to reach out to rural population at household level, community and village level, through ASHA, ANM, AWW and Ayushman Mitra.

The National Health Policy (NHP) 2017 of India aimed to provide Preventive and Promotive Healthcare and Universal access to good quality healthcare services through the mix of public and private healthcare services. The policy emphasizes reorienting and strengthening the Public Health Institutions across the country, so as to provide universal access to free drugs, diagnostics and other essential healthcare. The NHP 2017, expressed its vision for Universal Health Coverage and creating affordable and quality healthcare for all. The policy is assuring availability of free, comprehensive primary healthcare services, for all aspects of reproductive, maternal, child and adolescent health and for the most prevalent communicable, non-communicable and occupational diseases in the population. It also talked about reinforcing trust in public healthcare system. The Government intended to achieve various targets by involvement of all possible stakeholders.

The emphasis is on establishing the 'continuum of care', for delivery of health services to protect health of women and children in an integrated manner at all life stages such as adolescence and reproductive age, pre and post-natal period, and early childhood. It is planned that healthcare services should cover all levels of healthcare systems to reach out to rural population at household level, community and village level, through ASHA, ANM, AWW and Ayushman Mitra. In addition to that outpatient and inpatient healthcare facilities, services are planned to cover through Ayushman Bharat scheme by creation of health and wellness centres in a phased manner and financial protection through insurance for universal coverage.

Key Initiatives and Interventions

Ayushman Bharat: As part of Ayushman Bharat programme, two major initiatives in health sector have been taken. First is *Health and Wellness Centres* and second is the *National Health Protection Scheme (NHPS)*. The goal of this intervention is to address health needs in a holistic manner in primary, secondary and tertiary care systems, covering both prevention and health promotion. The National Health Policy 2017 has envisioned Health and Wellness Centres as the foundation of India's health system. It is expected that under this, 1.5 lakh centres will bring healthcare system closer to the homes of people. Also that these centres will provide comprehensive healthcare, including for non-communicable diseases and maternal and child health services, free essential drugs and diagnostic services. The Interim Budget 2019-20 has allocated Rs.1,200 crore for this flagship programme. Contribution



MASSIVE SCALE UP OF HEALTHCARE



World's largest healthcare programme **Ayushman Bharat** launched



Has benefitted almost 10 lakh patients already



Medicines at affordable prices made available through **Pradhan Mantri Jan Aushadhi Kendras**



Prices of essential medicines, cardiac stents and knee implants reduced



21 AIIMS operating/already established - 14 announced since 2014:
22nd AIIMS to be set up in Haryana



involving masses through Jan Andolan for their participation on nutrition through various activities, among others. NNM targets to reduce stunting, under-nutrition, Anaemia (among young children, women and adolescent girls) and reduce low birth weight by 2 per cent, 2 per cent, 3 per cent and 2 per cent per annum respectively. Although the target to reduce Stunting is at least 2 per cent p.a., Mission would strive to achieve reduction in Stunting from 38.4 per cent (NFHS-4) to 25 per cent by 2022 (Mission 25 by 2022). All the States and districts will be covered in a phased manner i.e. 315 districts in 2017-18, 235 districts in 2018-19 and remaining districts in 2019-20.

of private sector through corporate social responsibility (CSR) and philanthropic institutions in adopting these centres is also envisaged.

The second programme under Ayushman Bharat is National Health Protection Scheme, which will cover over 10 crore poor and vulnerable families (approximately 50 crore beneficiaries) providing coverage upto 5 lakh rupees per family per year for secondary and tertiary care hospitalization. The beneficiaries will not be required to pay any charges and premium for the hospitalisation expenses. The benefit also includes pre- and post-hospitalization expenses. Under NHPM, the provision is of coverage of medical and hospitalisation expenses at secondary care and tertiary care procedures. It is planned to have an 'Ayushman Mitra' to assist patients and coordinate with beneficiaries and the hospital in each empanelled public and private hospital.

The National Nutrition Mission: The National Nutrition Mission (NNM) has been set up with a three year budget of Rs.9046.17 crore commencing from 2017-18. The NNM is a comprehensive approach towards raising nutrition level in the country on a war footing. It is comprising mapping of various Schemes contributing towards addressing malnutrition, including a very robust convergence mechanism, ICT based Real Time Monitoring system, incentivizing States/UTs for meeting the targets, incentivizing Anganwadi Workers (AWWs) for using IT based tools, eliminating registers used by AWWs, introducing measurement of height of children at the Anganwadi Centres (AWCs), Social Audits, setting-up Nutrition Resource Centres,

Poshan Abhiyan: This is based on convergence and collaboration of all important sectors considered to be important for healthy growth of the child for first 1,000 days. Thus, it covers all schemes, Beti Bachao Beti Padhao, Swachh Bharat, Adolescent Care, Prenatal and Post Natal Care, Supplementary Nutrition, Breast Feeding Counseling, Immunization, Growth Monitoring. Under Poshan Abhiyan, the Government has fixed targets to reduce stunting, under-nutrition, Anaemia (among young children, women and adolescent girls) and reduce low birth weight by 2 per cent, 2 per cent, 3 per cent and 2 per cent per annum respectively. Mission also strives to achieve reduction in Stunting from 38.4 per cent (NFHS-4) to 25 per cent by 2022. Outreach worker or frontline worker will cover all the aspects of essential healthcare for the mother and child. Accredited Social Health Activist (ASHA) and Anganwadi Worker (AWW) are supposed to work in collaboration to improve the institutional visits, nutrition outcomes, physical and mental growth of the child through home visits to create awareness for proper utilisation of all the facilities and benefits provided under this scheme. In this programme, greater flexibility is given to states for better implementation, and incentives for good performance are also to be provided to states and districts. The aim is to make this programme as "Jan Adolan" (mass movement) to educate the people on nutritional aspects through various methods of Information, Education and Communication (IEC), Coverage of districts in a phased manner is 315 districts in 2017-18, 235 districts in 2018-19 and remaining districts in 2019-20.

Scheme for Adolescent Girls (SAG): The special intervention for adolescent girls called SAG was devised in the year 2010 using the ICDS infrastructure with the aim of breaking the inter-generational life-cycle of nutritional and gender disadvantage thus providing a supportive environment for self-development of adolescent girls. Realizing the multi-dimensional needs of out of school pre-adolescent girls (11-14 years) and with an aim to motivate these girls to join school system, the Government approved implementation of restructured Scheme for Adolescent Girls (SAG) to focus on out of school adolescent girls in the age group of 11-14 years. It is planned that Scheme for Adolescent Girls-SAG is to be implemented using the platform of Anganwadi Services of Umbrella ICDS Scheme through Anganwadi Centers (AWCs).

The key objective of this scheme is to facilitate, educate and empower Adolescent Girls so as to enable them to become self-reliant and aware citizens. To improve the health status, the emphasis is on to enabling the AGs for self-development and empowerment, improving their nutrition and health status, promoting awareness about health, hygiene, nutrition, providing information/guidance about existing public services such as Primary Health Centers, Rural Hospitals/CHCs, Post Office, Bank, Police Station, etc.

SAG is being implemented in 205 districts and has been expanded in phased manner. In Phase-1(2017-18), the scheme was extended with revised

financial norms to additional 303 high burden districts identified under NNM. In Phase-2 (2018-19), the scheme has been extended with revised financial norms to all the districts of the country w.e.f 01.04.2018.

The scheme is covering two components: First is *Nutrition Component*, in which each out of school AGs in the age group of 11-14 years registered under the scheme will be provided supplementary nutrition similar to that of pregnant women and lactating mothers under ICDS containing 600 calories, 18-20 grams of protein and micronutrients for 300 days in a year. Nutrition to be given in the form of Take Home Ration (THR) or Hot Cooked Meals (HCM) whichever is feasible. The second component is *Non-Nutrition Component*. This scheme aims at motivating out of school girls in the age group of 11-14 years to go back to formal schooling or skill training under non-nutrition component of the scheme. The other services under non-nutrition component are IFA supplementation, Health check-up and Referral services, Nutrition and Health Education, Life Skill Education and Counseling/Guidance on accessing public services.

Pradhan Mantri Matru Vandana Yojana: The Maternity Benefit Programme is implemented from 01.01.2017, in all the districts of the country. The programme is named as 'Pradhan Mantri Matru Vandana Yojana' (PMMVY). Under PMMVY, a cash incentive of Rs 5,000/- is provided directly to the Bank / Post Office Account of Pregnant Women and

In the Interim Budget (2019-20), the key highlights related to health sector provisioning especially for women, children and poor are as follows:

- World's largest healthcare programme, Ayushman Bharat, for nearly 50 crore people.
- Jan Aushadhi Kendras providing medicines at affordable prices to poor and middle class.
- Allocation for Integrated Child Development Scheme (ICDS) increased by over 18 per cent to Rs. 27,584 crore in BE 2019-20.
- Maternity leave extended to 26 weeks.
- Financial support for pregnant women under Pradhan Mantri Matru Vandana.
- 6 crore free LPG gas connections provided under Ujjwala Yojana ; All 8 crore by next year.
- India has achieved 98 per cent rural sanitation coverage and 5.45 lakh villages have been declared "Open Defecation Free".
- Aspirational Districts Programme launched for development in 115 most backward districts.
- Rs. 1,70,000 crore spent during 2018-19 for cheaper food grains to poor and middle class.
- 70 per cent of MUDRA Loan availed by Women.
- Rural roads' construction tripled under the PMGSY.
- Targeted expenditure to bridge urban-rural divide & to improve quality of life in villages.

Lactating Mothers (PW&LM) for first living child of the family subject to fulfilling specific conditions relating to Maternal and Child Health. PMMVY is implemented using the platform of Anganwadi Services scheme of Umbrella Integrated Child Development Services (ICDS) under Ministry of Women and Child Development in respect of States/UTs implementing scheme through Women and Child Development Department/ Social Welfare Department and through Health system in respect of States/ UTs where scheme is implemented by Health and Family Welfare Department. PMMVY is implemented through a centrally deployed Web Based MIS Software application and the focal point of implementation would be the Anganwadi Centre (AWC) and ASHA/ANM workers.

Since only government hospitals have authority to register/update the MCP Card, beneficiary taking services from private hospitals cannot avail the benefit of the scheme as MCP card details are mandatory for claiming any instalment under PMMVY. However, if the requisite conditions are duly certified by a government doctor or officer/functionary of the Health Department not below the rank of Auxiliary Nurse Midwife (ANM), the beneficiary can claim maternity benefit under PMMVY and the claim should be accepted by the Field Functionary (AWW/ANM/ASHA).

Way Forward

The Rural India is exposed to challenges that are having direct impact on health of women and children living in this area. Focus on primary healthcare through outreach activity, household coverage, availability of quality public healthcare services and appropriate financial support for secondary and tertiary care with more accountable and transparent system is required. The strengthening of primary healthcare system is required in order to address the factors that have direct impact on health status of rural population. The expansion of Public Health Education to create more professionals is required, as many programme and schemes required skilled personnel with sound knowledge of socio-economic and cultural aspects of health and medicine. To assess the standards of public health services, government developed Indian Public Health Standards (IPHS) and all the healthcare facility should be monitored and regulated according to these standards. For

effective implementation of Ayushman Bharat programme, the presence of public and private healthcare services in equitable manner is required.

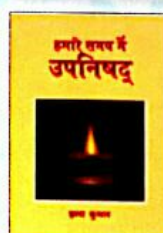
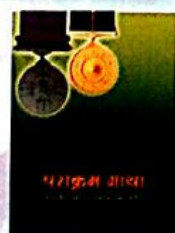
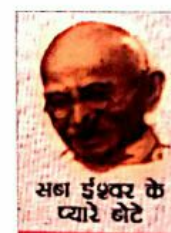
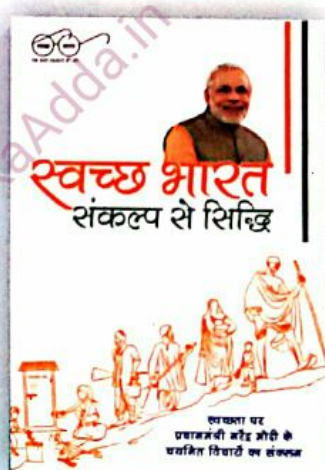
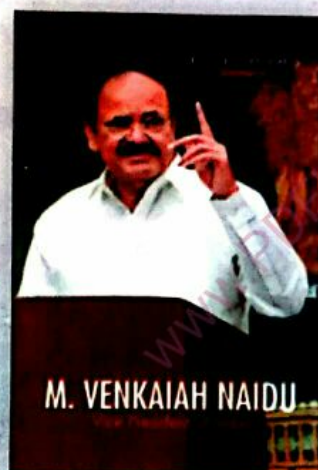
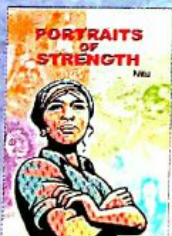
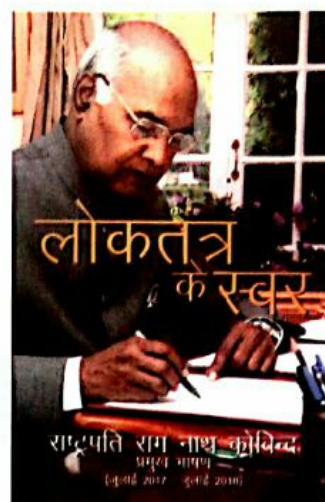
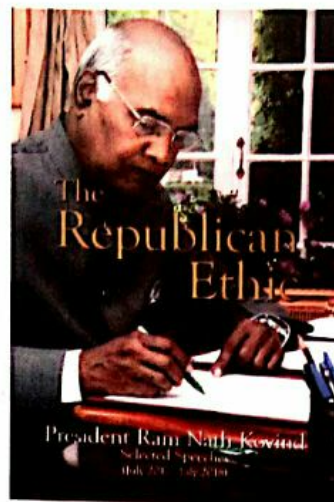
The primary healthcare programme which gives special emphasis on preventive and promotive services is the backbone of India's health system. The majority of population bear out of pocket expenditure for out patient services for illnesses which are preventive in nature and if timely interventions by the state would be in place this burden can be reduced easily. The equal contribution of private sector along with public service providers is not only important to reduce burden of many communicable and non-communicable diseases, but also to create healthy, well-informed and empowered people in order to maintain healthy life and to avoid unnecessary medical interventions. The Gram Panchayats are the most important unit of local government, these Gram Panchayats should be engaged in decision making through capacity building programme in order to create more empowered communities.

References

1. National Health Policy 2017, Government of India
2. Ayushman Bharat scheme, accessed at <https://www.pmjay.gov.in/about-nha>
3. National Nutrition Mission, accessed at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=177166>
4. Poshan Abhiyan, accessed at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=181786>
5. NRHM Government of India, accessed at <http://nhm.gov.in/images/pdf/about-nrhm/nrhm-framework-implementation/nrhm-framework-latest.pdf>
6. NFHS-4, Government of India, accessed at http://rchiips.org/NFHS/factsheet_NFHS-4.shtml
7. RHS 2018, accessed at [https://nrhm-mis.nic.in/Pages/RHS2018.aspx?RootFolder=per cent2FRURAL per cent20HEALTH per cent20STATISTICS per cent2F per cent 28A per cent 29 per cent 20RHS per cent20-](https://nrhm-mis.nic.in/Pages/RHS2018.aspx?RootFolder=per%20FRURAL%20per%20HEALTH%20per%20STATISTICS%20per%20F%20per%2028A%20per%2029%20per%20RHS%20per%2020)
8. Interim Budget 2019-20, Ministry of Finance, GOI accessed at <https://www.finmin.nic.in>

*(The author is Assistant Professor, Department of Social Work, University of Delhi.
(Email: shashi.socialwork@gmail.com)*

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MATERNAL NUTRITION IN INDIA –POLICIES AND PROGRAMMES

Jyoti Sharma

Maternal undernutrition is a significant risk factor for stunting and underweight among children. Inadequate nutrient intake, early and multiple pregnancies, poverty and gender inequality all contribute to poor maternal nutrition. The National Nutrition Strategy launched in 2017 envisages a 'Kuposhan Mukh Bharat'—linked to Swachh Bharat and Swasth Bharat focusing on improving healthcare and nutrition of most vulnerable and critical age groups including mothers and children through direct and nutrition sensitive interventions.

Maternal malnutrition in low-income and middle-income countries encompasses both undernutrition and a growing problem with overweight and obesity. Body-mass index, measured as $(\text{weight-kg}/\text{Height-meter})^2$ is indicative of maternal nutritional status. Maternal undernutrition is a significant risk factor for stunting and underweight among children. Inadequate nutrient intake, early and multiple pregnancies, poverty and gender inequality all contribute to poor maternal nutrition.

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POSHAN Abhiyaan (National Nutrition Mission) is a flagship programme of the Ministry of Women

and Child Development (MWCD), Government of India, which ensures convergence with various programmes i.e., Anganwadi Services, Pradhan Mantri Matru Vandana Yojana (PMMVY), Scheme for Adolescent Girls (SAG) of MWCD Janani Suraksha Yojana (JSY), National Health Mission (NHM), Swachh-Bharat Mission, Public Distribution System (PDS), Department Food & Public Distribution, Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and Ministry of Drinking Water and Sanitation.

The NNM is a comprehensive approach towards raising nutrition level in the country on a war footing.

The Integrated Child Development Services (ICDS) and National Health Mission (NHM) are the two largest platforms that address maternal nutrition. The National Health Mission (NHM) positions itself to alleviate supply side challenges



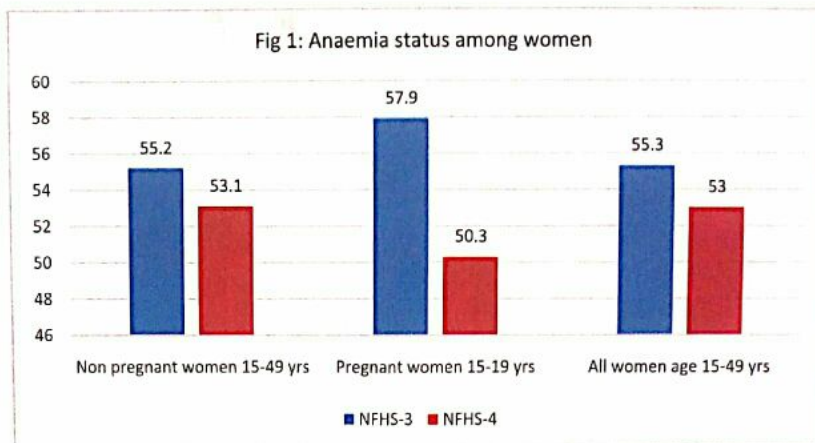
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by addressing infrastructural and service delivery issues. JSY has been a flagship intervention of conditional cash transfer to incentivize facility-based deliveries. The NHM program includes early registration of pregnancy, providing micronutrient supplementation, birth planning, institutional birth, post-delivery visit and reporting, family planning and counselling, and behaviour change communication activities.



Maternal Anaemia

Anaemia is a significant health problem in India, especially among women, adolescent girls and children. At least half of all women in India are anaemic, regardless of age, residence or pregnancy status with little or no change. 50 per cent pregnant and 58 per cent breastfeeding women are anaemic. Moreover, there has been little change in the prevalence of anaemia in the past decade even in states where access to prenatal care has improved dramatically.

India first launched a nationwide program for the prevention of anaemia among pregnant women in fourth five-year plan (1969-74) and since the program has expanded and evolved

multiple times in light of program performances and new scientific evidences. In 2016-17, to bring synergy in the existing iron supplement programs and schemes, Ministry of Health and Family Welfare developed the National Iron+ Initiative that embraced all the programs across all population categories for addressing anaemia. The initiative is an attempt to oversee interventions addressing Iron deficiency anaemia systematically across all life stages.

The distribution of IFA supplements to pregnant women has been part of the national policy for the prevention and treatment of maternal anaemia since the 1970s.

Table 1 – Existing platforms for maternal nutrition interventions

Intervention	Target Population	Platform
Micronutrient supplementation		
IFA supplementation	Pregnant women, Adolescent girls & Out-of-school adolescent girls	ASHAs, primary health system, ICDS
Calcium supplementation		Secondary schools, ICDS ANM, primary health system
Food-based strategies		
Take-home food rations	Pregnant women, lactating women and adolescent girls	ICDS, SABLA scheme
Hot meals	Primary school children	ICDS, Government primary schools
Distribution of fortified wheat flour	Households (selected state and districts)	PDS
Distribution of double fortified salts	Households (selected states and districts)	PDS
Growth Monitoring		
Weight monitoring in pregnancy	Pregnant women	Primary Health System ICDS
Education and counselling		
Diet and prevention of Anaemia	Pregnant women, Out-of-school adolescent girls, adolescent girls	ICDS, Secondary Government Schools
Adolescent health and hygiene	Mother of 0-2 yr children, pregnant women	ASHA, primary health system
Women's health and hygiene	Out-of-school adolescent girls	ICDS
	Poor Women	Self-Help Groups

Recently launched Anaemia Mukh Bharat Campaign is planned to strengthen evidence based strategies with Target-setting, Strengthening procurement and supply chain management, Intensive behaviour change communication and robust monitoring and review. Materials developed under the Anaemia Mukh Bharat strategy such as communication resource material, survey data, targets, state and district-wise denominators, and state and district-wise quarterly progress reports are available on Anaemia Mukh Bharat portal.

Addressing undernutrition among women

Maternal short stature, poor nutritional status before conception, inadequate food intake and low weight gain during pregnancy is responsible for

birth of Low birth weight babies. According to the NFHS-4, 23 per cent of women are undernourished and have BMI<18.5. Women continue to be at risk of low BMI throughout their adult life and their childbearing years. Food intake during pregnancy, supplemental food programs and weight gain during pregnancy are important measures for maternal undernutrition.

Improving diet of pregnant women at home and Supplemental Food

Under the National Food Security Act, 2013 (NFSA), a subsidized staple food under targeted public distribution system (TPDS) is provided to 50 per cent of the urban and 75 per cent of the rural population. National nutrition monitoring bureau data indicates

Table 2- Policies for control of Anaemia

Policy	Year	Guidelines
Prophylaxis against Nutritional Anaemia among Mothers and Children	1971	Recommended dose 60 (mg) of elemental iron and 500 (µg) of folic acid during pregnancy for non-anaemic women
National Nutritional Anaemia Control Program (NNACP)	1991 & 1997	Iron amount per tablet increased to 100mg, folic acid content retained at 500 µg. All PW advised to consume 100 IFA tablets (1 tablet/day) regardless of Hb levels; severe cases advised 2 tablets/day. Role of ICDS workers in IFA distribution stipulated. Discussed preventive measures for improving dietary intake of iron and vitamin C. Identification & treatment of severely anaemic cases
Tenth Five year Plan	2002-07	Mentions about parenteral iron as a measure for correction of severe anaemia, Hb levels between 5 and 8 g/dL for women who do not have any obstetric or systemic complication Hospital admission and intensive personalized care prescribed for women with Hb less than 5 g/dL
Weekly Iron Folic Acid for adolescents	2011	Weekly Iron and Folic Acid Supplementation for Adolescents recommended Health sector responsible for reaching adolescents through school health program & ICDS through SABLA program for the non-school going girls Dietary counseling part of the policy Deworming is administered (albendazole 400 mg) every 6 months for control of helminthes infestation.
National iron+ initiative	2013	Brings together the existing programs for IFA supplementation and introduces new age groups. 6 months to 5 years (pre-school children): bi-weekly iron supplementation (1 ml of IFA syrup containing 20 mg of elemental iron and 100 µg of folic acid) Children studying in classes I to V in government and government-aided schools or children who do not go to school(5–10 years of age): weekly supplementation (tablet with 45 mg of elemental iron and 400 µg of folic acid) Adolescents (10–19 years of age): weekly supplementation (tablet with 100 mg of elemental iron and 500 µg of folic acid) Pregnant and lactating women: 100 days of supplementation (tablet with 100 mg of elemental iron and 500 µg of folic acid) Women of reproductive age: weekly supplementation (tablet with 100 mg of elemental iron and 500 µg of folic acid).



supplement pregnant women's diets, it is often shared with family members as per prevailing gender norms and cultural practices.

According to NFHS 4, 51.5 per cent of pregnant women in areas with an Anganwadi Centre received supplementary food, and even fewer women (47.5 per cent) received supplemental food during lactation. Key reasons for the poor coverage and consumption were:

- Intra-household distribution of THR. Many women reported sharing the THR with other family members. This practice has been identified as major barrier to the success of food-based maternal nutrition program.
- Poor quality of THR has been cited by many women in reports. Beneficiaries reported THR varied in tastes and quality. In Uttar Pradesh many women complained that quality of food given in the government centres was inconsistent and unfit for human consumption.
- Inadequate access to AWC services by poor families due to workload and distance has also affected the uptake of THR.

that consumption of cereals is adequate while that of pulses is below 50 per cent of the recommended dietary intake (RDI). The analysis highlights that most of the energy and protein of mothers are derived from cereals, while the quality of protein intake remains poor. The intake of micronutrients remains inadequate; about 26 per cent households consumed less than 50 per cent RDA of iron, while 80 per cent consumed less than 50 per cent RDA of vitamin A.

In addition to the food through TPDS, supplemental food is provided to pregnant women on a weekly basis as a Take Home Ration (THR) or hot cooked meal (in few states) at Anganwadi Centres as part of the Integrated Child Development Services scheme. Although the food is intended to

In India, Janani Suraksha Yojana (JSY) pays Rs. 1,400 to women for institutional delivery, and

Table 3: Schemes for improving status of Adolescent Girls

Scheme	Year	Platform	Target group	Objective
Adolescent girls scheme and Kishori Shakti yojana	2000	WCD	11-18 years	Impart vocational skills and provide nutrition & health education
Nutrition Programme for Adolescent Girls (NPAG)	2002-03			
SABLA	2010	WCD	11-18 years	Replaced KSY and NPAG Provide • Supplementary nutrition-600 calories, 18-20 grams of protein and micronutrients per day • IFA tablets • Health check-ups every 3 months • Life Skills Education • Vocational training
Support to Training and Employment Programme for Women (STEP)		WCD	Age group of 16 years and above	Provide skills to give employability
Beti Bachao Beti Padhao		WCD		



pay Rs. 600 to ASHA for each woman they bring to a health facility for delivery. These incentives have been instrumental in improving institutional delivery from 38.7 per cent in 2005-06 to 79 per cent in 2015-16.

Pradhan Mantri Matru Vandana Yojana' (PMMVY), is for all pregnant women and lactating mothers with an objective to provide partial compensation of Rs. 5,000 for the wage loss in terms of cash incentives so that the woman can take adequate rest before and after delivery of the first living child. However, the logistics surrounding payments are too onerous and according to NFHS-4, about 44 per cent mothers from rural areas and 21.4 per cent from urban areas received assistance under JSY. The success of PMMVY in coming years would depend upon ease of payment made to beneficiaries.

Addressing social determinants

Age at marriage

Adolescent girls carry disproportionate amount of low BMI burden in India due to gender norms that leads to differential care practices. Cultural practices of early marriage lead to conception and delivery of children at a time of the lives when they are most at a risk for low BMI. According to NFHS-4, 14.7 per cent women had married before age 15; 40.1 per cent had married by age of 18 and 59 per cent married before reaching age 21.

There are a range of programs addressing the

issue of early marriage but very few programs specifically focus on this. As the problem is multi-factorial, a multi-pronged strategy is needed.

Many of the schemes have become popular and have increased enrolment of girls in schools and in skill development programs.

Age at first birth

In India the issue of early pregnancy and marriage is sensitive and deeply embedded in cultural norms and practices. In India a young married woman becomes pregnant quickly, does not employ temporary family planning, and only limits births by permanent methods when the family is considered complete. Family planning services till lately emphasized societal benefits of family planning (e.g., population control) rather than the individual/family benefits (e.g., better health and nutrition of mother and children). Government policy and cultural factors (e.g., strong preference for boys and pressure on newly married couples to demonstrate fertility) are some important reasons why the majority of couples rely on permanent rather than temporary contraceptive methods.

Addressing Gender Bias through Beti Bachao Beti Padhao

Coordinated and convergent efforts are needed to ensure survival, protection and empowerment of the girl child; therefore, the Government has announced Beti Bachao Beti Padhao (BBBP) initiative. The Beti Bachao, Beti Padhao (BBBP) Scheme has been introduced in October, 2014 to address the issue of declining Child Sex Ratio (CSR). The objective of the scheme is to celebrate girl child and enable her education. Currently scheme was implemented in 100 districts. In 2018 this scheme was expanded to 640 district across the country.

(The author is Additional Professor, Indian Institute of Public Health Delhi, Public Health Foundation of India.

Email: jyoti@iiphd.org

CONNECTIVITY: TRANSFORMING RURAL INDIA

Siddhartha P Saikia

DigiGaon or Digital Village is conceptualised as a connected village where citizens can avail various e-Services of the Central and State Governments, and private players in a rural and remote villages in the country. These DigiGaons are projected to be change agents, promoting rural entrepreneurship and building rural capacities and livelihoods through community participation and collective action.

The Infrastructure is the backbone of any nation's development and quality of life. Whether it is highways or railways or airways or even digi-ways, the Government has gone beyond incremental growth to attain transformative achievements.

"India in the 21st Century must strive to meet the aspirations of its citizens where benefits and services reach the doorsteps of citizens and contribute towards a long-lasting positive impact." The Digital India Programme aims to transform India into a digitally empowered society and knowledge economy by leveraging IT as a growth engine of new India.

The Common Service Centres (CSCs) act as access points for delivery of various electronic services to villages in India. CSCs are poised to touch over 2.50 lakh Gram Panchayats and 700 Digital villages to be established.

The CSC movement has transformed into a movement of change bringing services like

banking, pensions, digital literacy and telemedicine to rural and remote villages through electronic infrastructure.

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The post offices are also being made multi service delivery points and all the CSCs services can be delivered to citizen through the post offices. Postal department has also got a payment bank license and with collaboration between (CSC SPV) Common



Services Center-Special Purpose Vehicle and postal department all the CSC across the country shall be able to provide the banking services to the citizens. With this, banking services can be made available to each individual in less than two years' time.

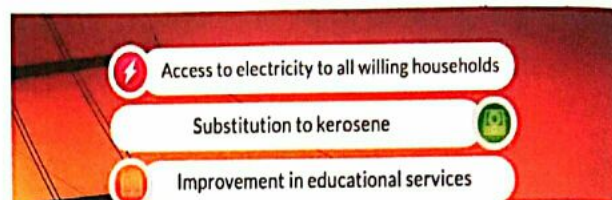
One of the focus areas of Digital India program is to promote digital literacy. The Government envisages making at least one person e-literate in every household. CSCs across the country can play a critical role in taking digital literacy to the remotest corners of the country. Already more than two lakh persons have been trained and certified as digitally literate across the country. The youth trained under this scheme will further develop their digital skills to become successful change agents and effectively participate in nation building.

Quality and affordable healthcare is one of the emerging needs for citizens in rural areas. CSC has been delivering tele-consultation services with support from a few private hospitals in some areas and now with this initiative, the tele-consultation services are being extended to 60,000 CSCs across



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SAUBHAGYA



the country.

CSCs will also provide diagnostic services and promote sale of generic drugs through collaboration with Ministry of Health – by setting up of the Jan Aushadhi Stores. With the availability of tele-consultation, diagnostic facilities and generic drugs stores – it can redefine the extension of affordable and quality healthcare to the citizen especially in rural India.

Table 1: The Vision areas of Digital India

Infrastructure as Utility to Every Citizen:

- ✓ High speed internet as a core utility shall be made available in all Gram Panchayats.
- ✓ Cradle to grave digital identity - unique, lifelong, online and authenticable.
- ✓ Mobile phone and Bank account would enable participation in digital and financial space at individual level.
- ✓ Easy access to a Common Service Centre within their locality.
- ✓ Shareable private space on a public Cloud.
- ✓ Safe and secure Cyber-space in the country.

Governance and Services on Demand:

- ✓ Seamlessly integrated across departments or jurisdictions to provide easy and a single window access to all persons.
- ✓ Government services available in real time from online and mobile platforms.
- ✓ All citizen entitlements to be available on the Cloud to ensure easy access.
- ✓ Government services digitally transformed for improving Ease of Doing Business.
- ✓ Making financial transactions above a threshold, electronic and cashless.
- ✓ Leveraging GIS for decision support systems and development.

Digital Empowerment of Citizens:

- ✓ Universal digital literacy.
- ✓ All digital resources universally accessible.
- ✓ All Government documents/ certificates to be available on the Cloud.
- ✓ Availability of digital resources / services in Indian languages.
- ✓ Collaborative digital platforms for participative governance.
- ✓ Portability of all entitlements for individuals through the Cloud.

(Source: Press Information Bureau)

National Health Agency (NHA), which is the apex body for the implementation of Ayushman Bharat-National Health Protection Mission (AB-NHPM), and Common Service Centres (CSC) scheme under the Digital India Programme, have signed an MoU to provide information and eligibility validation services to beneficiaries, especially in remote areas. As the benefits under AB-NHPM are based on entitlement and not on enrolment, over 3 lakh CSCs spread across the rural India can become the key point of information for potential beneficiaries and help in validating their entitlement.



CSC will be provided access to Beneficiary Identification System (BIS), which helps in confirming application from 'entitled' beneficiaries using SECC and RSBY databases. Validation of entitled beneficiary through BIS will ensure timely information upto the last mile, facilitating benefits under Ayushman Bharat. The BIS has already been designed and pilot testing is underway across various States.

Digital India will not be successful without the affordable and regular access to electricity. Rural electrification is the backbone of rural economy and a basic input for rapid rural development. It is also the main infrastructure for ensuring speedy growth of the agriculture sector and agro-based industrial structure in rural areas.

Viable and reliable electricity services result in increased productivity in agriculture and labour, improvement in the delivery of health and education, access to communications, improved lighting after sunset, facilitating the use of time and energy-saving mills, motors, and pumps, and increasing public safety through outdoor lighting. The demand of power in rural areas is increasing day by day due to changing consumer base, improving living standards for which augmentation of rural infrastructure needs to be regularly undertaken.

Under 'Saubhagya Yojana', free electricity connection is provided to households. By March, 2019, all willing families will get electricity connection. At the same time, 143 crore LED bulbs have been provided by the private sector. This has resulted into a savings of approximately Rs. 50,000 crore per year in electricity bills of poor and middle class families.

Under Saubhagya, free electricity connections to all households (both APL and poor families) in rural areas and poor families in urban areas are being provided. Rural Electrification Corporation (REC) has been designated as its nodal agency for the Saubhagya scheme. DISCOMs or the state electricity distribution utilities organize camps in villages or cluster of villages to facilitate on-the-spot filling up of application forms including release of electricity connections to households.

They also adopt innovative mechanism through dedicated web-portal and mobile app for collection and consolidation of application form in electronic mode and also capturing process of release of electricity connections.

The focus has been on connecting the entire rural India with good quality roads.

Table 2: Digital India helping Farmers

- ✓ Number of farmers registered on M-kisan portal for receiving agro-advisories increased to 49,360,436 as on December 14th, 2018 against 24,162,069 in the same period previous year.
- ✓ Kisan Suvidha app downloads have increased to 901,192 as on December 14th, 2018 against 294,255 downloads in the same period previous year.
- ✓ Four new services added to Kisan Suvidha mobile app during the year, raising the services available on the app to 10.

(Source: Press Information Bureau)

Under the Pradhan Mantri Gram Sadak Yojana, construction of rural roads has been tripled, as outlined in the Interim Budget on 1st February, 2019. Pradhan Mantri Gram Sadak Yojana (PMGSY) is being allocated Rs. 19,000 crore in BE 2019-20 as against Rs. 15,500 crore in RE 2018-19.

Pradhan Mantri Gram Sadak Yojana (PMGSY) aims at providing all-weather road connectivity to the eligible unconnected habitations in rural areas of the country. The programme envisages connecting all unconnected habitations with a population of 500 persons and above in plain areas.

Also, eligible are the unconnected habitations with 250 persons and above in special category States such as North-East, Sikkim, Himachal Pradesh, Jammu & Kashmir and Uttarakhand, the Desert areas (as identified in Desert Development Programme) and 88 Selected Tribal and Backward districts as identified by the Ministry of Home Affairs/Planning Commission. For most intensive Integrated Action Plan (IAP) blocks as identified by Ministry of Home Affairs, the unconnected habitations with population

100 and above is eligible to be covered under PMGSY.

The BPO movement is slowly making inroads to smaller towns to create employment opportunities and promote IT-ITeS industry and aims to secure a balanced regional growth. Under India BPO Promotion Scheme, 45,840 seats are allocated to 163 companies, resulting in setting up of 240 units distributed across 110 locations of 20 States and 2 UTs.

BPOs are promoting local entrepreneurs and employment to women and differently-abled. BPOs have started operation at several locations, including, Bhaderwah, Budgam, Jammu, Sopore and Srinagar in Jammu and Kashmir, Guwahati, Kohima, Imphal in North-Eastern region, Baddi and Shimla in Himachal Pradesh, Patna and Muzzaffarpur in Bihar, Jaleswar in Odisha.

(The author is a New Delhi-based communications strategist and former journalist. Email: siddharthapsaikia@gmail.com)

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INITIATIVES TO EMPOWER RURAL YOUTH

Pravakar Sahoo, Abhirup Bhunia

The growth potential through demographic dividend depends upon shifting labour force from agriculture. The need of the hour is skilling large number of young labour force to benefit from the changing market and production structure. India can be the hub for other countries for their outsource work and manufacturing provided India improves its education system imparting right training and skills to the labour force.

Providing employment, securing livelihoods and improving incomes of people are among the most critical developmental outcomes that governments across the board strive to achieve. These include sector-specific policies (e.g. to improve agricultural productivity and incomes, or boosting textiles exports, etc.), ecosystem-wide development initiatives (e.g. improving financial inclusion, creating digital infrastructure, etc.) and entrepreneurship or self-employment schemes (e.g. Start Up India, MUDRA, etc.).

The biggest strength of Indian economy is its favourable demographic composition. India, 2nd most populous country with 1.35 billion population (UN, 2018), is the largest young nation having 877 million working age population, population between 15 to 64 years as percentage of total population. The working age population is expected to rise for next couple of decades where as all other big economies including China will have high dependency rate. According to IMF, India can improve upto 2 per cent annual growth rate, if the demographic dividend is harnessed appropriately (Sahoo, 2018)¹.

However, the growth potential through demographic dividend depends upon shifting labour force from agriculture. The need of the hour is skilling large number of young labour force to benefit from the changing market and production structure. India can be the hub for other countries for their outsource work and manufacturing provided India improves its education system imparting right training and

skills to the labour force. In this context, 'Kaushal Bharat' program, which has the target of training 400 million citizens by 2022, is a welcome initiative. The initiative includes various programs such as *Pradhan Mantri Kaushal Vikas Yojana*, National Policy for Skill Development and Entrepreneurship 2015, Skill Loan Scheme, and the National Skill Development Mission.

Government has taken few important initiatives to give push to the rural youth. The rural youth push is even more important as more than half of India's 63 million MSMEs are in rural areas. It is common knowledge that MSMEs typically face credit constraints as well as market access issues.

Various Initiatives

The following sections outline in brief the various initiatives which have the potential to empower rural youth through job creation and skill development.

MUDRA : The Micro Units Development and Refinance Agency (MUDRA) Bank was founded with the motto of "funding the unfunded" by extending financial support, including refinancing, to the micro segment of the Indian economy. In order to provide fund for those institutions and individuals (nearly 5.8 crore non-corporate small business sectors through last mile financial institutions like NBFCs, MFIs and banks etc.), MUDRA Ltd (initially an NBFC) has been recognized by official statement as MUDRA². The scheme seeks to enhance the employability and





self-employability of youth in India, in addition to protecting the non-banking financial companies (NBFC) lending to small business in the country. These will help to increase the confidence of young, educated or skilled rural youth who will now aspire to become first generation entrepreneurs. The existing small businesses, too, will be able to expand their activities.

Launched in April, 2015, Rs. 4.6 trillion (4.6 lakh crore) credit has been sanctioned under the scheme as on February, 2018 spread across 10.38 crore beneficiaries. Women's financial inclusion has massive implications on overall human development. For 2018-19, the loan disbursement target is set at Rs. 3 trillion (3 lakh crore).

Pradhan Mantri Kaushal Vikas Yojana (PMKVY): The PMKVY is a flagship program of the Ministry of Skill Development & Entrepreneurship (MSDE), GoI aimed at improving vocational skills of youth. In terms of scope and potential impact, this is a program with vast implications on rural youth of the country. The objective of this Skill Certification Scheme is to enable a large number of Indian youth to take up industry-relevant skill training that will help them in securing a better livelihood. Individuals with prior learning experience or skills are also assessed and certified under Recognition of Prior Learning (RPL). Short-term training, *kaushal* and *rozgar melas*, placement assistance are among the key components of the scheme.

Rs. 3,044 crore has been allotted to train the Indian youth under this scheme with coverage

reaching 19.58 lakh youth so far. According to the data provided by the Skill Development Management System (SDMS), 19.58 lakh candidates were certified under Short Term Training of PMKVY 2016-20 till November 30, 2018. Out of these candidates, 9.99 lakh candidates have been placed in various sectors which accounts for 54.9 per cent placement record of the skill project running throughout the nation.

The PMKVY Pradhan Mantri Kaushal Vikas Yojana (PMKVY) scheme has the potential to drive up employability, undercut unemployment and underemployment, as well as improve productivity and incomes. This will be hugely complementary to the self-employment drive by way of MUDRA and Start-Up India.

Start Up India: Start Up India aims at fostering a favourable environment for startups³ in view of boosting economic growth and bringing about job creation. The campaign is centred on an action plan with three pillars: (1) simplification and handholding, (2) funding support and incentives, and (3) industry-academia partnerships and incubation.

The Ministry of Human Resource Development and the Department of Science and Technology have agreed to partner in an initiative to set up over 75 start-up support hubs under the program. The Reserve Bank of India will also take steps to contribute to an ecosystem that is conducive for the growth of start-up businesses.

Under the scheme, a Start Up India hub has been created (pan-India) as a single contact point for start-up foundations in India, which will help the entrepreneurs to exchange knowledge and access financial aid. Patent protection, which is important to incentivize innovations, will also be ensured through a fast-track system for patent examination at lower costs. The system will promote awareness and adoption of the Intellectual Property Rights (IPRs) by the start-up foundations.

Policies and incentives include extending tax exemption, patent grants, and self-certification facilities to start-ups. These recognition have enabled the 14K start-ups from across 484 districts of India. 55 per cent of the start-ups are located in Tier 1 cities while 27 per cent and 18 per cent are based out of Tier 2 and 3 cities.

Make in India: Although not specifically an MSME scheme, 'Make in India' is the leading initiative for industrial development and has profound implications for manufacturing sector job creation. It has the potential to shift agricultural labour to manufacturing through investments in labour-intensive manufacturing including through MSMEs which contribute more than 40 per cent to the country's GDP. In particular, the scheme can potentially create employment opportunities in rural India through convergence with schemes such as MUDRA and PMKVY. While actual investments will be contingent on the business climate (gauged through indices like the Ease of Doing Business Index, etc.), the scheme can increase employment through backward linkages, improved supply chains linking micro-enterprises in rural India with national and global supply chains.

Investments such as TCL's manufacturing unit in Tirupati, or smartphone manufacturing plant in NCR have possible direct and indirect impacts on job creation. Cluster development initiatives such as mega textile units in Uttar Pradesh have higher job creation potential for rural youth due to their labour intensive nature, and relatively lower skill requirements.

Moreover, fast moving consumer goods, as well as white goods, including electrical appliances are sectors which speak well to the potential of not just boosting investments under Make in India, but also delivering on PM's job promise on a large scale. Through better convergence with PMKVY (which imparts vocational training), trainees may benefit from placements in large industrial units.

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA): The Act came into force initially in 200 districts, and was extended gradually to other areas notified by the Central Government⁴. This is one of the continuing flagship programs of the Government to provide minimum number of days of employment to rural people including youth.

Deen Dayal Upadhyay Gramin Kaushal Yojana (DDU-GKY): It caters to rural youth employment opportunities. One positive attitude towards this initiative is that the funds are disbursed through a digital voucher directly into the qualified applicant's



bank account. It seeks to reposition rural India as a resource that can support the needs of the global manufacturing industry.

Self-Employment and Talent Utilisation (SETU):

It is a techno-financial, incubation and facilitation programme to support all the aspects of start-up business and other self-employment activities, particularly in technology-driven areas.

Self-employment in Horticulture: It provides funds up to 10 lakhs for starting-up a horticulture farms. The scheme has enhanced horticulture production, improved nutritional security and income support to farm households and others; has established convergence and synergy among multiple on-going and planned programmes for horticulture development. The scheme has also helped in generating employment for skilled and unskilled persons, especially unemployed youth.

National Rural Livelihood Mission (NRLM)/

Aajeevika: It is designed as a special programme for rural development. For basic skill development for the BPL rural youths, the Rural Self Employment Institutes (RSETIs) under NRLM have been set up which enables them to undertake micro-enterprises and wage employment. It also skills the rural youth and provides them jobs with regular monthly wages at or above the minimum wage rates. It was one of the cluster of initiatives of Rural Development Ministry aimed at promoting rural livelihoods. Aajeevika Skills involve few distinct steps like awareness building about opportunities, identifying rural youth for, mobilising who are interested, counselling of youth and parents, selection based on aptitude, and imparting knowledge industry linked skills to improve their employability.

The Sampoorna Grameen Rozgar Yojana:

This scheme of the Ministry of Rural Development

Deendayal Antyodaya Yojana National Rural Livelihood Mission (DAY:NRLM)

A Key Partner for Improving Maternal,
Infant and Young Child Nutrition situation in India



provides additional wage employment in the rural areas and thereby provides food security and improve nutritional levels.

Swarnjayanti Gram Swarozgar Yojana (SGSY): It was introduced by the Ministry of Rural Development to assist the poor families living below the poverty line in rural areas for taking up self-employment. This Central Government funded scheme helps users in providing information and guidelines for setting up the *Haats*, credit related issues, etc.

Steps for Small and Medium Enterprises

MSMEs are employment intensive and the backbone of Indian economy. India has a total of 633.9 lakhs MSMEs comprising 630 lakhs of micro units, 3.3 lakhs of small units and 0.05 lakhs medium units (GOI, 2017-18). MSMEs contribute 32 per cent of total value added and employ 111 million workers. MSMEs have a great role to play for 'Make in India' to succeed as one-third of Indian MSMEs are engaged in the manufacturing activities and they contribute about half of the manufacturing output. MSMEs are labour intensive and carry huge potential to generate employment. There are very specific initiatives taken by the Government in recent years to help SMEs which would provide

employment opportunities to rural youth.

There has been enhanced disbursement of funds for MSMEs sector. Budgetary allocation has gone up from Rs. 6481.96 crore in 2017-18 to Rs. 6552.61 crore in 2018-19 for MSMEs. In October, 2017, the Ministry of MSMEs set up an online portal aimed at monitoring cases of delayed payments to SMEs and enforcing provisions under the MSMED Act, 2006 – MSME Samadhaan. A mandatory online census of MSMEs in India is taking place, following the launch of the web-based MSME Databank. In January, 2016, Ministry of Textiles introduced 'Amended Technology Upgradation Fund Scheme' with provision of one-time capital subsidy for eligible benchmarked machinery. Scheme of Solar Charkha Mission proposes to harness non-conventional solar energy to further

employment generation.

Footnote

- 1 Sahoo, P, "Economy: How to Move from Sixth to Third by 2030?" Deccan Herald, 16th July, 2018.
- 2 The Bank is initiated and set up with a corpus of Rs. 20,000 crore and a credit guarantee fund of Rs. 3,000 crore. Along with an additional provisioning of fund amounting to 1 lakh crore, the given allotments are decided by the government: 40,000 crore rupees under the Mudra Bank Shishu Loan Scheme, 35,000 crore rupees under the Mudra Bank Kishor Loan Scheme and 25,000 Crore Rupees under the Mudra Bank Tarun Loan Scheme.
- 3 A startup in India is an entity which was opened less than seven years ago and has an annual turnover of less than INR 250 million (USD 3.9 million) (Ministry of Commerce and Industry, 2017).
- 4 <https://www.india.gov.in/policies-and-acts-ministry-rural-development>

(Pravakar Sahoo is Professor, Institute of Economic Growth (IEG), Delhi. Abhirup Bhunia is Senior Analyst, IPE Global, Delhi.
Email: pravakarfirst@gmail.com)

AGRICULTURAL SUSTAINABILITY UNDER RESOURCE SCARCITY

Ashwini K Swain, Ira Sharma, Sarada Prasanna Das

There is a need to reorient and align policies that affect land use, crop choices, fertiliser use, irrigation practices and energy inputs to complement each other towards the common goals of sustainability and growth.

India remains predominantly an agrarian country. While agriculture as a source of employment declined in most countries, between 1980 and 2011, agriculture dependent population in India rose by 50 per cent (World Watch, 2014). Agriculture remains vital to the Indian economy. It employs almost half of the nation's workforce and provides livelihood for majority of population. On the other hand, food accounts for half of the average Indian household expenditure, which is an important component of inflation. India's agriculture sector is caught between meeting national demand for food, at an affordable price, and generating the necessary income to provide for basic standards of living for majority of population.

About 70 per cent of India's arable land is drought prone, 12 per cent is flood prone, and 8 per cent is cyclone prone (Aggarwal, 2014). Evaporation rates are likely to increase, potentially increasing the need for irrigation in both river and groundwater dependent lands. The Fifth Assessment Report of the IPCC predicts a significant drop in Indian agricultural yield owing to temperature rise (Hijioka et. al., 2014). Oxford Martin Future of Food Programme estimates that more than a quarter of all climate-related deaths due to changes in food production, and subsequent change in diets and body weight, will occur in India (Springmann et.al.,

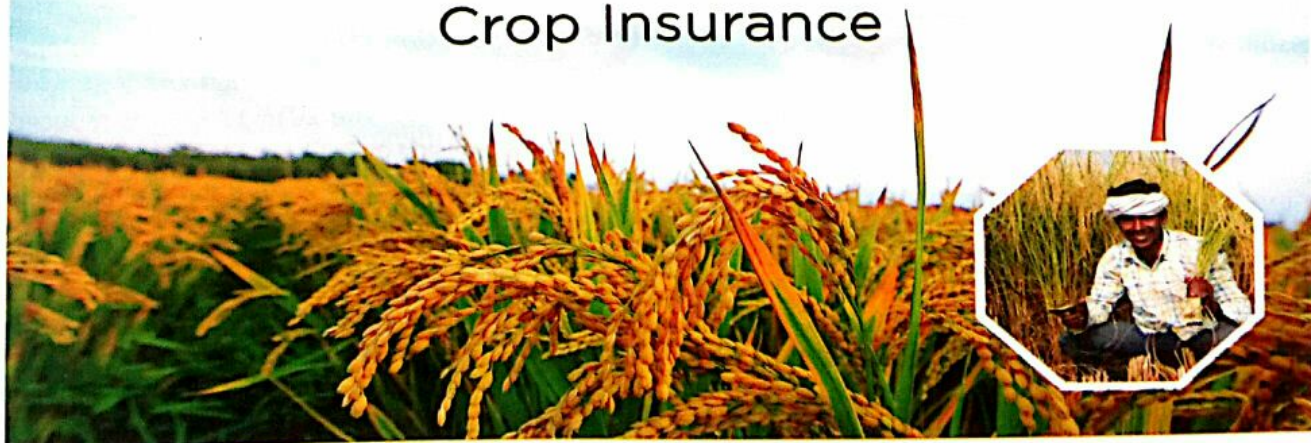
2015). India's challenge is to produce adequate food "sustainably" to meet an ever-increasing demand. Agricultural production also contributes to climate change, accounting for 17.6 per cent of gross greenhouse gas emissions in India. Add emissions related to consumption, including electricity, diesel and fertilisers, and that figure rises to 27 per cent (Hoda and Swain, 2016).

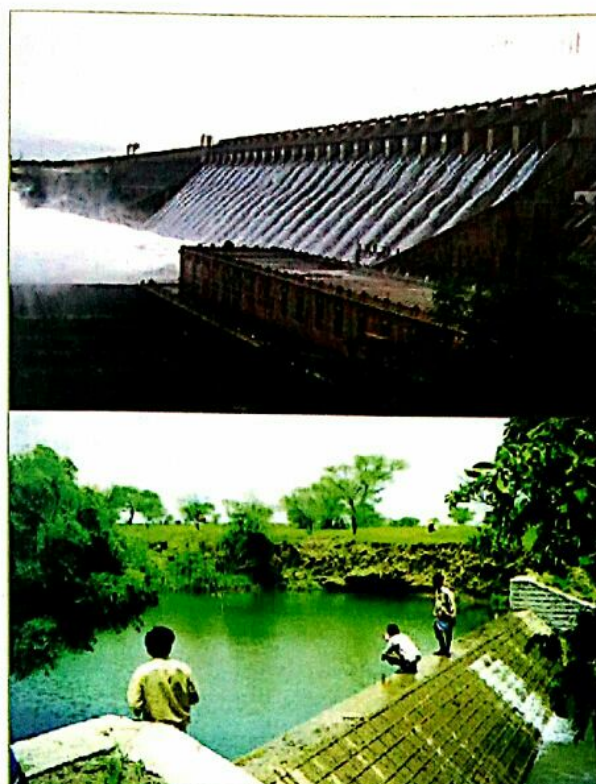
Over the last two decades, agricultural resource use, in particular use of electricity, groundwater and chemical fertilisers, has been a major policy concern. The policy debate, however, is dominated by the provision of subsidised electricity and the resulting excess withdrawal of ground water.

Agriculture dominates India's freshwater use, accounting for 70 per cent of total consumption according to some estimates (Fishman et.al., 2015). Nearly half of this water comes from groundwater. Since electricity subsidies were introduced in the early 1970s, the area irrigated by groundwater has almost quadrupled. The area irrigated by surface water has remained the same. While most agricultural states are experiencing groundwater depletion, Haryana, Punjab, Rajasthan and Delhi have reached hazard point.

The use of chemical fertiliser has significantly increased. Prior to the Green Revolution, in 1966-67,

Pradhan Mantri Fasal Bima Yojana Crop Insurance





Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)

Har Khet Ko Paani



it stood at 1.1 million tonnes (MT). By 2015-16 it had risen to 26.2 MT. Although India's average fertiliser consumption is relatively low (at 128 kg per hectare), it varies across states. States like Andhra Pradesh, Haryana, Punjab and Telangana have a consumption of 237, 231, 221 and 227 kg/hectare respectively, much higher than global average for middle income countries, i.e. 154 kg/hectare. Again, the increasing use of fertiliser is driven by continued government subsidies. After food and petroleum, fertiliser is the next most-subsidised product.

Indian states with high fertiliser usage also have higher dependence on groundwater for irrigation. Chemical fertiliser usage coincides with demand for water, and therefore energy, while cheap electricity allows water to be overused in turn leading to soil degradation, and nutrient imbalance, thus more fertiliser is required. In addition, groundwater depletion leads to the drilling of deeper wells to access water, again increasing demand for electricity.

India may have good reasons to maintain its global position which is not to pursue mitigation in agriculture but improving resource use efficiency in the sector is in its national interest if the sector is to be robust and resilient to the effects of climate change.

Way Forward

The Economic Survey 2015-16 makes the case for 'a new paradigm' for agricultural development,

aimed at getting 'more from less' - more productivity from less resources. It specifically points out the need to 'economize on the use of water' in agriculture. The Survey recommends direct benefit transfer to the farmers as a solution to subsidy woes (Gol, 2016). Raising similar concerns, a NITI Aayog paper claimed that the "area under irrigation can be doubled in the country without extra water if we attain water use efficiency level of countries like China, USA and Brazil." It made strong suggestions to improve water and fertiliser use efficiency and highlighted the need to ensure remunerative prices for farmers, measures necessary to raise productivity and spread green revolution to Eastern States (NITI Aayog, 2015). Many of these issues were identified in the 12th Five Year Plan document.

The call 'Per Drop, More Crop', is for promoting farming through optimum utilisation of water. The *Pradhan Mantri Gram Sinchai Yojana*, aims to provide nationwide access to irrigation and improving water use efficiency. The 2016-17 budget reduced the fertiliser subsidy by 3.37 per cent year on year. A clear strategy needs to be desired to rationalise fertiliser use.

The vision to double farmers' income has evoked strong responses. Making farming more remunerative for farmers is critical for India to sustain agricultural activity, to achieve food security and to meet the Sustainable Development Goals.

An appropriate strategy is required to deal with resource scarcity and environmental degradation. The intent is evident in multiple initiatives by the Government of India. The National Mission for Sustainable Agriculture was conceptualised in 2008 to make agriculture more productive, sustainable, remunerative and climate resilient by promoting location specific integrated farming systems. In 2014, the National Mission on Agricultural Extension and Technology was initiated to restructure and strengthen agricultural extension to enable delivery of appropriate technology and improved agronomic practices to the farmers. The *Pradhan Mantri Krishi Sinchayee Yojana* aims to achieve convergence of investments in irrigation at the field level, expand cultivable area under assured irrigation, improve on-farm water use efficiency, enhance adoption of precision-irrigation and other water saving technologies, enhance recharge of aquifers, introduce sustainable water conservation practices and attract greater private investment in precision irrigation system. *Pradhan Mantri Fasal Bima Yojana* aims to support agricultural sustainability by way of providing financial support to farmers suffering crop loss or damage arising out of unforeseen events, stabilizing the income of farmers to ensure their continuance in farming and ensure flow of credit to agriculture. The National Agriculture Market is a pan-India electronic trading portal which networks the existing Agricultural Produce Market Committee (APMC) mandis to create a unified national market for agricultural commodities.

An alternative approach is needed to change entrenched practices. This needs to acknowledge the scarcity value of interlinked resources and the costs of their use and understand how they feature in farm-level decision making and village economies. With this knowledge, a range of levers would be available to influence consumption and production choices. There is a need to reorient and align policies that affect land use, crop choices, fertiliser use, irrigation practices and energy inputs to complement each other towards the common goals of sustainability and growth. Policies will need to combine sticks with carrots and both with better information.

References

- Aggarwal, P K (2014): Can our agriculture tackle climate change? *Business Line*, April 7, New Delhi.
Fishman, R., Devineni, N. & Raman, S. (2015):

Can Improved Agricultural Water Use Efficiency Save India's Groundwater?, *Environmental Research Letters*, Vol. 10, No. 8.

Gol (2016): *Economic Survey of India: 2015-16*, New Delhi: Government of India.

Hijioka, Y., Lin, E. & Pereira, J. J., (2014) Chapter 24: Asia, in *Climate Change 2014: Impacts, Adaptation, and Vulnerability, IPCC Working Group II Contribution to AR5*. Intergovernmental Panel on Climate Change.

Hoda, A. & Swain AK (Forthcoming): Low Carbon Strategies for Indian in Agriculture and Forestry, *NCE Working Paper*, New Climate Economy.

IFPRI (2015): *Global Hunger Index Report*, Washington DC: International Food Policy Research Institute.

NITI Aayog (2015): Raising Agricultural Productivity and Making Farming Remunerative for Farmers, An Occasional Paper, NITI Aayog, Government of India.

Planning Commission (2014): *Evaluation Study on Integrated Scheme of Micro Irrigation*, New Delhi: Planning Commission of India.

Richey, A. S., Thomas, B. F., Lo, M., Reager, J. T., Famiglietti, J. S., Voss, K., Swenson, S. & Rodell, M. (2015): Quantifying Renewable Groundwater Stress with GRACE, *Water Resources Research*, Vol. 51, Issue 7: 5217-5238.

Springmann, M., Godfray, H. C. J., Rayner, M. & Scarborough (2016): Analysis and Valuation of the Health and Climate Change Cobenefits of Dietary Change, *Proceedings of the National Academy of Sciences of the United States of America*, Vol 113, No 15.

Swain, AK & Price, G (2016): 'A New Paradigm for Agriculture?', *Mint*, March 09.

Third Pole (2014): Satellite technology shows that groundwater in key states in northern India has continued to deplete rapidly over the past five years. www.thethirdpole.net/groundwater-levels-dip-alarmingly-in-north-india/

Worldwatch Institute (2014): *Agricultural Population Growth Marginal as Nonagricultural Population Soars*, www.worldwatch.org/asia-and-africa-home-95-percent-global-agricultural-population.

(Dr Ashwini K Swain is Executive Director, Ira Sharma is Research Associate, and Dr Sarada Prasanna Das is Fellow at Centre for Energy, Environment & Resources, New Delhi.
Email: aks@ceer.in)

RURAL ELECTRIFICATION – FREEDOM FROM DARKNESS

Nirendra Dev

Rural electrification may not be considered as a basic human need like water and food although a study by the World Bank sometime back revealed that rural electrification has various benefits such as improvement of health facilities, better health from cleaner air as it leads to reduction in use of polluting fuels for cooking, lighting and heating, improved knowledge through increase in access to better nutrition knowledge through television campaign. It is also believed and not without good reason that electrification also helps in improvement in children's education leading to better living standards.

Electrification of villages in last few years has certainly changed the face of 'Bharat' – often called as 'rural India'.

Studies have claimed that in some villages it was reported that crime rate declined due to availability of street lights.

Limited access to electricity for poor especially in rural areas, load shedding issues as the power generation capacity unable to meet peak demand and issues of limitation of the supply reliability, in terms of predictability of outages and quality of power. These are now thing of the past.

A new India - where every child progresses in life without any deprivation – especially the access to electricity is the need of the hour.

The expansion of electricity services and rural electrification are vital to both the economic and social development of India.

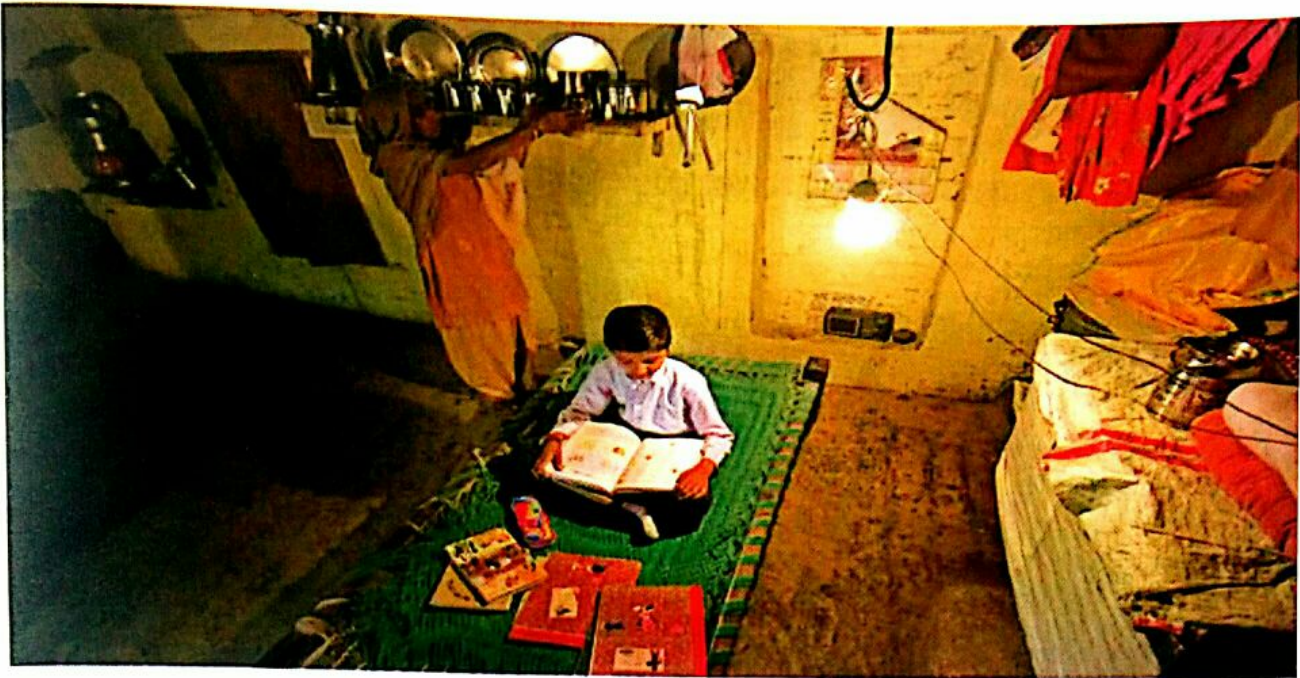
This amazing sub-continent with its mosaic of colours, contrasts and cultures have leaped forward in last few years and rural electrification would always be hailed as a major milestone.

India, in other words, is perhaps living today – according to its deserving potentials and the rural India with its illuminated villages have truly contributed for nation's forward march on multiple fronts.

Now every village has been electrified. Under the 'Pradhan Mantri Saubhagya Yojana', 2 crore and 47 lakh homes have been provided electricity connection. India is rapidly moving on the path where every home is electrified.

In the entire process, a vexing contradiction too has been done away with. Often intellectuals would debate on the fact that India remained





a country with a vast army of engineers and technocrats while on the other hand, the country had a vast hinterland where children study by flickering lamps and villagers live life in darkness.

As it is, India has been the world's third largest producer and consumer of power, and the major issue here was problems in distribution.

One issue was more-emphasis on grid rural electrification and less stress on use of renewable energy resources—Solar energy, Wind energy and Hydro energy.

In May, 2014, as many as 18,452 villages were without electricity in India. By April 28, 2018 all of the country's 5,97,464 census villages have been electrified.

In 2014-15, before Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) had begun, only 1,405 villages were electrified. In November, 2015, after DDUGJY for rural electrification was approved, things started moving.

In retrospect, surveys reveal that since 2015, on an average of 16 and a half villages were electrified every day.

Under the Deendayal Upadhyaya Gram Jyoti Yojana for Rural Electrification, the erstwhile Rajiv Gandhi Grameen Vidyutikaran Yojana scheme for village electrification and providing electricity distribution infrastructure in the rural areas has been subsumed. Rural

Electrification Corporation was made the Nodal Agency for implementation of DDUGJY.

Under DDUGJY-RE, Ministry of Power sanctioned 921 projects to electrify 1,21,225 un-electrified villages, intensive electrification of 5,92,979 villages and provide free electricity connections to 397.45 lakh BPL rural households.

Now to understand some of the intricacies, as per the Union Power Ministry's definition, a village is said to be electrified if at least 10 per cent of the households in it have power connections.

In addition, electricity ought to be provided in public places such as schools, panchayat offices, health centres and community centres.

To take electricity to 'all households', the Pradhan Mantri Sahaj Bijli Har Ghar Yojana or the Saubhagya scheme was launched. Of the Rs. 16,320 crore ear-marked for the ambitious task, a sum of Rs. 12,320 crore has already been provided.

The progress of village electrification in three years from 2012-13 to 2014-15, prior to commencement of Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), on an average was only 1730 villages per year, including lowest ever figure of 1197 villages in 2013-14.

Pradhan Mantri Sahaj Bijli Har Ghar Yojana —“Saubhagya” is to ensure electrification of all willing households. The total outlay of the project is Rs. 16, 320 crore while the Gross Budgetary

Support (GBS) is Rs. 12,320 crore. The outlay for the rural households is Rs. 14,025 crore while the GBS is Rs. 10,587.50 crore. For the urban households the outlay is Rs. 2,295 crore while GBS is Rs. 1,732.50 crore. The Government of India will provide largely funds for the Scheme to all States/UTs.

The beneficiaries for free electricity connections would be identified using Socio Economic and Caste Census (SECC) 2011 data.

However, un-electrified households not covered under the SECC data would also be provided electricity connections under the scheme on payment of Rs. 500 which shall be recovered by DISCOMs in 10 instalments through electricity bill.

The expected outcome of the Scheme is on following lines: Environmental upgradation by substitution of Kerosene for lighting purposes, Improvement in education services, Better health services, Enhanced connectivity through radio, television, mobiles, increased economic activities and jobs and overall improved quality of life especially for women.

Let's light up the Nation

There has been a special focus on improvement in living conditions of rural women and hence the overall rural electrification and Pradhan Mantri Sahaj Bijli Har Ghar Yojana can be real game changer.

In India, there has been something unique and appreciable about the women as also their commitment and faith in the cherished traditional wisdom of share and care for their children and family members that propelled them to brave the hurdles. The rural women have not only been active in agricultural fields but also have been actually employed in most arduous field operations like sowing, harvesting, threshing and agro-processing. They have also promoted crop security through the maintenance of diversity and imposed genetic resistance.

Hence, it goes without saying that access to electricity will add to various other advantages for womenfolk in bringing about transformation in rural India. Giving further push to these series of initiatives Saubhagya web-portal was

launched.

The Saubhagya web-portal has a feature on village electrification camps and in line with that, DISCOMs will organize camps in villages/cluster of villages for facilitating on-the-spot filling up of application forms and to complete requisite documentation to expedite release of electricity connections to households.

All the states have been asked to announce the schedules of the village camps to be held and hence create awareness among the people about the one-stop facility for getting electricity connections.

DISCOMs/State Power Department will also adopt the innovative mechanism through dedicated web-portal/Mobile App for collection/consolidation of data in electronic form including collection of application form for obtaining electricity connections. The details of consumers viz., Name and Mobile number/Bank account/Driving License/Voter ID etc., as available, would be collected by the DISCOMs.

Electricity can increase productive hours in a household leading to positive outcomes on education and economic well being. It can also spur innovation and lead to entrepreneurial micro businesses ventures, and in time lead to greater agricultural yields.

Takeaways

During the early period of Five Year Plans, electricity was mainly used for productive input in agro-industries and for irrigation. Household access was only given priority when it was started to be considered as a basic input in the 1980s. With the enactment of the Electricity Act in 2003, the importance of electricity as an infrastructure for changing the landscape was felt.

Other issues involved are duration of supply, power affordability and quality. Rural folks now value electrification of not only their houses but their community places - including schools, primary health centre and their streets.

(Nirendra Dev is a senior journalist with United News of India, (UNI), New Delhi. Email: nirendev1@gmail.com)

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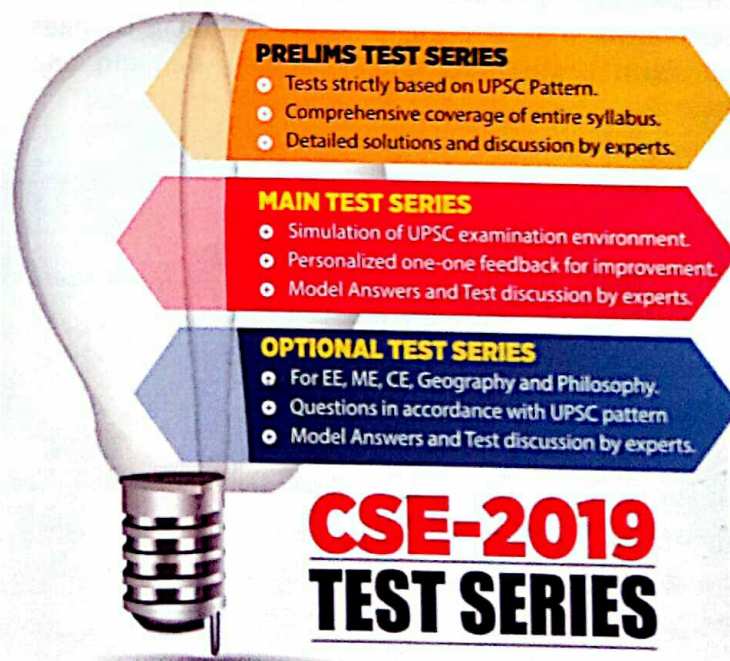
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FARM TECHNOLOGIES TO COUNTER CLIMATE CHANGE

Dr. K. N. Tiwari

State and local governments must integrate policies and technologies that enhance farmer access to new innovations like zero tillage and irrigation, and provide more information on climate change vulnerability, mitigation and adaptation. The government must also adopt multiple approaches that include targeted subsidies for sustainable technologies like zero tillage machinery and precision land levelers, mobilize local civil society organizations to increase knowledge about low-emission practices and use information communication technology to increase awareness and access to information about sustainable agricultural practices.

India is experiencing climate change in terms of unusual and unprecedented spells of hot weather occurring far more frequently and covering much larger areas. Global mean temperatures have risen by 0.6°C in the last century, with the last decade being the warmest on record. Global environmental issues such as land degradation, loss of biodiversity, stratospheric ozone depletion along with human-induced climate change, have exacerbated the complicated situation. Climate change is expected to adversely impact socio-economic sectors, including water resources, agriculture, forestry, fisheries and human settlements, ecological systems and human and animal health in many parts of the world. Under the scenario of 4°C warming, the west coast and southern India are projected to shift to new high-temperature climatic regimes with significant impacts on agriculture. Climate change will have an economic impact on agriculture, including changes in farm profitability, prices, supply, demand and

trade. Magnitude and geographical distribution of such climate-induced changes may affect our ability to expand the food production globally by 70 per cent to feed around 9 billion mouths in 2050. Climate change could have far reaching effects on the patterns of trade among nations, development and food security. To keep global warming possibly below 1.5°C and mitigate adverse effects of climate change, agriculture like all other sectors will have to contribute to manage greenhouse gas emissions as mandated under Kyoto protocol. This article highlights the issues and strategies related to the effect of climate change on agriculture.

Greenhouse Gases Emissions

The active gases including water vapour, carbon dioxide (CO₂), ozone (O₃), methane (CH₄) and nitrous oxide (N₂O), collectively termed as the greenhouse gases (GHGs), warm the Earth by absorbing energy and slowing the rate of energy



escape to space. They act like a blanket insulating the Earth. Emissions of CO_2 , CH_4 and N_2O have been intricately linked with agricultural intensification. The majority of agricultural GHG emissions occurs at the primary production stage and is generated through the production and use of agricultural inputs, farm machinery, soil disturbance, residue management and irrigation, and the rising population of livestock. These are the major drivers for increase in the GHGs emissions. Climate change has manifold effects on nature, society and economy, and ultimately on the environment in which we live.

Global Warming Impacts on Agricultural Productivity in India

Agriculture is an important sector of India's economy, contributing about 17 per cent of national gross domestic product, and providing a livelihood for nearly two-third of the population. Climate change affects agriculture in a number of ways, including changes in average temperatures, rainfall, and climate extremes (e.g., heat waves); changes in pests and diseases; changes in atmospheric carbon dioxide and ground-level ozone concentrations; changes in the nutritional quality of some foods and changes in sea level. Although the yields for cereals, pulses and potatoes have increased over recent years in India, still only half of those are recorded in Western Europe and North America (FAOSTAT, 2015). These differences show the importance of comparing GHG emissions on per kg production basis, as GHG emissions will be greater for low yielding crops than for higher yielding ones. For instance, according to FAOSTAT (2015), rice yields in China are around

twice as those in India. Experimental evidences confirm possibility of reducing CH_4 emissions. Specifically, changing a continuously-flooded system to intermittent irrigation shows potential to greatly reduce CH_4 emissions. Although some studies show that N_2O emissions may increase under intermittent irrigation, the decrease in CH_4 emissions is more than that compensates this effect.

Over the past 25 years, changes in temperature of 1°C or more have been observed in northern India during the rabi (winter) cropping season. Studies at Indian Agricultural Research Institute (IARI), New Delhi show that every rise in 1°C has a potential to reduce wheat production by 4-5 million ton (Mt) in the country.

By 2030, rice and wheat are likely to see about 6-10 per cent decrease in yields. Crops like potatoes, soybean, chickpea and mustard are the crops, on which climate change will have a neutral or positive impact. Crops like soybean and chickpea are likely to benefit from higher level of CO_2 in the atmosphere, a phenomenon referred to as CO_2 fertilisation.

A lot more depends on the net sown area and the geographical location of a region where a particular crop is sown. Mustard, for example, will experience a neutral-to-positive impact in northern India, especially in Punjab and Haryana, where winter temperatures are very low and 1°C rise in temperature won't have much impact on production in this region. However, a similar rise in temperature in eastern and central India will have a negative impact. Potato production will be positively impacted by elevated CO_2 concentration. As per reports from

Central Potato Research Institute, Shimla, potato yield will increase by 11.12 per cent at elevated CO_2 level of 550 ppmv and 1°C rise in temperature. However, further increase in CO_2 with a likely rise in temperature by 3°C will result in decline in production by 13.72 per cent in the year 2050.

Kharif (rainy season) crops will be affected more by rainfall variability, while *rabi* (winter) crops will be impacted more by minimum temperature. Wheat is likely to be negatively impacted in *rabi* season due to terminal heat stress with 1°C rise in temperature results in loss of 4 Mt. Similarly, legumes are going to be benefitted because of elevated level of atmospheric CO_2 .

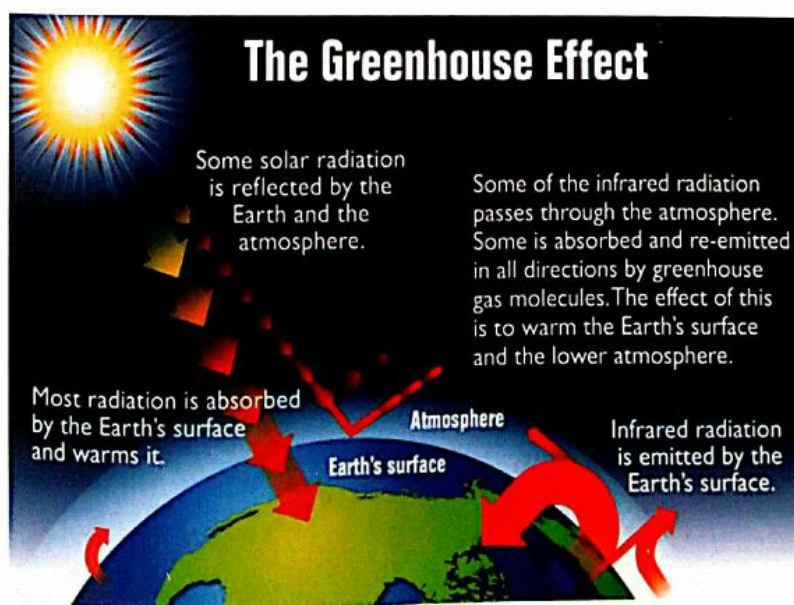


Figure 1. A schematic diagram of greenhouse effect

Climate change and agriculture impact each other on a global scale, albeit with effects unevenly distributed across the world. Agricultural production in developing countries like India located in tropical and sub-tropical zones and practicing various cropping patterns in different climatic zones will be adversely affected by global warming through unpredictable occurrences of drought or floods or precipitation. Climate change will probably increase the risk of food insecurity for poverty-stricken population.

Mitigation and Adaptation Technologies

As for climate, it is clear that rain and sun are essential for growth of plant biomass, but, of course, too much of either or both is harmful. Following mitigation and adaptation measures should be put into place to mitigate adverse effect of changing climate.

(A) Mitigation Strategies

1. Soil Management

Soil Conservation: With the rise of the environmentalist movement in the 1960s and afterwards, it has become common to speak of conserving natural resources such as trees or fossil fuels. Yet, long before humans recognized the need to make responsible use of things taken from the ground, they learned to conserve the ground itself—that is, the soil. This was a hard-won lesson: failure to conserve soil has turned many a fertile farmland into temporary dust bowl or even permanent desert. Techniques such as crop rotation aid in conservation efforts, but communities continue to face hazards associated with the soil. There is, for instance, the matter of leaching, the movement of dissolved substances through the soil, which, on the one hand, can benefit it but, on the other hand, can rob it of valuable nutrients. Issues of soil contamination also raise concerns that affect not just farmers but the population as a whole.

Soil erosion is a major problem in hilly areas and in areas with undulated topography. Erosion transports not only rock sediment but organic material as well. Together, these two ingredients are as essential to making soil, as tea bags and water are to making tea. Soil conservation measures are important to control soil erosion. Farmers should

use contour ridges as a strategy to minimize soil erosion to encourage better root penetration and enhance moisture conservation. Local farmers should improve their adaptive capacity by using traditional pruning and fertilizing techniques to double the tree densities in semi-arid areas. These help in holding soils together and arresting desertification. Natural mulches moderate the soil temperatures and extremes, suppress diseases and harmful pests, and conserve the soil moisture.

Carbon Sequestration : Carbon sequestration is the process involved in carbon capture and the long-term storage of atmospheric carbon dioxide or other forms of carbon to mitigate or defer global warming. It has been proposed as a way to slow the atmospheric and marine accumulation of greenhouse gases, which are released by burning fossil fuels. Carbon sequestration describes long-term storage of carbon dioxide or other forms of carbon to either mitigate or defer global warming and avoid dangerous climate change. It has been proposed as a way to slow the atmospheric and marine accumulation of greenhouse gases, which are released by burning fossil fuels.

For achieving sustainable food security, maintenance of soil health is essential. Soil quality is closely related to soil organic matter; high soil organic matter means high potential productivity and better health of soil. Soil organic matter is a key element responsive to global warming. It improves and stabilizes the soil structure so that the soils can absorb higher amounts of water, thus leading to significant reductions in surface run-off and soil erosion. Soil organic matter also improves the water



absorption capacity of the soil during extended droughts.

Crop Residue Management : A considerable area under rice and wheat is now harvested by combine. Rice and wheat straws left in the field after combine harvesting are generally burnt by the farmers to facilitate seed bed preparation and seeding. These crop residues contain large quantities of nutrients accumulated by rice and wheat crops. Burning of crop residues in the states like Punjab, Haryana, Uttar Pradesh and Rajasthan has significantly contributed to deterioration of air quality. The Government is encouraging the farmers to go in for mechanized options of residue management by way of providing subsidies on purchase of machines and equipments such as happy seeder, straw baler, rotavator, paddy straw chopper/mulcher, gyro rake, straw reaper, shredder, etc., as custom hiring centers or village level farm machinery banks. The State Governments have also been directed to provide Rs. 4,000 per ha from the funds available for demonstration of machines under Sub-Mission on Agricultural Mechanization for demonstration of straw management machinery at farmers' fields. For crop residue management, under Sub-Mission on Agriculture Mechanization, the Department of Agriculture Cooperation and Farmers Welfare, Government of India has allocated funds to Punjab, Haryana, Rajasthan and Uttar Pradesh.

Conservation Agriculture (CA): Conservation agriculture is a green solution to achieve food and nutritional security. The CA-based system substantially reduces the production cost (up to 23 per cent) but produces equal or even higher than conventional system; thereby increasing economic profitability of production system. CA-based production systems also moderates the effect of high temperature (reduced canopy temperature by 1-4 °C) and increases irrigation water productivity by 66-100 per cent compared to traditional production systems.

Minimum Tillage: While intensive soil tillage reduces soil organic matter through aerobic mineralization, low tillage and the maintenance of a permanent soil cover (through crops, crop residues or cover crops and the introduction of diversified crop rotations) increase the soil organic matter. A no- or low-tilled soil conserves the structure of soil for fauna and related macrospores

(earthworms, termites and root channels) to serve as drainage channels for excess water. Surface mulch cover protects soil from excess temperatures and evaporation losses and can reduce crop water requirements by about 30 per cent.

2. Nutrient Management

Balanced and efficient use of fertilizers practiced on each and every holding based on 4R principle *i.e.*, right *nutrient*, right *quantity*, right *time* and right *method* of application is an attractive proposition. Besides enhancing nutrient use efficiency, it helps in reducing the N₂O emissions. To achieve the goal of higher nutrient use efficiency, site-specific demand-driven balanced use of nutrients based on soil tests would be essential and inevitable. Use of fertilizers in conjunction with organic manures, biofertilizers, etc. on the principle of integrated nutrient supply system is a right prescription to increase nutrient use efficiency, minimize use of mineral fertilizers, and reduce GHG emissions. Use of nitrification inhibitors will regulate nitrification and leaf color chart will ensure judicious use of N-fertilizers, increase N use efficiency and reduce N₂O emission and also cut on the fertilizer costs. Promotion of organic farming will arrest fertilizer use and minimize GHGs emissions.

Integrated Nutrient Management: Use of fertilizers along with organic manures, green manures, vermicompost, biofertilizers, neem, *karanj*, pongamia cakes etc., color chart and nitrification inhibitors will improve nutrient use efficiency and improve the soil health. Neem coated urea has an edge over uncoated urea. To reduce the dependence of nitrogen fertilizers, use of *Rhizobium* cultures in pulses and *Azotobacter* in rice, wheat, coarse cereals, millet, smaller millets, cotton, sugarcane, potato etc. help cutting cost on fertilizers through benefits of symbiotic and asymbiotic nitrogen fixation. Many nutrient solubilizing bacteria, for example, K and Zn solubilizers are of great help. Use of phosphate solubilizing bacteria (PSB) is well known tool to solubilize native soil P. Sea weeds like *Sagarika* may play a great role to boost crop growth and also mitigate weather adversities. Biogas slurry can be used successfully to enhance NUE and minimize environmental problems.

3. Water Management

Water is precious natural resource for

sustaining life and environment. Urbanization, population growth, economic development, and increasing demand for water from agriculture and industry are likely to aggravate the situation further. An increase in variability of monsoon rainfall is expected to increase water shortages in some areas. Studies have shown that the threat to water security is very high over central India, along the mountain ranges of the Western Ghats, and in northeastern states.

4. Energy Management

India is moving at a rapid pace to adopt a green shift in its power sector to reduce dependence on the black fossil fueled energy economy. Investments into clean energy in India rose by 22 per cent in the first half of 2018 compared to the same period last year. India has been eyeing the pole position in the clean energy transformation, looking to have at least 175,000 megawatts (MW) of installed renewable energy capacity by 2022. Last year, the country added more power-generation capacity from renewable sources than conventional ones. In fact, half of the world's 10 largest solar parks under construction are in India.

5. Reforestation

Reforestation is the natural or intentional restocking of existing forests and woodlands (forestation) that have been depleted, usually through deforestation. Reforestation can be used to rectify or improve the quality of human life by soaking up pollution and dust from the air, rebuild natural habitats and ecosystems, mitigate global warming since forests facilitate biosequestration of atmospheric carbon dioxide, and harvest for resources, particularly timber, but also non-timber forest products.

(B) Adapting Agriculture to Climate Change

Early Warning and Information Systems (EWIS): With the improved use of Early Warning and Information Systems and Disaster Information Management Systems, the short- and long- term impacts of extreme events on agriculture livelihoods can be assessed. These can help in getting prepared for disaster management preparedness and mitigating the potential risks. Farmers will be benefitted with this approach.

Selection of Suitable Crops and Crop Cultivars: Climate change adaptation for agricultural cropping systems requires a higher resilience against both

excess of water (due to high intensity rainfall) and lack of water (due to extended drought periods). To combat the impacts of these extremes, use of indigenous and locally-adapted plants and animals as well as the selection and multiplication of crop varieties and autochthonous races adapted or resistant to adverse conditions is being propagated.

Preference to Less Water and Less Nutrient Demanding Crops: Crops such as coarse cereals, smaller millets (nutri-cereals), pulses and oilseeds are less nutrient and water demanding crops and also thrive well under extreme temperature and drought conditions. Many of them are of short duration and could be grown successfully as mixed crops and also in the intercropping systems. Replacing the traditional crops with these climate-smart crops can help in combating the adverse effect of global warming.

Selection of Crops and Cultivars Tolerant to Abiotic and Biotic Stresses : The selection of crops and cultivars with tolerance to abiotic stresses (e.g., high temperature, drought, flooding, high salt content in soil, pest and disease resistance) allows harnessing genetic variability in new crop varieties provided the national programmes have the required capacity and long-term support to use them.

Crop Diversification: Diversification either with high value crops or less nutrient and water demanding crops is feasible in the medium to long term. Crop diversity is a high priority adaptation measure in both irrigated and non-irrigated areas. Crop diversification can serve as insurance against rainfall variability and extreme temperature risks.

Change in Cropping Pattern and Calendar of Planting: Climate change adversely affects crop production through long-term alterations in rainfall resulting in changes in cropping pattern and calendar of operations. Most suitable crops, cultivars and cropping system can help in mitigating the extreme weather events.

Mixed Cropping/Intercropping: Mixed cropping/intercropping involves growing two or more crops in proximity in the same field. The system is commonly practiced in India where cereals (maize, sorghum), legumes (beans) and nuts (groundnuts) are grown together. The advantages of mixing crops with varying attributes are in terms of maturity period (e.g., maize and beans), drought tolerance (maize and sorghum), input requirements (cereals and legumes), and end users of the product (e.g.,

maize as food and sunflower for cash). Planting of different varieties of the same crop is considered to be one of the most important adaptations. Different planting dates are also considered an important adaptation.

Integrated Cropping Systems

Biodiversity in all its components (e.g., genes, species, ecosystems) increases resilience to changing environmental conditions and stresses. Trees and shrubs in farming systems (including agroforestry) can play a significant role in mitigating the impacts of extreme events and the resulting threats to food security. Risk-coping production systems, resilient to land and water modifications, require diversified structures in space and time such as crop rotations, agroforestry, crop-livestock associations, crop-fish systems and the use of hedges, vegetative buffer strips and other farm landscaping practices. Accomplishing this can have an enormous impact on adaptation to drought, heavy rains and winds.

Integration of Agriculture with Traditional Knowledge

Evidences, both old and new, suggest that the traditional knowledge and crop varieties of indigenous people and local communities could prove even more important in making agriculture adapt to climate change. Traditional farmers often live on marginal land where climate change impacts and selection pressures are greatest. This enables them to identify resilient crop species and varieties for adaptation. Women and the old are active plant breeders conserving local landraces and selecting seeds for preferred and adaptive characteristics over generations.

Integrated Pest Management (IPM)

To minimize the incidence of pests and enhancing the use of pesticides, IPM is an ideal option. To achieve the goal of IPM, use of nutrients like K and B should be promoted because these help in arresting the adverse impact of abiotic and biotic stresses, and impart drought resistance, respectively. Summer ploughing, green manuring, use of biopesticides etc. should constitute the key components of IPM.

Integrated Farming Systems (IFS)

Integration of agriculture with livestock, poultry, fishery, bee keeping etc. is known as integrated farming system (IFS). Small and marginal farmers having subsistence farming need assistance

for making agriculture profitable so that they could adopt mitigation and adaptation measures. What is needed is development of diverse technologies which ensure optimum use of farm resources, offer attractive economic returns, and impart sustainability to the agricultural development based the tenets of IFS.

Enhancing carbon removal

All crops absorb CO₂ during growth and release it after harvest. The goal of agricultural carbon removal is to use the crop and its relation to the carbon cycle to permanently sequester carbon within the soil. This is done by selecting farming methods that return biomass to the soil and enhance the conditions in which the carbon within the plants will be reduced to its elemental nature and stored in a stable state.

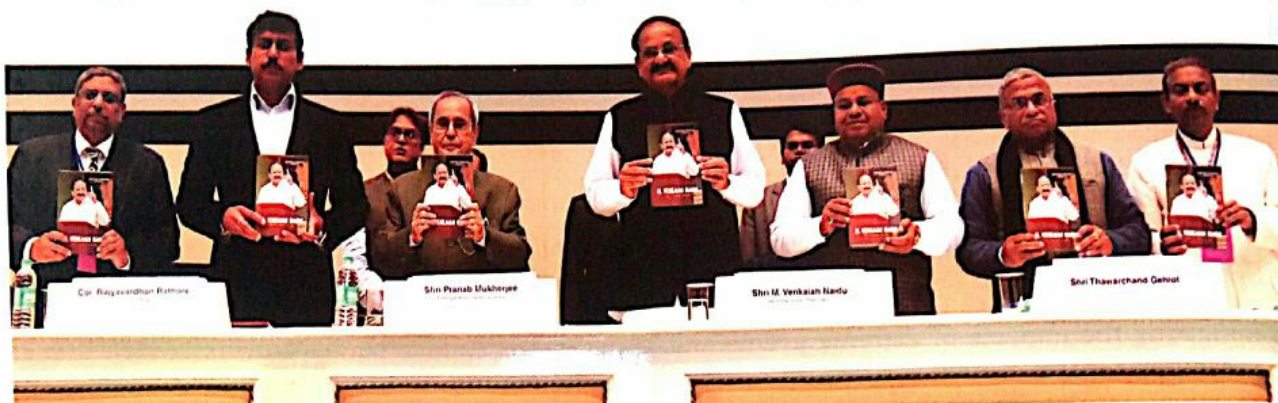
Conclusion

Reduction in the GHG emissions from agricultural intensification should be the main thrust. Issues related to decrease in nitrogen fertilizer use without yield decrements, balanced efficient use of fertilizers adopting best management practices, crop demand driven Site-Specific Nutrient Management (SSNM) based on soil tests, integrated nutrient management, conservation agriculture, organic farming, soil conservation, suitable crops and cropping systems, date of planting, mixed and intercropping, use of indigenous knowledge, traditional agriculture, best care of natural resources, livestock, etc. should be researched from climate change perspective. State and local governments must integrate policies and technologies that enhance farmer access to new innovations like zero tillage and irrigation, and provide more information on climate change vulnerability, mitigation and adaptation. The government must also adopt multiple approaches that include targeted subsidies for sustainable technologies like zero tillage machinery and precision land levelers, mobilize local civil society organizations to increase knowledge about low-emission practices and use information communication technology to increase awareness and access to information about sustainable agricultural practices.

(The author is Former Director, International Plant Nutrition Institute, India Programme, Lucknow.

Email: kashinaththiware730@gmail.com)

Book on Selected Speeches of Hon'ble Vice President of India, Shri M. Venkaiah Naidu, released



The Hon'ble former President of India, Shri Pranab Mukherjee releasing the book "Selected Speeches – Volume 1" of the Hon'ble Vice President, Shri M. Venkaiah Naidu, in New Delhi on February 15, 2019. The Hon'ble Vice President of India, Hon'ble Union Minister for Social Justice and Empowerment, Shri Thaawarchand Gehlot, the Hon'ble Minister of State for Youth Affairs & Sports and Information & Broadcasting (I/C), Col. Rajyavardhan Rathore and other dignitaries are also seen.

In the gracious presence of Hon'ble Vice President of India Shri M. Venkaiah Naidu, a book on his "Selected Speeches" (Vol. 1), brought out by Publications Division, Ministry of I&B, was released by Bharat Ratna and former President of India, Shri Pranab Mukherjee at a function in Vigyan Bhawan, New Delhi on February 15, 2019. The Hon'ble Union Minister for Social Justice and Empowerment, Shri Thaawarchand Gehlot, the Hon'ble Minister of State for Youth Affairs & Sports and Information & Broadcasting (I/C), Col. Rajyavardhan Rathore, the Hon'ble Deputy Chairman, Rajya Sabha, Shri Harivansh, the Secretary to the Vice President, Dr. I.V. Subba Rao, the Secretary, Ministry of I&B, Shri Amit Khare and other dignitaries were present on the occasion. During the event, the participants mourned the loss of lives of CRPF soldiers in the Pulwama terror attack by observing silence.

On the occasion, the Hon'ble Vice President congratulated the Ministry of Information & Broadcasting and the Publications Division, for working diligently to ensure the release of the book. He said: "I owe all of you a brief account of this book based on my mission during the first year in the present role. In a nutshell, it is an earnest endeavour to stir the conscience of all stakeholders to introspect and lend their might to realize the quest of our nation to reach new horizons. I have made a sincere effort in that direction by recalling our past and reflecting on our present as the Young India seeks to define and realize its future." Shri Naidu also spoke at length on many issues confronting the country and various institutions and the need for a united effort to build a good future for the people based on the past and effectively handling the complexities of the present.

Recalling his long association with Shri M. Venkaiah Naidu, Hon'ble Former President Shri Pranab Mukherjee complimented the Hon'ble Vice President on the release of the book. He said that the speeches delivered by Shri Naidu reflect the richness of his experience in public affairs, his vision & aspirations, and his expectations & hope for the future of India. Congratulating the Ministry of Information & Broadcasting for bringing out the book with a beautiful design and layout, he mentioned that over 13 world class publications on various facets of Rashtrapati Bhavan were brought out by Publications Division during his tenure as President of India. He complimented the Publications Division for their professional and *avant garde* work.

Speaking on the occasion, Honourable Minister of I&B, Col. Rajyavardhan Rathore said that he had served with the Vice President of India and it had been a great honour. His wisdom, his wit, his vision is all reflected in the speeches that are now catalogued in this book. He added that in today's world, the young generation should be able to read these books in simpler formats and hence all these books are being made available in online, retail and e-formats too, making things easier.

The book, Selected Speeches of Shri M. Venkaiah Naidu, Vice President of India, contains 92 speeches that have been categorised into six sections: 'Functioning of Legislatures', 'Nation & Nationalism', 'Polity and Governance', 'Economic Development', 'Media', and 'India and the World'. These books are available at the Book Gallery, Publications Division, Sookhana Bhawan, CGO Complex, New Delhi and also online at www.bharatkosh.gov.in; e-versions are available on Amazon and Google Play.

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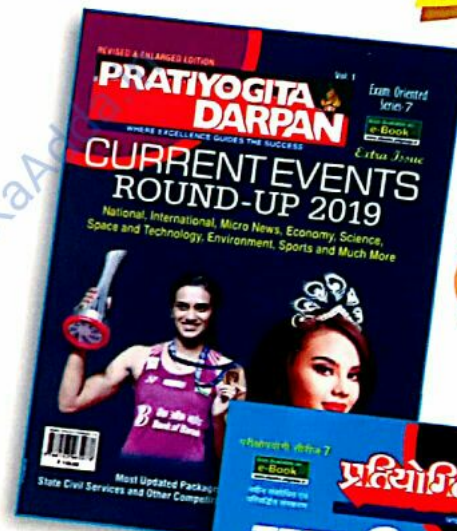
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